

Demographics and Higher Education in Europe – Institutional Perspectives

Lazăr VLĂSCEANU and Laura GRÜNBERG
Editors

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Preface

Demographic trends and developments have recently featured on the policy agenda of many European countries as most of them are confronted with what it is usually described as the “second demographic transition”: population decline and a modification of the age distribution. Populations are decreasing in number but increasing in longevity, there are new lifestyles and new patterns of migration and all this affects in one way or any other higher education systems all over Europe. Moreover, all odds prove that higher education institutions may be deeply challenged by the existing and coming demographic shifts in terms of the organization of their academic work, their organizational cultures and institutional identities, as well as concerning newly emerging types of student flows. Are higher education institutions prepared to adequately react to unprecedented demographic shifts? How should they better respond in the context of such regional developments as the Bologna process? Do good practices exist?

Taking stock of the existing research and policy initiatives, UNESCO-CEPES decided to contribute to the ardent academic and policy debate on the impact of demographic shifts on higher education institutional policies by initiating in 2007 a project entitled **“Demographics and Higher Education in Europe: An Institutional Perspective”**. The project intended to concentrate on a series of specific aspects, particularly those that have thus far been somewhat less developed in research and policies. The approach was so designed as to analyse the current and future demographic developments in a selected number of countries (*i.e.*, Estonia, Germany, Italy, Poland, Romania, Sweden, Russian Federation, Turkey, the UK, and the USA) and relate key demographic indicators to changes in life cycles and lifestyles in order to explore their impact on higher education systems and institutional policies. Country cases were complemented by cross-national analyses of specifically related issues, mainly with reference to regional and global trends and developments. All prepared studies were thoroughly debated during the international conference **“Demographics and Higher Education in Europe: An Institutional Perspective”**, jointly organized by UNESCO-CEPES and the Elias Foundation of the Romanian

Academy in collaboration with OECD and The Institute of Knowledge Society, Warsaw, Poland, in Bucharest, Romania, on 12-13 October 2007. The results of these discussions and reflections are presented in this publication, which is structured in two parts: one offering a general theoretical perspective on the subject (Part I: *“Demographics and Higher Education: Contexts and Prospects”*) and the other presenting national realities from within the higher education systems and, in particular, from the perspective of higher education institutional policies (Part II: *“Country Developments and Challenges: Ways Forward to Designing New Higher Education Policies”*).

What we did was to create a niche for an informed dialogue among scholars from Europe on such a visionary topic as this. We hope the volume as a whole will provide relevant comparative analyses on the demographic impacts on higher education institutions in various European countries and some attention-grabbing suggestions for coping with the present and foreseen demographic challenges. We thank all the authors and the participants in the project for joining us in exploring these issues of wide interest.

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PART ONE

**DEMOGRAPHICS AND
HIGHER EDUCATION:
CONTEXTS AND PROSPECTS**

European Demographic Prospects and Their Impact on Higher Education Institutional Policies

Lazăr VLĂSCEANU and Laura GRÜNBERG

1. Introduction

A new factor has been consistently brought to the fore within the framework of higher education policy analysis and design. This factor refers to demographic prospects as they include issues related to demography *per se*, as well as to others of a wider reference, such as migration flows and changes in lifestyles and life cycles of individuals in this time of high modernity.

There are many reasons for bringing issues related to demographic prospects to a higher education policy framework. Some are induced by the implications of the recent transition of most of the European systems of higher education from elite-oriented to mass or universal systems, in Martin Trow's terminology (Trow, 1973). From such a perspective, when a country's population declines and the higher education system becomes mass-oriented, its institutions should not only consider their policies related to traditional issues such as teaching and learning resources, curriculum design or funding and institutional governance, but also to the demographic sustainability of the mass system. Other reasons are exogenous to the higher education systems and are generated either by changes in qualifications and the labour market, associated as they are with a widely emerging new economy, or by those demographic projections, which are so common to economists in their analysis of a labour market's prospects, as well as by changes in life cycles and lifestyles, as identified by psychologists or sociologists in their analysis of the so called post-materialist society (Inglehart, 1997). For instance, during the period of the recent demographic transitions, most European countries have been confronted with an increasingly declining population, increased migration

flows and an ageing population. Changes in life cycles and lifestyles have also made education increasingly important in the lives of all individuals, thus increasing the demand for higher levels of education.

It appears that, considering the impact of demographic prospects on higher education policy, two assumptions hold a key position. On the one hand, one may take the view that the expansion of student flows questions the sustainability of a mass higher education system when confronted with a demographic decline in the country of concern. On the other hand, it is possible to demonstrate, as some may do, that the elite higher education systems would have turned into mass systems as a result of the pressure by the demographic and individual demand side of the system, regardless of actual or prospective demographic flows. In what follows, such assumptions are further explored, mainly by relying on those facts which demonstrate that an expansion of higher education has occurred both under demographic growth and decline, and that the sustainability of expansion may not necessarily depend on demography alone.

When approaching these issues, it may prove beneficial to explore various alternative options and dilemmas, thus arriving at a better understanding of the demographic impact on higher education policies, particularly at an institutional level. However, it cannot be denied that demographic prospects have so far received “only minimal or short-sighted attention among decision makers at the political as well as the institutional level” (Klemencic and Fried, 2007). This has happened, as many others have argued, despite the growing mismatch between the excess supply of higher education and the shrinking demand due to the population decline in many European countries. How such developments are brought into the analytical framework and what policy implications they may have therefore demands further reflection. In what follows, the analysis will be initiated by taking a closer look at some demographic trends and developments in Europe. This will help to further the reflection on certain options and dilemmas regarding the demographic impact on higher education policy. Finally some implications for institutional policies will be identified.

2. The Demographic “Tyranny of Numbers” and some Complementarities

The sheer scale of today’s higher education systems determines a great deal of its operational modalities, how it relates to the economy and the labour market, and how people’s lives are affected. But most of all the present size of higher education is inevitably related to demographic prospects since they reveal how past growth is sustainable in the shorter or longer run. To begin with, let us consider the global level. Table 1 summarizes both the total number of students in the world and the increase in numbers since 1980. It shows the by now well-known fact, that the numbers of students have constantly increased, to the point where, at the turn of the new millennium, no less than one in five of the globe’s inhabitants were registered as a student in all levels of formal education. Over the last twenty-five years the highest increase in numbers occurred in higher education, which almost doubled, while the proportion of primary and secondary school students has constantly decreased.

Table 1. World population and students: 1980-2005

Year	1980	1991	1999	2005
Total population	4,447,081,447	5,461,689,400	5,978,702,000	6,477,001,177
Total students	856,971,000	995,948,000	1,169,502,963	1,339,110,773
Students of total population (in per cent)	19.27	18.24	19.56	20.67
Primary and secondary students	805,935,000	925,598,000	1,086,253,401	1,201,180,045
Primary and secondary students of total students (in per cent)	94.04	92.94	92.88	89.70
Tertiary students	51,037,000	70,350,000	97,664,562	137,930,727
Tertiary students of total students (in per cent)	5.96	7.06	8.35	10.30

Sources: UNESCO/UIS databases; UNFPA, 1997, 2005; FAO Population Service, 1997.

Enrolment rates in higher education, in Europe alone, have grown from ten to fifteen per cent to over forty per cent, and in many countries to well over sixty per cent of the entire eligible age group. In the UN Europe Region (Europe, North America and Israel), the proportion of tertiary students in

the total number of students has increased from 15.7 per cent to more than twenty-three per cent.

Table 2. Population and students in Europe: 1980-2005

	1980	1991	1999	2005
Total population	1,001,350,000	1,014,146,400	1,032,702,000	1,128,652,995
Total students	178,926,760	205,967,110	219,867,637	225,039,250
Students of total population (in per cent)	17.87	20.31	21.29	19.94
Primary and secondary students	150,820,078	170,526,722	177,666,998	172,203,321
Primary and secondary students of total students (in per cent)	84.29	82.79	80.81	76.52
Tertiary students	28,106,682	35,440,388	42,200,639	52,835,929
Tertiary students of total of students (in per cent)	15.71	17.21	19.19	23.48

Sources: UIS databases; UNFPA, 1997, 2005; FAO Population Service, 1997.

The reason for such an increase is twofold. On the one hand, for most European governments, universities are the hub of the knowledge economy, acting as powerful drivers of technological and other changes critical to national economic and social development. From this point of view, participation levels in higher education have constantly been increasing and a growing number of routes to higher education have been offered. On the other hand, the individual demand for higher education degrees has also constantly increased.

The highlight of such factors is obviously influenced by demography, and the analysis of the demographic impact on higher education is mostly, if not entirely, based on numbers. One regards how demographic growth or decline is related to student flows, and highlights either an increase or decrease in the higher education recruiting pool. The argument goes further by showing how the demographic prospects emerging in a specific country would spill over into other areas of social and economic development, since higher education trains the best qualified labour force in any country and promotes key cultural and social values. Numbers regarding changes in areas of employment and their relation to labour market demands, work productivity and economic development rates are then referred to the flow of educational qualifications for evaluating the (mis)match between labour

demand and supply. An endless array of numbers are invoked and compared, and so demography comes with its own prospects, holding a key position in the demonstration. It might be said that a “tyranny of numbers” is at work. And this also raises various concerns related to the risks for social development or uncertainties embedded in demographic prospects and with regard to their impact on *inter alia* higher education. However, the question is: should we consider only the “numbers” and demographic prospects alone or should we combine them with other factors at work in order to better assess their joint impact on higher education?

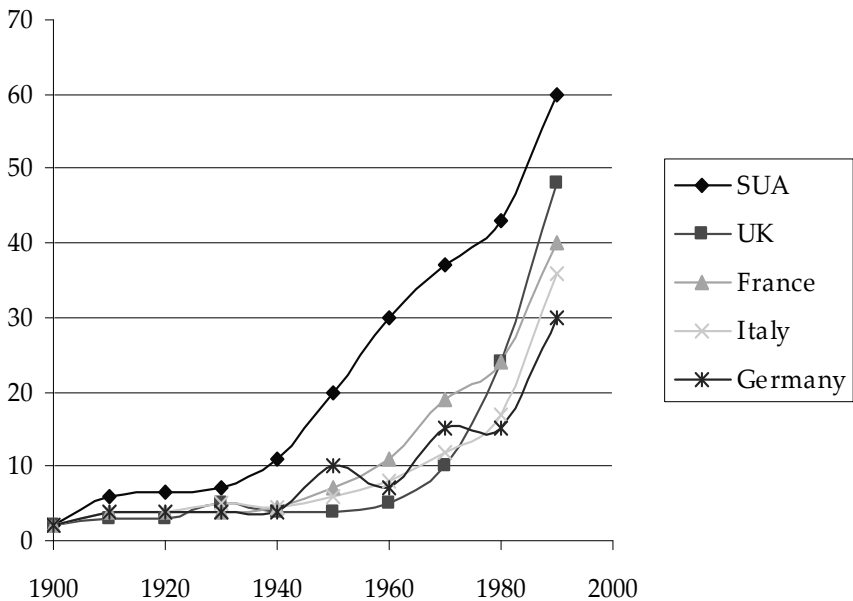
Demography has arrived late, and in fact only very recently entered analytical frameworks focussing on higher education. This entry coincided with the passing of higher education from an elite-oriented system to a mass and in some countries universal system, as well as with the arrival of what economists use to call “the new economy”. For an elite-oriented system, demography was of a little concern. Whatever the size of the population in a country, the existing higher education institutions, small and elite as they were, had a sufficient number of candidates without having to worry about the demographic prospects. Since the number of higher education institutions has grown at a rapid pace and individual demand for higher qualifications awarded by colleges and universities came from a much larger pool of individuals, higher education systems have been expanding dramatically. Let us look more closely at this expansion.

3. Numbers and Flows of Students

Over most of the twentieth century, higher education expanded steadily and slowly together with secondary schooling. Before the Second World War, there were no more, probably less, than two per cent of young people enrolled in degree programmes in almost all European countries. After 1960 the proportions started to grow. Within a generation, since the 1980s and 1990s, university attendance has become a normal pattern for most young people. Alison Wolf has shown how, in a few decades, following developments in the USA, many other systems of higher education followed the same route (Figure 1). By the end of the twentieth century

higher education turned into a universal system in the USA, and into mass systems in France, Germany, Italy and the UK. Between 1995 and 2005 participation in tertiary education grew in absolute terms on average by fifty per cent, while entry rates increased in 2004 by twenty per cent compared to 2000. The USA has now a gross enrolment ratio in higher education of over eighty per cent, Poland and Sweden are close to sixty per cent, Canada has arrived at fifty-nine per cent, while on average countries of the EU have reached fifty-two per cent.

Figure 1. Participation rates in higher education: percentage of age cohort entering higher education



Source: Wolf, 2002, p. 173.

The data are clear: today almost all higher education systems in Europe are either mass or universal higher education systems. A “graduate society” is emerging in Europe, with an average of about a half of the age group following and eventually graduating academic routes. European countries also aim to mirror the USA where more than two thirds of the age cohort enters tertiary education.

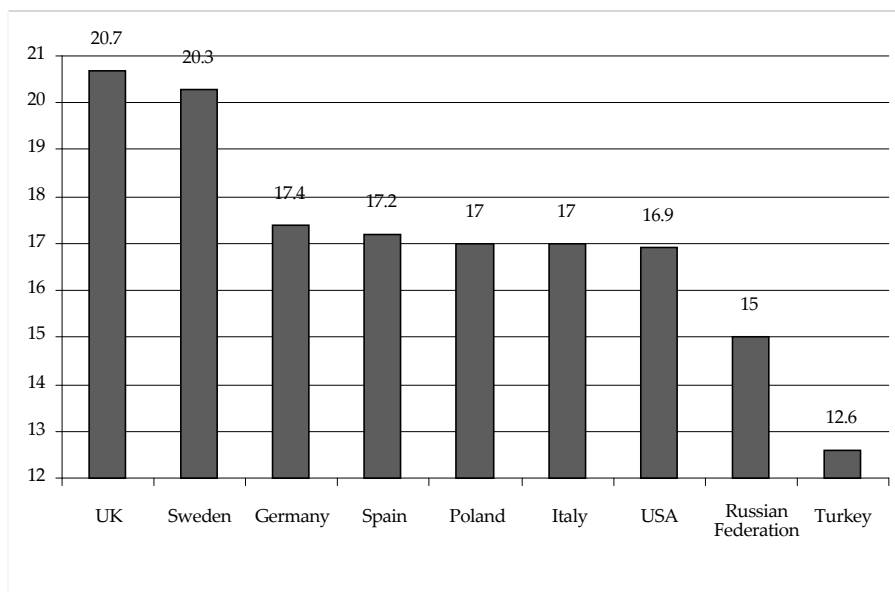
Table 3. Student population in the UN Europe Region

	1980	1991	1999	2005
Total population	1,001,350,000	1,014,146,400	1,284,200,000	1,299,700,000
Total student population	178,926,760	205,967,110	219,867,637	225,039,250
Tertiary students	28,106,682	35,440,388	41,200,689	52,835,929
Percentage of tertiary students in student population (in per cent)	15.71	17.21	18.74	23.48

Sources: UIS databases; UNFPA, 1997, 2005.

Such an expansion of higher education is also reflected in the increase in the number of years a child can expect to spend in some form of formal education (Figure 2 and Table 4).

Figure 2. Education expectancy in some selected European countries



Sources: UIS databases; UNFPA, 1997, 2005.

Table 4. Expected years in tertiary education and changes in tertiary enrolment (1995 = 100), 2004

	Expected no. of years in tertiary education		Changes in enrolment (1995 = 100)		
	Male and Female	Female	Total tertiary education	Attributable to	
				Change in population	Change in enrolment rates
Estonia	3.3	4.1	269	-	-
Germany	2.3	2.3	108	84	124
Italy	2.9	3.3	116	-	-
Poland	3.3	3.9	269	-	-
Romania	2.5	2.7	173	91	197
Russian Federation	3.3	3.8	190	97	193
Spain	3.0	3.4	120	92	128
Sweden	3.0	3.4	152	95	161
Turkey	1.5	1.3	168	114	150
UK	2.8	3.2	124	99	126
USA	4.1	4.8	-	-	-

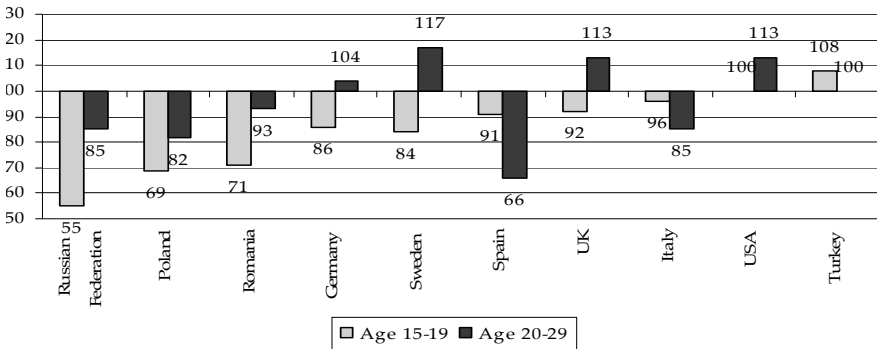
Source: UNESCO/UIS, 2006; UN Statistics Division; OECD, 2006.

During the period from 1995 to 2005, education expectancy increased by around twelve per cent, so that by 2005 a five year-old could expect to spend two more years in education than a decade earlier. Females could expect to spend, on average, a longer period of time in formal education than males, though in countries such as Germany or Turkey the reverse is the case. The increase in education expectancy is due to higher participation in pre-school education, to retaining a higher percentage of students until the end of their teenage years, and also to an increase in participation at the tertiary level. In most European countries an eighteen year-old may expect on average to receive today three years of tertiary education, of which 2.3 years will be full-time.

When higher education becomes mass or universal, demographic prospects should be explored in order to demonstrate the sustainability in the shorter or longer run. However, in doing so, a distinction between the massification of higher education and the sustainability of existing student flows should be made. Higher education massification refers to the percentage of the relevant age cohort that enrolls in higher education. This percentage may grow, while the absolute numbers of student flows may fall.

The demographic prospects do not affect the sustainability of a mass or universal system of higher education, but the absolute numbers of student flows. This is illustrated by numbers in Figure 3.

Figure 3. Demographic trends – 2005/2015 – and prospective tertiary education enrolments (OECD data)



- Countries are ranked in descending order of the size of the fifteen-to-nineteen year old population (2005 = 100).
- Trends in the number of new tertiary graduates follow projections of the population aged twenty to twenty-nine and assume current graduation rates.

Source: OECD, 2006, UNESCO/UIS, 2005.

Taking the year 2005 as reference and the demographic prospects for the year 2015, we see that individual countries may expect changes in the estimated percentage of tertiary students due to changes in the size of the population. Poland, Romania and the Russian Federation face reductions of around thirty per cent or more in the population corresponding to upper secondary education over the next ten year period. They may thus be confronted with a decrease in the number of candidates to tertiary education. The number of graduates of tertiary education will decrease sharply in Spain (thirty-four per cent) over the next ten years and the same may happen in Italy, Poland, Romania, or the Russian Federation. However, this trend may be reversed by increasing the participation rate in higher education, including increases in the number of graduates of upper secondary education and in lifelong education programmes. Increases in the number of tertiary graduates and also in participation rates may occur in Sweden, the UK, the USA or Germany.

The conclusion seems to be obvious: when a country is confronted with a demographic decline the number of student flows decreases. However, the participation rate in higher education may grow in relative terms with reference to the specific age cohort and even to a wider pool of candidates to higher education coming from the older population.

4. Some Complementarities

Conventional demography has encountered certain difficulties in understanding and explaining demographic behaviour and change. Such difficulties originate in the impossible task of a “perfect” measurement and in the lack of exploration of the meanings attached to behaviours being measured. The potential increases in relative, and not necessarily absolute terms of student flows described above are based on several assumptions and on their corresponding evidence. Some of these assumptions, together with their implications, are explored below, in order to highlight some complementarities between demographic numbers and rates as well as some specific changes of a qualitative type in society and in the social demand for higher education.

- i) *Growing individual demand for higher education.* It is clear that the main factor driving expansion in tertiary enrolments is the growing individual demand for higher education. This may be explained in terms of:
 - a) individual rational choices, considering labour market incentives for having a higher education degree;
 - b) recent public policies promoted by most national governments in favour of increasing higher education participation rates;
 - c) social and political pressure for increasing the participation in higher education of various minorities groups (ethnic groups, persons with disabilities, women, etc.);
 - d) the pressures of the new economy demands for higher qualifications.

These four factors have had one converging effect: a growing number of teenagers and adults are increasingly rejecting or are not content with only specialized vocational courses in secondary schools. High school students favour more academically oriented courses that help them opt for tertiary education. Upper secondary and higher education then run convergently: the growing increase in the former is followed by a growing number of students in the latter. A person with a general education received in upper secondary school has almost no vocational qualification, but is well qualified for entering higher education, which assures good post-graduation prospects for joining those graduates who have a better position in society and are better paid. Adults who see an increase in graduate numbers also feel the need to enrol in higher education. The growing individual demand for higher education is thus the end-product of the individual rational choices shaped by the new dominating meanings attached to qualifications in today's world. A. Wolf seems to be right when answering the question regarding the global expansion of higher education in the following way: "Not (though governments hold the purse strings) from any conscious international agreement or resolution. And not because of any simple growth in the economy's [need] for graduates either: there was no dramatic change in late twentieth century occupations that can parallel the surge in student number. Rather, enrolments take off because and when things reach a point of no return: at a certain level of participation, potential students are destined – or doomed – to join in" (Wolf, 2002). The implication of this argument would take the form of the "snowball effect": when a level of participation in higher education reaches a critical point, individual demand will grow, and higher education student flows are bound to increase. There are good chances that the present mass systems of higher education in Europe will become and remain universal systems, regardless of demographic developments. The demographic impact refers to the sustainability of existing student flows in absolute terms and not in relative terms. Moreover demographic decline may not impact only on the demand side of the system, but mostly on the supply of higher education. A reverse tide seems to be in the offing. While previously

the increasing demand for higher education led to an increase in supply, the future may bring a sharp shrinking and stratification in the supply of higher education. Some higher education institutions might be forced to merge with others or close, while others, already better positioned, would consolidate their positioning in the hierarchy.

- ii) *Changes in age distribution of the population and in individual life cycles/lifestyles* also influence higher education student flows, just as they bear on other social processes. The age structure of the population in Europe has changed as a consequence of decreasing fertility and mortality. Life expectancy has been constantly increasing, and, combined with low fertility rates, has led to a shift in the relative weight of the population from younger to older groups. Most European societies are confronted with an ageing population, a feminization of ageing (especially true of the oldest).

Population ageing began in Europe at the end of the nineteenth century, in concurrence with the first demographic transition, but recent trends and projections show that the ageing process is accelerating. As a UN demographic analysis demonstrated (UN, 2007), the number of children in Europe dropped below that of older persons for the first time in 1998. Since then, population ageing has constantly increased. While currently over a fifth of Europe's population is aged sixty years or over, by 2050 the proportion of people over sixty is expected to be double that of children (up to the age of fifteen), reaching the level of almost a third of the population. The population of older persons is also ageing, the number of the persons aged eighty and older, the majority being women, is growing at a pace of 3.9 per cent per year. This trend bears directly on inter-generational and intra-generational equity and solidarity, and also has important economic, social and educational consequences. Population ageing implies a significant increase in public spending, an increased dependency ratio and the risk of depopulation. Nevertheless ageing should be also regarded as a human success story. It is not merely a matter of accumulating years.

It should also be regarded as a process of adding life to years and not only years to life.

While much attention has so far been paid to the economic and social consequences of population ageing in Europe, particularly those of labour market demands and the operation of welfare systems, educational implications have rarely been mentioned. This may be due to the typical demographic approach, which is mostly quantitatively oriented. However, when considering more qualitative information, demographic changes over time and their educational impact may be regarded from a more elaborated perspective. Concerning specific shifts in value orientations, the sociologist Ronald Inglehart demonstrated that in most developed countries a shift from materialist to post-materialist values has been taking place since the end of the twentieth century as a result of a process of inter-generational change in values (Inglehart, 1997). Such a shift is related to changes in both lifestyles and life cycles. The implication is that population replacement is not the only factor at work. It is strongly complemented by inter-generational value changes. Providing that economic security is assured, as it is in most European countries, life cycles cease to follow the traditional linear path, and lifestyles are less connected with social class and traditional values. Instead of following the linear path of moving from the playground to school and then to work, activities related to education, work and leisure alternate all the way through the age of maturity.

Returning to formal education in the later cycles of life, embedding learning into work on a continuous basis, emphasizing the pragmatic aspects of learning and others of the same sort point to two trends: (i) though education is and remains predominantly related to earlier stages of life, a growing number of individuals embark on education programmes in later stages of their life; (ii) boundaries between activities like education, work and leisure are being increasingly blurred, thus allowing for multiple combinations. The implication is that enrolments in education should be explored not only with regard to specific and fixed ages or life cycles. In their later stages of life individuals return to education to enhance their knowledge and skills. They are more prone to do so as a consequence

of the rapid pace of change in technology, economy or culture, but also as a way of achieving objectives of self-realization, so important in a growingly individualized society. Individual demand for higher education, dominant as this may be for young people aged eighteen to twenty-four, is growing also among older people. The pool of candidates for higher education degrees is no longer limited to younger persons. The demographic reserve among older groups seems to be very large indeed.

Two trends can be identified. First, the decline of the young population leads to a diminishing pool of candidates for higher education. Second, changes in lifestyles and life cycles would lead to an increase in lifelong learning and in the demand for higher education of older individuals.

iii) *Changes in the structuring of higher education systems* are also to be considered with regard to the future shaping of higher education student flows. As higher education has exploded in size, it has also changed structurally. It has become increasingly differentiated and hierarchical, both within and between countries, faced more or less with financial shortages. Looking ahead, higher education is expected to be confronted with a further institutional stratification, a growing competition between institutions both within and between countries, and increasing pressure and controversy over cost and financial resources.

Pressure on institutions is greater today because of the functioning of mass higher education and the global higher education market. In such circumstances, could, in what Frank and Cook used to call a "winner-take-all" society spawned by globalization (Frank and Cook, 1995), some higher education institutions have positioned themselves at the top and there is no way to change this? Or do inter-institutional arrangements and positionings change over time? Faced with an increasing number of graduates, when hiring a young graduate, a personnel officer has to choose from a long list of candidates. Choosing the most qualified candidate with the best prospects of development implies the use of specific tests and information to increase the probability of

identifying the best. Among the relevant information, a key factor is the institutional prestige of some, very few, universities. This may explain the explosion of ranking or league tables which are global, regional or national, and which often help human resources departments to inform their decisions on hiring new recruits, and students-to-be to select their study programmes and institutions. The more prestigious an institution is, the better are its graduates' chances for employment and its pool of candidates to increase. Higher education institutions are thus, one way or another, continuously stratified hierarchically. This development is also strengthened by the social stratification of students. There is substantial evidence that demonstrates that the richer the family the more likely it is that its offspring would go to a highly selective institution (Table 6). The institutional prestige of a university and the increasing entry pressure of candidates go hand in hand. The probability of a prestigious university being faced with a shortage of entry candidates is so low that it does not deserve any serious concern. Demographic decline may thus only affect less prestigious higher education institutions.

Table 6. Proportions of college students from different family income groups attending public/private colleges/of all types in the USA (1997)

	Private colleges (in per cent)	State funded (public) colleges (in per cent)
Low income families (<\$ 20,000)	18.9	81.1
Upper income families (upper \$ 100,000 – \$ 200,000)	35.3	64.7
High income families (> \$ 200,000)	51.0	49.0

Source: McPherson and Schapiro, 1998.

A sort of self-reinforcing mechanism is at work: students want to enter the best university they can and universities want to be and/or remain at the top by recruiting both top students and staff. However, this may not be taken for granted. Since the market positioning of a higher education institution is very much dependent on its reputation to attract best talents, each higher education institution

tends to maintain and rely on that pool of candidates which proves to be most competitive.

Generating a hierarchical differentiation of higher education institutions is contrary to an egalitarian system in which all institutions have the same status. Comparisons between higher education systems show that some systems are more stratified, while others, like those of Central Europe, are more homogeneous. The question here is also one that regards inequalities of provision and prestige. Much of the evidence today suggests that accepting a high homogeneity coincides with low incentives for creativity, innovation and efficiency, while allowing for the stratification emerging from competition means rejecting any uniformity in institutional performances. From a strictly national perspective the option for a more uniform system may prove much more attractive politically. But in a global context it may prove less beneficial, mainly when considering that it may be hard to opt out of global pressures for differentiation when students, researchers and professors are offered a wider range of options for better condition of research work and salaries. Student and staff recruitment has increasingly ceased to be national, let alone local. It takes place across borders. Universities chase the best researchers and students across borders. The process is facilitated by the available communication technologies as well as by the new *lingua franca* – English – which is widely spoken across the academic and research world. A higher education system that chooses to be closed nationally and is inadequate when confronted with global academic developments may be finding itself having less students and competitive staff and isolating itself from the world around it, regardless of national demographic prospects. This may be well illustrated by flows of migration and mobility.

- iv) *Migration and mobility.* Migration and population decline in the Europe region, coupled with issues of cultural diversity, are a source of major concerns today. Sometimes they are also put in a sort of paradoxical terms. For instance, one perspective is that migration may lead to an increase of cultural diversity which may reach an unmanageable level of inter-cultural conflict. Another perspective

sees migration as the solution to demographic shortages for the further expansion of the developed world as well as to the need for poverty alleviation in those less developed countries that are faced with a demographic surplus. For some, immigration is threatening when considering the potential floods of people to developed countries bent upon exploiting their welfare systems and educational facilities.

Migration and demographic challenges bring about new policy and political dilemmas that refer to such crucial issues as regional, national, social and personal security, diversity and identity. These three issues are strongly inter-related as they generate anxieties and uncertainties which run deeply at a personal and widely at a national and community level.

Table 7. International migration flows

	International migrants (in million)	World population (in billion)	Share of international migrants in world population (in per cent)
1975	85	4.1	2.1
1985	105	4.8	2.2
1995	164	5.7	2.9
2000	175	6.0	2.9
2004	185	6.3	2.9

Source: UN population databases.

The data in Table 7 show that international migration is growing on a global scale. The EU and the USA have today almost the same immigrant population, though Europe has only recently become a destination for a growing number of international migrants. In 2001 Europe had a share of three per cent, while the USA had 3.1 per cent of international migrants in world population. Thirty-one per cent of the USA population growth in the 1990s was due to international migration and this share is growing. Almost the same is true for Europe. A shortage of skills and labour, due to ageing and decreasing population in the developed European countries, is thus associated with an increase in international migration. Canada, Australia, New Zealand and the USA see immigration as a permanent process and

institute special incentives to increase the immigration of students and a highly skilled workforce (*e.g.*, green card lotteries, special scholarship schemes, research grants, etc.). The 2000 Lisbon strategy of the EU stresses the importance of labour migration as a means of addressing labour gaps, while the 1999 Bologna Declaration emphasized the need to increase higher education and research attractiveness of Europe and extend student mobility and “brain circulation”.

Replacement or compensatory migration is more and more seen as that increase of immigration needed to maintain certain parameters of population. The implications of such policies are important for most developed European countries. Population decline is compensated, at least partially, by an increase in international migration. National student population declines in some countries are associated with an increasing number of immigrants (temporary or permanent), thus the emerging phenomenon of replacement migration. Compensatory migration diminishes demographic declines in developed countries and opens up new competitive forces in developing countries affecting student flows and participation rates in higher education.

In reviewing the data presented earlier, it is evident that the impact of demographic prospects on higher education is far from uniform across countries of the Europe region. However, certain general trends may be identified:

- i) most European countries are confronted with a demographic decline and with an ageing population that may lead to a diminishing number of young candidates to higher education;
- ii) the individual demand for higher education is likely to grow with regard to both younger and older persons;
- iii) international migration and academic mobility may also grow, affecting differentially national systems and institutions of higher education; some would be more attractive for immigrants and mobile students or staff, while others are more likely to be suppliers of migrants and academically mobile students and researchers; compensatory and replacement migration and brain circulation are

growing and bear directly on national and institutional higher education policies.

Such trends, general as they are, underline the importance of demographic factors in the analysis of higher education. However, the question that should be raised is: should demography be considered alone or in a combination of contextualized factors?

5. Consequences of an Approach

Politics aside, one may reflect on the impact of demographic prospects on higher education by adopting:

1. either *a factor-oriented approach*, which takes factors one by one as well as their interactions in order to explore their individual and aggregated impact on higher education;
2. or *a context-oriented approach*, which focuses on how various contexts are shaped by different factors at work, and how they include higher education in a specific way.

Each of the two approaches has its merits. However if demography is but one factor to be considered, the resulting approach could seem to demonstrate the need of sustaining either the further expansion of student flows, or the “status quo” of the current expansion, or indeed the holding back of student flows. The most dramatic of these variants is a third one, based on the assumption that the size of a population is decreasing to the point that the demand for higher education is necessarily declining with dramatic consequences for higher education and economic sustainability of a nation state. Such a perspective is also based on two restrictive assumptions:

- a) the spatial closing of each nation-state, its borders not allowing various individuals from moving in or out, unless in limited and controlled ways;
- b) the national embeddedness of higher education systems, *i.e.*, each higher education institution belongs to and is embedded in a national system, relying entirely and exclusively on national, including demographic, resources.

In order to better explore the implications of such assumptions, it seems important to refer to the consequences of globalization. From this perspective, the following global developments are important:

- a) *global population shifts*, which are triggered by the growing inequalities and differences between various national states and regions, and generate an increasing migration of population; this includes also student mobility across borders;
- b) *migration of higher education study programmes*, which is mostly, but not only, due to the use of information and communication technologies; programme mobility is growingly a substitute for student mobility;
- c) *study programme sharing, or joint study programmes*, allowing students to take advantage of two or more academic worlds.

6. Contextualising Demographic Prospects

When considering such global developments, it seems difficult to accept the view that demography alone would provide an appropriate platform for explaining current developments in higher education. Considering the recent expansion of higher education in most European countries as well as in other parts of the world, student flows have been growing to the level of turning most of the European higher education systems into mass or universal systems of higher education, while national population has been stagnant or declining. Higher education expansion has not been generated by any demographic shifts, but by a growing individual and economic demand for higher education qualifications. As participation rates in higher education have been growing, it remains to be seen whether this trend is sustainable in the medium and even short term, given fertility rates, national age pyramids and other demographic measures. Two reflections may provide further insights: (i) institutional policies of recruiting students and designing study programmes must be changed, and (ii) lifelong learning programmes must be opened up and expanded in order to address new types of older students, while also attracting foreign students from highly expanding population areas. While all higher education systems and

institutions may do the same and the comparability would also be increased, certain differences are bound to remain.

It is within such a context that the call for the “recognition of the difference” between various higher education systems and institutions holds a key position, when made from the perspective of growing migration, increasing student mobility and making higher education systems and institutions more comparable, as in the European Bologna Process. However, this very call brings with it not only ways and means of mutual understanding, but may also lead to new conflicts, which, beyond just social, economic and cultural aspects, are of an academic nature. The “brain drain – brain gain” discussion illustrates well such a conflict. The “recognition of difference” demands then what the Canadian philosopher Charles Taylor calls “the politics of recognition” (Taylor, 1994), so specific to our contemporary European diverse societies. However, it is this “politics of recognition” which may bring about a paradigmatic conflict line in our academic worlds: on the one hand, “particularity should be recognized and even fostered”, while on the other “the principle of equal respect requires that we treat people in a difference-blind fashion [...]”.

Such an approach bring to the fore the shaping of national and institutional academic communities. During modern times, universities have mostly been regarded as national symbols, expected to train national elites. As academic communities, they were primarily part of the wider national community and were regarded as their cultural and scientific consciousness. Such a particularity should be recognized. When expected to face demographic challenges in a globalized context, all the readily available solutions may however have side effects of denationalization or deterritorialization. This does not mean that their dislocation is envisaged. Being locally placed and even entrenched, they may rather be expected to cross national borders to recruit students and become deterritorialized demographically, just as they are forced to do by the universality of knowledge and research, and by the information and communication technologies with networks across traditional national boundaries.

The existing numerous reports, papers and books focused on the current demographic shifts, migration flows and life cycle changes have focused attention to these important issues of concern. They have highlighted developments, but also the relevant risks and uncertainties. Moreover,

literature is far from converging, with conflicting views. When referring to Europe, such conflicting views take either a “neo-Spenglerian” stand, which is as apocalyptic as previewing “the imminent collapse of the Western civilization”, or they adopt a view which takes stock of new economic, social, cultural and political interdependencies specific to today’s world. The Neo-Spenglerian views rely heavily on data illustrating increasing cross-border migration flows under conditions of demographic ageing and low fertility rates in most European countries. Their story is indeed dramatic: when more than a quarter of Americans are today from other parts of the world (Buchanan, 2002), so that America can be divided into Anglo-Protestant and Hispanic cultures, when Europe is affected by huge flows of migrants on the East-West or South-North axis (Bawer, 2006), Western civilization might be considered both sleepingly unaware of the dangers that are emerging within its borders and threatened with the spectre of decline or mere “death”.

The opposing view to this apocalyptic perspective follows an altogether different line of argument. It is focused on both historical facts and prospective developments. It does not necessarily attempt to write what the French Jacques Attali would call “une brève histoire de l’avenir” (Attali, 2006), but rather identifies continuities and discontinuities, risks and challenges, threats and dangers, as well as new constructions which differ as much from past ones as they were induced by them. To illustrate this approach one might consider mobility and migration and relate them to demographic shifts and to higher education openings within and between individual countries.

7. Globalization: Academic Mobility and Demographic Migration Reconsidered

Both mobility and migration refer to the movement of individuals. Within nation states it relates to occupational and employment mobility, *i.e.*, those population shifts induced by changes in economy and employment due to regional imbalances in the labour market or to the location and development of new production sites. When considering individual movement across national borders, mobility becomes migration and is understood in terms of flows of immigration or emigration. Within the

country, student movement, on a smaller or larger scale, is always described in terms of mobility, while between countries, particularly within the EU framework, academic mobility of students, staff or programmes is highly regarded and encouraged. Within one country, population mobility, for occupational, educational or employment reasons, is more often than not a sign of flexibility and as such is a desirable way of dealing with spatial imbalances. Between countries the terminology in use is associated with divergent values. Population mobility turns into migration flows and may also include refugees of various sorts, asylum-seekers, economic immigrants, even terrorists or just “foreign trouble-makers”, as some would put it. Academic mobility may also be seen in terms of brain drain for some – brain gain for others – if not a mere synonymous brain circulation that fits the universal values inherent to academe.

When assuming that globalization, understood in terms of increasing mobility and interdependencies due to a “despatialization of the social” (Tomlinson, 1999), the question is how appropriate this old analytical framework, with all its conceptual ambiguities and conflicting values, may prove to be. When answering such a question, the key word that needs clarification is globalization. This may be understood in terms of the nation-state paradigm. It may thus refer to those interdependencies between national societies that are externally shaped and complemented by international and transnational institutions. Globalization, from this perspective, is nothing else but a sort of growing type of inter- or transnational phenomenon, which may trouble or indeed threaten state organized national societies. There is, however, another meaning of globalization which refers to that specific reality that transcends the existence of nation states. This new meaning of globalization would also be related to territoriality and society, but separated from existing national borders. Under the pressure of globalization, the moulding of the social is despatialized, just as the space is desocialized from the national containers. As Beck put it, “a territorially fixed image of the social, which for two centuries has captivated and inspired the political, cultural and scientific imagination, is in the course of breaking up.” (Beck, 2005). The name of this “process of breaking up” is globalization. It thus appears as a new reality and not as a by-product of international relations.

When looking at recent developments in economy, politics, culture and education, such a reality tends to become obvious. Within higher education, national higher education systems have opted since 1999 to create, through the Bologna Process, a European Higher Education Area which is not meant to add a new European dimension to the already existing national dimension, but rather to “deterritorialize” higher education institutions so as to make them “European players” in an enlarged globally relevant territory. To this one may add the mushrooming of transnational higher education institutions (Wilson and Vlăsceanu, 2000), which are transnational in the sense that they may or may not belong to any national system, *i.e.*, they are deterritorialized.

Many universities in Europe aspire to escape from their national boundaries by becoming and thus being recognized as firstly European and then global players.¹ Territorial difference is shaped and lived as academic similarity, while academic proximity chooses remote territories and borders. The European Higher Education Area shrinks distances by merging into a single academic space institutions that are spread across vast territories, while in the same institution students and staff may learn and study as if operating in far remote places. Global and local are merged in what B. Barber called “glocal” (Barber, 1995).

The national and global paradigms, when distinguished and accepted, may lead to different approaches to the impact of demographic shifts and migration flows on higher education. For some, domestic demographic decline is compensated by the inflow of migrants and mobile students and staff, while for others this is aggravated by the outflow of workers, students and academics. Such trends may be regarded as a sign of the emerging transnational space of higher education where the impact of demography is deterritorialized and denationalized thus being seen within the context of globalization. However, such a stand may be challenged by the nation

¹ There has been a surprise to many the oftenly invoked league tables proposed by a Chinese university (see SADLAK, J. and Liu, CAI, L. N. (eds). (2007). *The World-Class University and Ranking: Aiming Beyond Status*. Bucharest: UNESCO-CEPES). This has triggered out the debate about “the world-class university” at the same time with the emerging European Higher Education Area.

states, which would strongly defend their historical identity. A paradigmatic conflict, related to the “politics of recognition”, is thus at work, and higher education seems to be one of the battlegrounds of globalization.

8. Higher Education Institutions at a Crossroads

Demographic declines, increased migration flows and life cycle changes compensate each other, and these compensatory mechanisms operate both nationally, regionally and globally. If this is the case, higher education systems and institutions are differently affected by demographic declines when considering the impact of migration and life cycle changes. However, there are also other factors at work, such as public expenditure and private investments in higher education, labour market developments, staff recruitment and retention, types of study programme design and implementation, which may differentiate further.

The key idea is that the type and content of higher education could also influence demography. Though in many European countries there is a need to improve fertility rates, slow down brain-drain or influence migration flows, it would be erroneous to assume that tangible changes in these areas would be possible in the absence of significant structural changes in the economy or without accompanying cultural transformations. Moreover, upgrading and improving higher education is the key ingredient that may trigger and promote such changes today. Higher education institutions may induce long term changes in the desired directions only when their curricula and the quality of their academic staff, their equity and openness are based on new approaches.

There is no “one-fits-all” solution for higher education institutions, since they are only differentially influenced by various factors at work. When designing institutional policies that take account of demographic prospects and their contexts, issues such as the following may be considered:

- 1) *Quality in higher education.* Since the emergence of the “quality assurance movement” in higher education in the mid-1990s, the issue of quality has grown in importance, and global, regional, national or institutional policies have been widely promoted. Diversity of

approaches has been complemented by converging and even unifying principles and values. Quality assurance and quality evaluation have been also complemented by the growing movement of university rankings at national, regional and global levels. What results from such developments is not only an increased confidence in the quality of higher education provision, but also a growing range of hierarchical classifications of higher education institutions, particularly of universities. The former is mostly related to the institutional diversification and multiplication of higher education supply. The latter has more to do with the processes of academic competitiveness between various institutions within and between market segments. However, both approaches may lead to a differentiation of universities on the quality scale. Some, very few, have already positioned themselves at the top and struggle to consolidate their positioning, while many others are confronted with the spectrum of constant re-positioning on the higher education market and indeed with that of survival in the context of demographic decline. Mention was made previously of the dynamics of higher education demand in view of changes in the size of age cohorts and in life cycles. Considering all this, it seems reasonable to assume that when the quality and the prestige of a higher education institution are higher, the impact of the national demographic decline is lower or negligible. However, there are two important extensions of this "rule". One is of a global type and refers to the working of the higher education global market. It is within such a global context that the current *lingua franca* of the academic world, together with the historically shaped prestige of certain universities, brings about an important competitive advantage. The other extension is represented by the already established academic networks which facilitated a traditional academic mobility of students and staff. Such networks could provide good opportunities for their individual members to better cope with a shrinking demand for higher education. When in a nation state neither international networking nor global institutions exist, the system may be faced with strong challenges. State interventions may diminish some negative effects, but the migration of the best talents may not be prevented on a large scale. What is

likely to emerge is clearly not the result of a simple extrapolation from present structures. Quality and prestige would play a key role in the highly differentiated global market of higher education.

- 2) *Diversification of the higher education institutional landscape.* There may be a wide diversification of institutional missions in order to respond to a strong differentiation of individual demands for higher education. Student populations are going to be more diversified in terms of age, culture, ethnicity, learning and professional experience. As individualization is growing, so is the demand for higher education, albeit in a diversifying way. Academic positions as well as academic staff recruitment and retention are also diversified and based on a sort of “contractual individualization” that differentiates between jobs and salaries. To respond to a diversifying demand and student population, a wide diversification of study programmes and teaching/learning provisions is expected. The traditional vertical diversification of programmes on the graduate – postgraduate axis is more and more complemented by a horizontal one for addressing a larger variety of student population.
- 3) *New governing and marketing structures and strategies for coping with increasing competition.* No higher education institution may adequately cope with the market developments unless it promotes flexible governing structures and active marketing strategies. Transformation is the word of the day.

Considering such institutional policy options and probably others to be explored, a key conclusion can be drawn: faced as they are with new challenges, including those induced by current demographic prospects and globalization, European higher education institutions should implement a wide range of changes, covering almost all their traditional structures and strategies. This is all the more important in the context of the newly emerging type of post-industrial, knowledge-based and culturally diverse society in which higher education holds a key position.

Demographic prospects speak about the future and how it may affect, or be affected by, higher education. In dealing with the future, higher education may be approached from at least two perspectives. One approach is based on the assumption that much of what is to come in higher

education will follow the route of “more of the same”. If this is the case, the future of higher education does not seem to be a problem and is not an issue since the past has already disclosed the future and it is only for the present to help reading what has been disclosed. The other approach may question this progressive line, thus bringing in a wide range of controversies. They are induced by the fact that the old idea of progress seems to be losing its attractiveness.

The challenges of today’s universities are multiplying on such a scale that the alternative futures are both pertinent and to-be-questioned. But how much is the future shaped today by the past? One may illustrate an answer to such a question by referring to one of the consequences of the much debated Shanghai ranking (Sadlak and Cai, 2007). Following its publication, some European governments, for example the Russian Federation and Germany, and some governments from Asia, such as China, Pakistan, Thailand, Singapore and South Korea, decided to subsidize the establishment of those elite universities which are to be globally competitive. The envisaged end result is a sort of a multiplied “Harvard University”. How this is going to happen remains to be seen. For at least two reasons, we are today more and more fascinated by and interested in predicting the future. One reason is that the idea of progress, launched by the Enlightenment and well preserved ever since, lost most of its attraction and stopped being the measure for everything that is to be in the future. The other reason is more problematic. It stems from the fact that the past is losing its power of determining the present and the future. Distancing ourselves from the past is becoming more important than following on from its achievements. The future, fictitious and non-existent as it is, is more attractive in stimulating the imagination and its corresponding actions. Demographic projections, loaded by numbers and based on countless calculations and scenarios, provide opportunities for evaluating future higher education policies and for comparing them with past achievements and experiences. How reliable demographic projections based on so many assumptions are, is a question that begs for the contextualization of challenges. Changes in higher education are necessary, but basing them on the impact of a single factor may prove to be less acceptable. Higher education is expected again to invent its future even in the contexts of dramatic demographic declines.

References

- ATTALI, J. 2006. *Une brève histoire de l'avenir*. Paris: Fayard.
- BARBER, B. 1995. *Jihad vs. McWorld*. New York: Ballantine Books.
- , 2006. *While Europe Slept: How Radical Islam Is Destroying the West from Within*. New York: Doubleday.
- BECK, U. 2005. *Power in the Global Age*. Cambridge, Polity Press.
- BUCHANAN, P. 2002. *The Death of the West. How Dying Populations and Immigrant Invasions Imperil Our Country and Civilization*. New York: St. Martin's Press.
- FRANK, R. and COOK, P. 1995. *The Winner-Take-All Society*. New York: Free Press.
- HUNTINGTON, S. 2005. *Who Are We?* New York: Free Press.
- INGLEHART, R. 1997. *Modernization and Postmodernization. Cultural, Economic, and Political Change in 43 Societies*. Princeton: PUP.
- KLEMENCIC, M. and FRIED, J. 2007. Demographic Challenges and Future of the Higher Education. *International Higher Education*, 47, pp. 12-14.
- McPHERSON, M. S. and SCHAPIRO, M. O. 1998. *An Overview of Trends and Patterns in Participation and Financing in US Higher Education*. Paris: OECD.
- ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD). 2006, 2007. *Education at a Glance 2006, 2007. OECD Indicators*. Paris: OECD.
- SADLAK, J. and CAI, L. N. (eds). 2007. *The World-Class University and Ranking: Aiming Beyond Status*. Bucharest and Cluj-Napoca: UNESCO-CEPES and Presa Universitară Clujeană.
- SPENGLER, O. 1926 (1918). *The Decline of the West*. Oxford: OUP.
- TAYLOR, CH. 1994. *Multiculturalism. Examining the Politics of Recognition*, Princeton: PUP. pp. 25-73.
- TOMLINSON, J. 1999. *Globalization and Culture*. Cambridge: Polity Press.
- TROW, M. 1973. *Problems in the Transition from Elite to Mass Higher Education*. Berkeley CA: Carnegie Commission on Higher Education.
- UN. 2007. *World Population Ageing – 2007*. New York: UN.

- WILSON, L. and VLĂSCEANU, L. 2000. Transnational Education and Recognition of Qualifications. In: L. C. Barrows (ed.), *Internationalization of Higher Education: An Institutional Perspective*. Bucharest: UNESCO-CEPES.
- WOLF, A. 2002. *Does Education Matter? Myths about Education and Economic Growth*. London: Penguin Books, p. 273.

Migration and Multiculturalism

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This text is to be considered an annotated *checklist* of problem zones in the relevant discourse. It is also an attempt to concentrate on the middle level, *i.e.*, the *institutions*, between the individual and the system. It is the institution, in which the two levels of any societal life meet: the normative level of the system provides legislation and most of the basic funding, but moreover advertising and selling much of the production of higher education. Furthermore, most of the authorizing and licensing regulations by the state occur on system level, as do the crucial admission rules, which link higher education to the entire education sector, and increasingly, to lifelong learning. The system also decides upon immigration laws, visa policies, and definitions of international students and – in many cases – upon outgoing or incoming student flows, regulated by financial and political incentives or hindrances. The institution as part of the life-world is the place where the *habitus* meets the re-allocation of capitals by students, graduates and staff. It is the place where the disciplinary cultures add to the inherited and acquired cultural assets students bring or are missing; it is also important to accept that the institutions are autonomous in a sense that they *modify* the general attitudes of society to strangers, foreigners, migrants and mobile clientele. The way by which this modification occurs can have a direct impact on the political and social response to migrants by the larger society, in some cases minority policies or changes in the overall perception of a certain group of immigrants happen through student mobility or larger academic migration on all levels (cf. the west coast of the United States).

Both migration and demography are highly sensitive and politically they dwell on volatile grounds. To link them adds to the sensitivity and the danger to touch trigger-points of necessary political incorrectness. Universities are required to extend their receptivity to challenges and ambiguities in this context: populists, ideologues, xenophobic hardliners, employ-for-revenue industrialists and nationalists of all kind are active, mainly outside the institution. Demography has often served the scholarly

institutions to demonstrate their susceptibility to nationalist propaganda (cf. The Serbian Academy of Sciences in the case of Albanians before the World War and again later). It is also a turf for all kinds of speculations and scenarios, which, as a rule, do not give enough attention to potential political changes of a large scale, such as the sudden export of many students by China or natural disasters and wars, constituting the author's criticism of well-intended extrapolations such as the most recent statistics and forecast of the Organisation for Economic Cooperation and Development (OECD), which is perfectly consistent and plausible from the view point of OECD countries and out of their interest that they maintain the status they are holding at present. But they underestimate the effects of changes in any other interacting mega-system, which will have immediate effects on all other players in the game. Demography and migration do not correlate on easy formulae, but they certainly do; if we triangulate by including *higher education* as the third dimension, we gain a rather complex and puzzling picture. I shall not try to reduce complexity all too readily, because we should keep the ruptures and wounds open so as to better understand what is going on. By concentrating on the institutions of higher education, the peculiarities and significant aspects of this sector shall be demonstrated with no extended regard to other institutions and the labour market. But of course, these have an impact on higher education. All this has a cultural connotation. Caution is of importance not to expand the topic too excessively and enter on a broad scale into the "clash of civilisations" and its antagonisms and ramifications. But a different view from Huntington's well debated assumptions is urgently needed in our field, especially when education becomes an object of globalisation totalitarians, the General Agreement on Trade in Services (WTO) propagators.

In the following the author will attempt to combine elements from diverse theories, which will demonstrate some of the subtexts and complexities, usually ignored in many of the present debates (Gebova, 2007)¹. However, one hypothesis could be that the academic *habitus* and its

¹ In her yet unpublished master-thesis on Bulgarian brain circulation, Boriana Gebova, investigates early research approaches on returnees in higher education, and finds that this field has been elaborated in the 1970s extensively.

representations in the social circumstances of academic migrants may be stronger than the 'normal' attitudes towards foreigners or strangers from any background. Thus, the institutions of higher education gain an active role in the remodelling of interaction among a constituency, which is no longer, or not in all dimensions, labelled as strangers or foreigners.

One last aspect should be mentioned, for systematic and practical reasons. As human beings, migrants or mobile students and staff, as you will, have bodies. Their physical being plays an important role. The body being transferred from one place to the other may profit or suffer from such change. This is, of course, true for every traveller and for each movement. But the transplantation of a body into a new environment for a non-trivial period of time is another thing. Migrants' depressions or the traumatised recollection of their past haunts them; but the arrival at the new, desired place may also activate yet unknown energies and capacities. Changes in taste and available nutrition will alter attitudes, etc. Though well known, it is doubtful that these obvious aspects play a role in our policies of dealing with migrant members of the academic community. Despite the fact that in no other field the effects of reciprocity in communication may be so critical for successful or failed conviviality.

I. For many years, migration was not a theme in higher education research, nor was demography or climate change. Only when a problem appears, and if it is perceived as such, analyses are being asked for by politicians, and the horizon of a discipline is widening. Very rarely, the anticipatory craft of research is bypassing the quest for the solution of identified problems. In the case of our topic, the imperatives of policy and the rapid changes of other parameters in the field have delayed both research and problem identification. The imperatives after 1989 were the unification of Europe and mobility. Some understandable, however fatal errors occurred: internationalisation was understood as a step towards globalisation; mobility should create exchange and thus implicate integration and multiculturalism; large areas of the world and their foreseeable development were ignored, among them China, India and the enormous drain from countries like Bulgaria or Poland. Most fatal was the ignorance towards the losers in a game called brain drain and gain. No real circulation was envisaged by a sustainable policy. And for a long time, wanted mobility and involuntary migration were treated as disconnected

matters, supervised by different commissioners and national agencies. Three wake-up calls have brought us to the standards of today's discussion: The Balkan wars of 1991-1999, the attacks of September 11, 2001 and thereafter, and the claim of China, India and Brazil to become new global players on a very large scale. There were more such incentives to deal with the issue, but the three calls have had an immediate and strong impact on the discourse, and they called for a confrontation with security issues and with demographics likewise.

Some unrelated accounts to reality include the following:

- The German philosopher Odo Marquard said: *all education is migration*.² Education is the anticipation of change. The association of educational development – *socialisation* – is *andante*: walking, lifelong walking. Changing places, changing ideas, changing positions in the social field: these are associations we can allow to resurface from our subconscious. The desire for change can be a sad consequence from an unbearable reality, from a miserable life, from political persecution, but also from an unhappy love affair or simple boredom. There may be good reasons for migration or the decision to stay: both imply freedom of choice.
- In a recent debate about the properties of European higher education, a high ranking peer of the European Union uttered his regret that the *nomadic* freedom of academic staff and students has come to be determined by the specific mixture of social and cultural capitals one possesses, beside money and other assets. Between political entities, across borders, you may be forced to move by many reasons, and often it is difficult to decide honestly, which one is the cause for voluntary mobility and which one creates simply unwanted, enforced migration or moves. Humans are not only unstable and eccentric beings, but also driven by curiosity, poverty, force, adventurism, homesickness, by seeking a new start or in search of obliviousness. Economically, they are driven by market-forces.

² In a keynote on the unavoidability (!) of humanities in the spectrum of academic disciplines (West-German Rectors Conference Annual Meeting 1985).

Psychology can only explain partially why certain motives become dominant and others less. We need a clear look into the power structures which drive individuals and groups. This is true for the real nomads and for the idealised symbolic ones.

- Whether being a traveller with all privileges to choose the right place at the right time or belonging to the travelling people, being driven from place to place, without the freedom of choice, makes all the difference: within a certain social space, moves from one position to the other; the social space, in our context, is not congruent with national borders. However, these political borders determine much of the ability of the traveller, whether he or she will have difficulties to reach the next destination. The management of migration is not only an agenda for the state and related organisations of civil society, but also for the actors, the migrants themselves, and their social environment.
- In the headhunt for excellent scientists, continental Europe is lucky to welcome some returns by top scholars as serendipity: they come back due to renewed academic freedom and personal liberties, perceived as endangered after homeland security policies in the USA. Others prefer less freedom as long as their working position or status is significantly better than in their system of origin. There is also some migration after retirement from countries, where retired scientists find no longer well-paid employment within higher education and science systems. The demographic “tsunami” is a strong factor in this respect (Mencarini et al., in this book).

II. When talking about nomads, travelling people or migrants, we are addressing a general human condition. It is neither the evolutionary destiny of our human species to stay at one place nor to move all the time; it is not decided whether a permanent and immobile resident has more stakes in being home than a cosmopolitan nomad, who makes home wherever he or she might stay over night. All this adds to what we call culture. Our civilisation has more than one dimension which is formed by the cultures of migration, by the dialectic of staying or leaving, of being at home or being a stranger. The translation of this dialectic into a push-pull-scheme shows, how rough and little differentiated the binary model is (Agarwal, 2007, p.

119). Nevertheless, we need the parameters of comparative higher education research in order to be able to deconstruct the discourse of mobility.

As this UNESCO-CEPES project demands a concentration on higher education, and on the *institutional* perspective, some questions on the human condition arise: Why do people leave their home in order to attend a university far away? Why do people give up well paid positions in order to take the risks of a lousy job at a less reputed institution? And what can institutions do in order to cope with the problem? The history of academic mobility is a success story, in spite of failures, disappointed expectations, broken families and dead ends. The same is true for academic migration, only on a larger scale and with far-reaching consequences. We have known about the limited number of options in migration processes for a long time, but, as earlier mentioned, the implications had not been part of serious and impactful predictions or scenarios (cf. Gebova, 2007; Bovenkerk, 1974, p. 5).

All these questions refer to more than one culture: the culture of departure and the culture of arrival. They refer to lifestyles, to complex games of gains and losses for institutions, individuals, social groups and entire societies. What we call brain circulation is also a cultural field of immense dimensions and with a lot of contingencies. A person applies for a certain programme at one university, is not admitted and migrates to the next best place, which is half a continent away from the place of his or her first choice. If admitted, his or her life would have developed differently or not, who knows?

How can an institution address cultural differences among its members and in order to provide what we call a multicultural environment or structure? The comprehensive overview by Miclea (2008, in this book) leaves an ambiguous reflexion. On the level of institutional conditions, it gives a most impressive completeness of parameters and criteria, and provides many options on the psychological and organisational level. However, where Miclea refers to the strategic option, he implicitly recommends a model of governance, which calls for some reflection: his model would prefer a purely demand-oriented service-policy by the institution. If universities only offer what people want or expect from them, this might be a noble abstention from ivory-tower supply, or sheer populism. Miclea did not imply this, but a risk might be that the students

and researchers serve by meeting expectations without even trying to transform both needs and expectations. Which then might pose the trap of an authoritarian populism (as propagated by the former Brazilian Minister Cristovam Buarque) or a mere vocational/professional training mill following the employment market. I am dealing with Miclea so intensely, because he, of course, has a completely different and positive intention for institutional reform, which, however, easily becomes a playground for the system level and its policies. Such institutions can become prime “pull-attractors to migrants with unclear academic aspirations – and to students with lower quality aspirations, who enrol in private universities (Suciu, 2008, in this book). Miclea is, on the other side, very right in his warning of a new, ‘digitalised’ generation – *also as migrants* – who will expect or miss a corresponding digital interface instead of traditional communication.

There is a catalogue of good practices, which most international offices are familiar with. Things become more complex, when facing the question if the different cultural backgrounds can be described by the labels *foreign, strange or alien*. Is a foreign student a stranger by legal definition, by common sense assumptions, by prejudice...? The ex-ante attribution of the stigma to be foreign/strange/alien makes it more difficult to trust in the integrative forces of the academic habitus and its ability to gain in impact to the system’s environment – *i.e.*, society. The habitus itself is not disconnected from society; it works as leverage for changing positions in the social space. How do we know, and what are the criteria of inclusion and exclusion? All answers to these questions lead into the heart of society and transcend the daily routines of universities. Everybody will at once understand the problem, but most faculty and administrators will simply lack the time to cope with underlying problems. The “international student” is a construct; it made of many ingredients, many of them hardly compatible, not least by many ingredients of national identity and prejudice. If universities make their own “policy”, this might well lead to national unrest.

Multiculturalism needs a recall of some basic assumptions, which, for the sake of clarity, are certainly exaggerations:

- All academic migration follows the motives of the 4 ‘P’s: Payment – Pleasure – Prestige – Politics.

- *Payment* includes all monetary and other material earnings for work done, including health insurance, pension plans, the quality of contract, etc. or, in the case of students, all social benefits and means for subsistence and social protection, grants, stipends, loans and charitable donations play a role as do the contributions and material support by parents and other relatives.
- *Pleasure* indicates the working or study conditions, it includes real pleasure and emotional attachment to certain field, teacher or study group, but also fringe benefits from child care to cultural supply from cinema to gastronomy. Most important for pleasure is the texture of social contacts, from general working climate to the most intimate contacts, conditions for socialising and leisure (one can immediately feel the cultural tension in this list).
- *Prestige* is, in this context, the easiest and by far best investigated category. The reputations of a discipline, of an institution, of academic teachers or the relation with admission procedures are indicators for this. We should take care to differentiate prestige under two dimensions: do we speak of research institutions only, *i.e.*, the science system, or do we refer to the system of higher education, where prestige is ambiguously split into research, study, degree and other values.
- *Politics* indicates the most difficult among the 4 'P's; in many cases, people escape political narrowness and oppression in one system in the hope to find more freedom and tolerance or acceptance in others. There are cases, when a deteriorated political environment is being accepted just for an improved mix of prestige and payment. Before we judge the moral dimension of a migration for political reasons, we should have a look into the nearer social environment of the persons or the group, *i.e.*, family ties, tribal allegiance, religious inclusion or minority status, etc.
- All academic migration follows the demand for re-arranging the mix of symbolic capitals (social and cultural) with economic interests in order to stabilise or improve a position within the social space.

Migration to another system can implicate the wish to compensate for a deficient inherited cultural capital, or it can mean

simply the expectation that another institution will increase social capital and pleasure. A combination of decisions oriented both towards capitals and the 4 'P's is the rule.

- The tension grows between wanted mobility and all other kinds of migration.

This is, of course, the main concern of the previous considerations. The tension between the two spheres is the opening for the deconstruction of the international student and staff. We shall come to rather significant causes for migration, but let us keep in mind that two extreme poles should not be forgotten: There are many people who lose all attachment with employment at academic institutions. This is one of the main concerns for a large number of returnees from host countries after wars and conflict periods (Afghanistan, Kosovo, etc.). And there are many persons, especially younger ones, who gain a potential participation in higher education only through migration, though this was not the primary reason for the decision to migrate.

III. International academic migration and mobility may or may not face difficulties from two primary barriers: *language* and *immigration regulations*. Mostly, both coincide where unwanted migration occurs, thus worsening the situation for students or scientists. Both impediments are also signs of cultural ruptures and of incomplete supra-national regulations. It is the author's belief that religious barriers are often, if not always, overrated. In any case, they shall be summoned under the political P.

Where neither of the two barriers exists, we have the easy win-win situation: three scientists have been awarded the Nobel Prize for Medicine in 2007: one British citizen, two Americans, one of English origin, one born in Italy, all three working at USA universities. If the above mentioned criteria are applicable, at least partially, we can conclude that the USA provides a better 4 'P'-mix and sufficient symbolic capitals as to justify migration and a change of citizenship. Language is neither a problem for the born Italian or, of course, for the two Englishmen. The science system with its *disciplinary culture* dominates obviously all other objective criteria of successful or failing conditions of scientists working in the same field. But the *disciplinary culture* is only one aspect among cultural dimensions. If the

language barrier is significant, this means already one beginning of multiculturalism or of disadvantage. If it is of such importance that it hinders the acquisition of a visa and immigration papers, it is a cultural wall. The disciplinary culture in research may be easier to acquire than the *disciplinary culture of teaching and studying*. Generally speaking we must ask whether the academic *habitus*, the *homo academicus* or *academica*, is the same in all institutions which we summon under higher education or the term university, or whether the overarching cultures of the respective society have, in the end, a much stronger effect on the individual.

It is this question which will dominate the discourse on academic migration for the next decades. If we look at multiculturalism, we should first investigate whether the academic culture or the environment, *i.e.*, the society, extends a stronger effect on the individual and how the two dimensions mix in a concrete case; *in each concrete case and for entire groups of students*.

Take the example of Chinese students in Germany. At some universities, a large number of students from China are clustering in a few programmes. They live together in a kind of enclave and are not taken well care of by any integrative policies from the side of the university or the city. In other cases, Chinese students are the paradigm of well integrating and integrated foreign students and a showcase of successful mobility. I am taking this example because China freely admits that for all too long it has been organising its higher education in a homogeneity³ which did not allow too much development of differentiated personalities. A very foreign and even strange culture meets the German undergraduate system, where not too much care is offered for students regarding their personal and social wellbeing. The two poles of possible exchange careers show how horizontal multiculturalism can work.

Often, the term multiculturalism is a substitute for multi-ethnic composition of a social group, students or staff. In this case we must ask, whether this ethnic group has a corresponding environment in the host society. When Balkan refugees enrolled at German universities, they found

³ Jianxing Zhang, a prominent researcher in higher education, at the Forum China-Europe, 4-5 October 2007, Brussels, Workshop 14.

a certain quantity of compatriots – both refugees and long-term residents, and with them came many family members and other refugees with no aspirations to study. Turks in Germany are mainly Turks with Turkish family background or Turks who insist to be recognised as Turkish rather than German. *Multi-ethnicity is the migratory equivalent to internationalisation in mobility programmes.* Mobility programmes have a clear multicultural inclination, while multi-ethnicity may or may not have this effect. In some cases, you have a clear ethno-pluralist concept, term that is used as a definitive pejorative. The *migratory background* is an official German terminology for persons notwithstanding their status, behaviour and attitudes. The status of citizen and the status of international students, projected on mandatory payment of tuition fees, are diverging in the UK. With some sarcasm, one might wonder whether in many countries *ius soli* and *ius sanguinis* will be completed by a *jus phaenotypi*, such as the United States statistics demonstrate. In many cases, this is linked to the fact that ethnic groups are automatically summoned under the *minority* status. I will not go into the details of the question, whether a member of a *relatively* privileged “class” (student, researcher, academic teacher; *modo* Bourdieu) should be labelled as minority. But stigmatised with an ethnic label and burdened with financial and social problems, an academic migrant may be confronted at the institution of arrival with all the inconvenience reserved for both, minorities and excluded groups.

This is more important than we may assume from the well-meaning approaches to multicultural encounters. Very often, students of one ethnic background remain within their own cultural environment (*milieu*) or even separate from other groups. This can follow along lines of citizenship, or a national concept in a very original – and distorted – mode; or it follows the lines of spoken languages, which would enlarge the respective groups and isolate outsiders even more. However, the ethnic discourse shall not be addressed in detail here.

Let us look at the earlier confrontation between the academic culture and the larger environment, the society or the segment of society, which surrounds the institution. The university may be integrated in an urban environment, or it may be an isolated campus. Then, the environment may be determined by the media rather than the social life. If there are no media in the language of a student group, the internet may gain in importance as it

does by offering lifelines to the original community, or home. What is true for students, does also apply for faculty and staff.

So far, different possible ways to approach the theme have been shown. The following discussion shall concentrate on the original topic, the relation between migration and academic multiculturalism.

IV. A systematic, though necessarily incomplete, overview of the possible groups is not trivial. Of course, the real motives and true pull- and push-factors of all students and researchers and academic teachers who migrate from one system to the other cannot be described, which means in most cases from one country to the other. But we should be aware that each motive or bundle of motives can correlated with the 4 'P's and, analytically, with the shifts within the mix of capitals. Varieties in the academic *habitus* play a role, but even more important are the influences of external circumstances on each of the 'P's. The inclusiveness or exclusiveness of the respective host-culture and the power of the cultural residuum brought with the individual migrant or his/her group are important factors. And speaking of this import of culture, it is appropriate to assume that all culture brought into another is residual or deficient, if the migration is based on unwanted forces.

All migration tends towards improving the situation of the migrant and his or her social group. This group may come with him or her, or stay behind, either deliberately or involuntarily. Within the European Union and a set of privileged partners in academic mobility, the voluntary and quasi natural constellations prevail. But when the economic or the political reasons for changing systems are too strong, academic migration may be a way of no return from the very first moment. The cultural environment of the host institution may have strong inclusive powers, especially if it has a specific quality compared to the surrounding society. In this case, the migrants can gain inclusion by just adapting to the dominating habitus. But if social prejudice, a lack of understanding and awareness, or cultural antagonisms in a society overarch the academic habitus, the migrant may be easily caught in what is erroneously called a counter-culture or even counter-society. Never was this issue discussed more heatedly than after September 11, 2001, when the study career of Mohammed Ata, one of the suicide pilots was revealed. Culture is not only an active quality, expressed by what a person does, but certainly one of the perception by others: was

this student in any way strange besides being an obvious foreigner? Did he behave in ways that raised suspicions? This example is cited because it raises the problem of large groups of migrants with one significant quality. In our case this quality is the Muslim faith, which determines the group stronger than citizenship. What this means we may observe in the UK, where Muslims who are British citizens have come under scrutiny and suspicion. All kinds of labelling, exclusion mechanism, but also irrational solidarities can modify the reaction to certain cultural groups. The reaction to a particular cultural label can create a secondary multiculturalism which is different from the normal way, by which cultural differences are being horizontally coped with on campus or between town and gown. The cultural clashes can interfere with the original plan to improve life by moving to another academic system.

This is, of course, the negative scenario for multicultural academic environments. It seems necessary to analyse why and when another “culture” can be perceived, and in which cases it does not play a role. The assumption here is that the cultural differences do not play a substantial role if the disciplinary culture and the institutional *habitus* are sufficiently inclusive as to bridge other differences.

We are entering an age of irreversibly increasing migratory movements, which should not be branded by the old, conservative or xenophobic terms *flood* or *invasion*, though populist national policies tend to revive such rhetoric, and there are at least four reasons to make them meaningful and positive:

- The Climate change will reduce large areas of arable land and habitat;
- Demographic developments will redistribute the drains and gains in population: the trend will, however, not go to the conquest of void or lowly populated areas, but of densely inhabited and wealthy regions;
- The interface between voluntary and forced migration will continue to be blurred;
- Despite backlashes and regional bulwark mentalities, the means and costs of transportation will allow faster and larger masses to change places.

The combination of the four causes may create different patterns. All of them have in common that they will have immediate effects on the host country's population but not necessarily on higher education. It is more likely that primary and secondary school systems of these countries will be affected. If the deferred gratification of the better life for the second generation, if not already the first, will be disappointed, the decline of demand for higher education may be accelerated. Education and social protection are the hinges of the consequences from this consideration. The human right to move freely must not be reduced in a cynical way and apply only to those elites, who are free to choose *prestige zones*, where they will find a *civilisation of prestige* (Cremonini and Westerheijden, 2008, in this book).

An additional condition for higher education and research is that these systems are likely to be far ahead of the economy, when it comes to globalisation and supra-national coordination. This implicates that mobility concepts, based on internationalisation, are outdated or even counter-productive. For multiculturalism, the consequences could not be more significant: academic multiculturalism will shift the attention from the integration of foreign students and staff to the *integrity* of the institution, which by itself should develop more than one culture under its roof.

In other words: the task is no longer that the social environment of the higher education system must take care of the clashes of civilisations and cultural imbalances. The institutional perspective itself is that it has to open up and thus change, *i.e.*, if there are no foreigners in the academic systems, there will be an ideal-typical corridor of normality in cultures which can be absorbed by the rules and patterns of the institutional life-world. The imperatives, values, regulations, etc. of the institution will increasingly compete with other life-worlds outside campus and research venue. For example, this is a typical town-and-gown conflict, where the groups of affected collectives are slightly different inside and outside the university (*e.g.*, solidarity effects among all Muslim students, while only one group of migrants from one country or region is being challenged outside the university; religious or ideological rifts; gender related differences, etc.). On this level, the horizontal competition among lifestyles is a challenge for the cultural diversity on campus and vis-à-vis the environment, if tolerance or value-based cultural encouragement are differently arranged. The other

relationship is with the system of society itself, with the legal and other overarching normative structures, which promote or disadvantage certain cultural expressions. This is where visa-policies, immigration laws, foreign policy considerations and other external factors play a role.

This means for all institutions the loss of national or monocultural constituency. The traditional systemic ranking of cultural preferences has already come to an end. For a long time, my metaphor about preferences is the calculation of price in medieval paintings, which included also the expenditures for different colours, and, of course, gold, was most precious. In countries, where high tuition fees for foreigners are both an attractor and an incentive, the cultural mix will be bigger, though the intra-cultural conflicts will be only hidden by a certain class-related homogeneity.

Instead, the normative and pragmatic rules of the institution will create a certain normal space for the deployment of cultural particularities. The rules are all based on the two principles of freedom and autonomy. In an old-fashioned expression, *academic citizenship* should be redefined as the framework within which cultural diversity is possible and wanted; academic citizenship shall not only cease to serve a class or a nation or an abstract ideal of the search for truth and innovation. Instead, it gives the right to freely communicate, learn and investigate, and to shape one's lifestyle under the imperative of the *habitus*, which has to undergo some changes. This is only possible, if the institution is so autonomous that it does not fall under constraints alien to its integrity and mission. Of course, the academic multiculturalism is no new ivory tower, because it is permanently challenged by the 'cultural clashes' inside and outside the institution. The academic sphere is not replacing the field of cultural controversy, it just adds one institutional component to it, though an important one.

The term *academic integrity* has been mentioned earlier. This was the title of a rather encouraging conference held in Bologna in 2007⁴. Integrity does not only mean good practice and all prevention of academic malpractice. The integral complexion of our institutions is also the result of the permanent process of creating a space for individual freedom and for the

⁴ Observatory of the Magna Charta... Integrity ... Annual Conference, 20 September 2007, Bologna. Cf. www.magna-charta.org.

utilisation of the liberties, which the university provides together with its duties and norms. But, left it at that, we shall deliver the individuals – the strangers, foreigners and aliens – to the abstract freedom, which is a characteristic of the ambiguous letting free or setting free the individual in modern society. Only if the universities accept the institutional freedom as ground for their autonomy, the change in attitudes may succeed. In order to attain this, they should complete their development from agents to agencies. (Too long have they served as agents of a nation or a class or an ideology). Built on trust and credibility, higher education can act as preventive diplomacy for the sake of all academic migrants who need the integrity of those institutions, where they seek the improvement of their circumstances and aspiration. Academic integrity is the condition for multiculturalism.

The effect of multicultural institutions will be *cosmopolitism*.

References

- AGARWAL, P., SAID, M., SEHOOLE, M., SIROZI, M. and DE WIT, H. 2007. The Dynamics of International Student Circulation in a Global Context. In: P. G. Altbach and McGill-Peterson, P. (eds), *Higher Education in the New Century: Global Challenges and Innovative Ideas*. Rotterdam: Sense Publishers.
- BAUBÖCK, R. 2005. *Citizenship Policies: International, State, Migrant and Democratic Perspectives*. Geneva: Global Commission on International Migration (GCIM).
- BAUMGARTL, B., FRIED, J. and GLASS, A. (eds). 2007. *From Here to There: Mileposts of European Higher Education*. Vienna: Navreme.
- BHANDARI, R., and KOH, H.-K. 2007. International Students in the United States: The Current Picture. *International Higher Education*, 47, pp. 9-11.
- BOMMERS, M., HOESCH, K., HUNGER, U., AND KOLB, H. (eds). 2004. *Organisational Recruitment and Patterns of Migrations. Interdependencies in an Integrating Europe*. Osnabrück: Institut für Migrationsforschung und Interkulturelle Studien (IMIS).
- BOSWELL, C. 2005. *Migration in Europe*. Geneva: Global Commission in International Migration (GCIM)

- BOURDIEU, P. 1983. Ökonomisches Kapital, kulturelles Kapital, soziales Kapital. In: Kreckel, R. (ed.), *Soziale Ungleichheiten*. Göttingen: Otto Schwartz Verlag, pp. 183-198.
- CHAU, T.N. 2003. *Demographic Aspects of Educational Planning*. Paris: UNESCO. IIEP.
- COOMAN, G. 2005. *The Demographic/Education Squeeze in a Knowledge-Based Economy (2000-2020)*. Technical Report. Luxembourg: EC.
- DAXNER, M. 2002. Brain Drain – Brain Gain. [Paper presented at the] *International Conference “Attracting Young Scientists – Strategies against Brain Drain”, 18-20 October 2002, Sofia*.
- , 2003. *Cohesive Policy for the Soft Sectors in South East Europe. With Special Reference to Formal and Higher Education*. Vienna: Federal Ministry for Education, Science and Culture.
- , 2004a. *Academic Freedom and University Institutional Responsibilities in South East Europe (1989-2003)*. Bologna: Bononia University Press.
- , 2004b. *Brain Circulation*. [Paper presented at the] *Enwise Valorisation Conference “Enlarging Europe with/for Women Scientists”, 9-10 September 2004, Tallinn*.
- DOBSON, I. R., RAPSON, V. and SMITH, F. 2005. Brain Drain and Brain Gain: the Challenges of Internationalisation. Brain Drain: Fact or Fiction? [Paper presented at the] *International Conference “Trends in the Management of Human Resources in Higher Education, 25-26 August 2005, Paris*.
- DZVIMBO, K. P. 2003. The International Migration of Skilled Human Capital from Developing Countries. [A Case Study prepared for the] *Regional Training Conference “Improving Tertiary Education in Sub-Saharan Africa: Things That Work!”, 20-23 September 2003, Accra, Ghana*.
- EUROPEAN STABILITY INITIATIVE. (2006). *Cutting the Lifeline. Migration, Families and the Future of Kosovo*. Berlin: ESI.
- EUROSTUDENT. 2005. *Survey on the Social and Economic Conditions of Student Life in Europe 2005*. Hannover: Hochschul-Informations-System – HIS.
- GEDDES, A. 2005. *The Politics of Migration and Immigration in Europe*. London: SAGE.
- GEORGIEVA, P. 2004. Bulgaria: the Double Edge of Economy and Demography. *Higher Education in Europe*, 29(3), pp. 363-370.
- HOLZMANN, R. and MÜNZ, R. 2004. *Challenges and Opportunities of International Migration for the EU, Its Member States, Neighboring*

Countries and Regions: A Policy Note. Stockholm: Institute for Future Studies.

IDENBURG, P., STALNACKE, P., SCHUCH, K., NYIRI, L., VENTSKOVSKY, O., MANDRILLION, M.-H., et al. 2004. *Report by External Evaluators on the Programme of the International Association for the Promotion of Co-operation with Scientists from the New Independent States of the Former Soviet Union (INTAS) in the Period 1993-2003 to the INTAS General Assembly.* Moscow.

KELO, M., TEICHLER, U. and WÄCHTER, B. 2006a. *EURODATA. Student Mobility in European Higher Education.* Bonn: Lemmers

-----. 2006b. Toward Improved Data on Student Mobility in Europe: Findings and Concepts of the EURODATA Study. *Journal of Studies in International Education*, 10(3), pp. 194-223.

KRECKEL, R. (ed.), *Soziale Ungleichheiten*, pp. 183-198. Göttingen: Schwartz.

KUPTSCH, C. 2005. Globalization and Higher Education: the Migration of Students from Developing Countries to Western Europe. In: R. Blanpain (ed.), *Confronting Globalization: The Quest for a Social Agenda.* The Hague: Kluwer Law International.

LORD, W. and RANGAZAS, P. 2006. Fertility and Development: the Roles of Schooling and Family Production. *Journal of Economic Growth*, 11(3), pp. 229-261.

NIJKAMP, P. 2003. The European Research Council: A Point of No Return. *Innovation*, 16(1), pp. 79-85.

SAXENIAN, A. L. 2005. From Brain to Brain Circulation: Transnational Communities and Regional Upgrading in India and China. *Studies in Comparative International Development*, 40(2), pp. 35-61.

SCHUCH, K. 2005. *The Integration of Central Europe into the European System of Research – An Empirical Study of the Participation of Central European Countries in the 4th and 5th European Framework Programme for RTD.* Wien: Guthmann-Peterson.

SRISKANDARAJAH, D. 2006. Migration Madness: Five Policy Dilemmas. *Studies in Christian Ethics*, 19(1), pp. 21-37.

SUCHARTITA, G. and LIEN, D. 2002. Fertility and Economic Growth: Do Immigrant Maids Play a Role?, *Pacific Economic Review*, 7(2), pp. 245-257.

TANNER, A. 2005. *Brain Drain and Beyond: Returns and Remittances of Highly Skilled Migrants.* Geneva: Global Commission on International Migration (GCIM).

THOMAS, E. 2005. The "Gain-Drain" Dynamic, Cultural Change and the Internationalisation of Higher Education. [Paper presented at the]

International Conference on "Trends in the Management of Human Resources in Higher Education, 25-26 August 2005, Paris.

TREMBLAY, K. 2005. Academic Mobility and Immigration. *Journal of Studies in International Education*, 9(3), pp. 196-228.

UNESCO-UIS, OECD and EUROSTAT. 2004. *UOE Data Collection on Education Systems Manual*. Paris: OECD.

UNESCO. 1998. Higher Education in the Twenty-First Century, Vision and Action. [Paper presented at the] *World Conference on Higher Education, 5-9 October 1998, Paris*.

VAN DER MEULEN, B. 2002. Europeanization of Research and the Role of Universities: an Organizational – Cultural Perspective. *Innovation*, 15(4), pp. 341-356.

WEISS FAGEN, P. and BUMP, M. N. 2005. *Remittances in Conflict and Crises: How Remittances Sustain Livelihoods in War, Crises, and Transitions to Peace*. New York: International Peace Academy.

WIARDA, J.-M. 2004. *Nummer 250 000. Die Zeit*, 27.

ZAK, P. J., FENG, Y. and JACEK, K. 2002. Immigration, Fertility, and Growth. *Journal of Economic Dynamics and Control*, 26(4), pp. 547-576.

Demographics and Higher Education: Mediating Variables, Institutional Responses and Public Policies

Mircea MICLEA

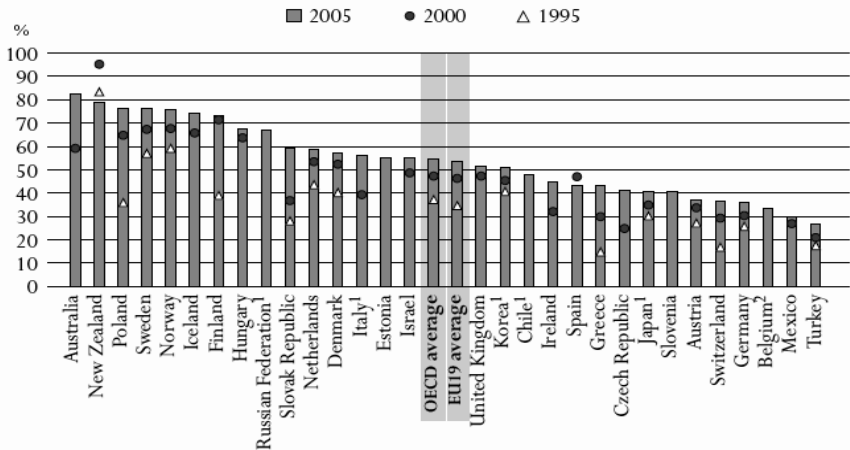
1. Introduction

The influence of demographic changes seem to be the last newcomer in the discourse on higher education in Europe, especially due to an increased worry that the foreseen demographic decline will affect higher education both at the institutional and system level. The following shall give an outline of the main demographic factors that could have an impact on higher education and the most important mediating variables and possible institutional and public responses related to the future demographic challenges.

2. Demographic Trends Relevant for Higher Education

The last decades have shown an unprecedented increase in the demand for higher education and a massification of higher education institutions. Entry rates in the European OECD member states have increased from a country mean value of five per cent around 1950 to more than forty per cent in mid-nineties. In 2003, the net entry rate in tertiary education has reached the level of fifty-eight per cent in Central and Eastern European OECD members and sixty-two per cent in Western Europe (Kupiszewski et al., 2005). As a consequence, in the academic year 2002/2003, EU countries counted almost seventeen million tertiary students, an increase of 2.5 million in five years, since the 1997/98 academic year (EUROSTAT, 2005). The expansion and, in many cases, the massification of higher education in OECD countries is illustrated in Figure 1 (OECD, 2007).

Figure 1. Expansion of higher education



Source: OECD, 2007.

However, despite the increased demand for higher education, there are clear indicators that the demographic trends will determine a decline of the total student population before 2020 (Klemencic and Fried, 2007). As the available data show, Europe is facing a rapid decline in birth rates which will result relatively soon in an inverse population pyramid. According to a well-known report, in 2005 one out of five persons in Europe was older than sixty years, by 2050 one third of the European population will be older than sixty years (UN, 2007). If the present demographic trends continue, the prospect of a graying Europe is inevitable. Although migration has increased over the last decades from 164 million to 185 million, it is unlikely that the substantial demographic decline could be reversed through increasing migration.

However, the impact of a certain demographic decline on higher education is far from being a homogeneous phenomenon. Some of the European countries will face similar dramatic declines and others will continue to experience an increase of the number of people reaching tertiary education. According to the medium variant of UN Population Projection, comparing 2005 to 2050, France will face a decline of population of 11.7 per cent in tertiary education, Spain of thirty-two per cent, Romania and Russia

of fifty-two per cent, whereas the United Kingdom will enjoy an increase of 5.5 per cent, Sweden – 6.1 per cent and Denmark – 24.5 per cent (Kupiszewski et al., 2005). Moreover, within one country there may be noticed geographical and temporal differences. Germany, for example, will have an increase of young people with higher education entry qualification between 2005 and 2011 from 390,000 to 450,000 but an expected of thirty-eight per cent between 2012 and 2050. The situation in the Eastern German *Länder* will be even much more dramatic than for those in the west (Gabriel et al., 2007).

The Romanian education system will suffer a slow decline until 2015, dramatically accelerated until at least 2025, when the estimated number of persons in tertiary education is expected to be forty per cent lower than in 2005 (Table 1). Thus, the course of the demographic decline varies across Europe, clearly not at the same pace.

Table 1. Demographic trends by level of education in Romania

Level of education	2005	2015	2025	Change 2025/2005	Change (per cent) 2025/2005
Pre-school	644,900	605,300	482,600	-162,200	-25.2
Primary	962,600	934,200	806,200	-156,400	-16.2
Lower secondary	1012,600	785,400	757,300	-255,300	-25.2
High school	773,800	484,800	472,900	-301,000	-38.9
Vocational	289,500	183,900	176,200	-113,300	-39.1
Post high school	48,700	34,300	30,500	-18,200	-37.4
Tertiary	650,300	410,500	385,200	-265,100	-40.8

Source: Minister of Education Report, 2005.

Note: Data represent the number of people involved in a specific education level.

The impact of demographic decline in the foreseen future on higher education domain is not direct, but rather mediated by a range of socio-economic variables and by a range of institutional and public responses. These variables can moderate the consequences of the population decline and play the role of proximal causes for the inputs, processes and outcomes of higher education systems. Among the most salient socio-economic moderating variables, the increased individual and social demand for

higher education and the rising career aspiration for women seem to be critical.

3. Socio-Economic Moderating Variables

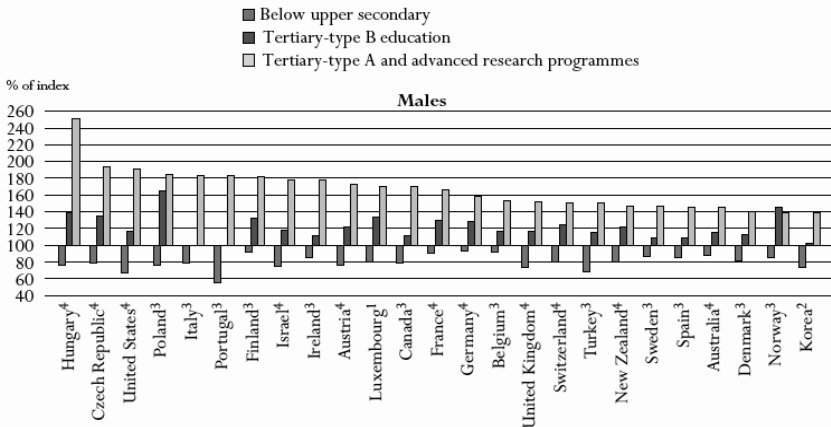
3.1. The demand for higher education

The rise of the knowledge-based economy will continue to increase the demand for higher education. In this respect, it is perhaps worth considering some already relevant trends in the most advanced knowledge-based economy: the United States of America. In 1950, the manufacturing share of total employment in the United States was 33.1 per cent but it decreased to 18.2 per cent in 1989 and reached 10.7 per cent in 2003. At the same time, the number of employed persons grew by twenty-nine per cent (thirty million) and employment in jobs associated with college level education accounted for two-thirds of the job growth. Moreover, the employment growth is expected to continue in the foreseeable future and college labour market clusters (professionals, management, technical, etc.) is expected to generate about forty-six per cent of all job growth between 2004 and 2014. Similarly, the European Commission estimates that by 2010 just fifteen per cent of the new positions will be for those with only basic schooling. The increased demand for a highly qualified work force, necessary for the advancement of the knowledge-based economy, will very likely stimulate corresponding public policies focused on widening access, efficiency and equity in higher education.

On the other hand, a higher education degree continues to offer a substantial premium, both in terms of income and employment opportunities. Compared to upper secondary graduates in 2005, people with a tertiary-level education have a higher income, varying from twenty-five per cent (Denmark) to 115 per cent (Hungary) (Figure 2). Another important fact is that the employment rate in OECD countries for graduates of tertiary education is nine per cent higher than for upper secondary graduates (OECD, 2007). In brief, not only the increased needs of a knowledge-based economy but also individual premiums in terms of income and employment opportunities will continue to stimulate the

demand for higher education. Consequently, the impact of demographic decline on higher education could be alleviated by an increased demand.

Figure 2. Earning premium for persons with tertiary level education.



Source: OECD, 2007.

In addition to higher income and employment prospects, a psychological factor should be considered to account for an increased demand for higher education: *identity construction*. In a time when enrolling in higher education has become a mass phenomenon, being a student at a university is a critical ingredient of the individual and social identity for young people aged eighteen to twenty-five. One may choose to enrol, not necessarily because higher education pays a premium but in order to share a collective identity with his/her age-cohort which offers a perception of safety and psychological comfort.

To summarize, both individual and socio-economic factors are pushing toward an increased demand for higher education. This implies a large share of demographic decline likely to be compensated by an increased participation rate. There is still more room for growth. In Europe, for example, the participation rate in higher education varies between forty to fifty per cent, is still lagging behind USA where the participation rate is more than sixty per cent.

3.2. Changes in career prospects for women

The traditional social role of women of getting married in their early twenties, of having children and then spending most of their time raising children and supporting the working husband is of the past. Most of the jobs provided by the new service-oriented economy no longer require physical force but rather brain power which is equally distributed among men and women. Due to such changes at economic and technical level, women have unprecedented prospects for career development, a situation that will further stimulate their participation in higher education. OECD statistics show this tendency: for the first time in the history there are more female than male students in all EU member states (except for Germany, where the number of males is slightly higher – 50.5 per cent males) (OECD, 2007).

In the European Union today, the proportion of female students in higher education is 54.6 per cent and the percentage of females is steadily increasing (EUROSTAT, 2005). Thus, it can reasonably be expected that, under the pressure of new career opportunities and lifestyles, women's demand and their access to higher education will continue to increase in the next decades. If their enrolment in higher education will rise faster than the general demographic decline rate, as is the case now, it will alleviate the impact on higher education institutions. On the other hand, women's access to higher education will make them even more committed to their careers and, therefore, more prone to delay child birth, with further negative demographic consequences.

4. Institutional Responses

As universities become more aware of the demographic challenge, sooner or later proactive institutional responses will become critical points in universities' strategic planning. The diversity of these responses is hard to imagine, due to the diversity of local conditions, institutional strengths and weaknesses, range of opportunities or the characteristics of the top-management. However, at least two approaches seem to be likely: (a) the enabling prestige-maximizing strategies and (b) the creation of a university open to older students.

4.1. Prestige-maximizing strategies

Prestige is a strong asset of any university, difficult to win, very easy to lose. It is an important prerequisite for attracting more students, highly qualified researchers and financial resources; therefore, any institutional strategy aiming to enhance prestige has widely positive consequences. The highly competitive climate of twenty-first century will push universities to discover their strengths and capitalize on them. Overcoming weaknesses makes for improvement but not excellency, whereas focusing upon strengths allows a university to become a world-class player, to formulate and later reach standards of excellence. In a globalized market for higher education, only the best, the world-class universities will really count; they will attract the best students, best professors and exquisite resources. The winners take all and, in such a world, being an average university means being nothing. The prestige-enhancing strategies, aiming to concentrate resources and to promote excellence have already emerged in several higher education systems. In Germany, the “initiative of excellence” is currently selecting five German universities who will benefit of a substantial additional financial support to reach world-class status. Similar initiatives have already been launched in France, Russia, China, the UAE or India, but the process is just in its initial stages and many other countries will follow. From the factors already mentioned, we may conclude that for highly prestigious universities the impact of demographic decline is non-existent. Those reaching world-class excellence have nothing to fear. In the keen competition for resources, the best takes all (students, resources, opportunities).

4.2. Creating an older adult sensitive university

Those universities which will not succeed to achieve the world-class standards will experience the pressure to accommodate their practices and structure to the demands of a new kind of client: older adult student (*i.e.*, older than the traditional college cohort of eighteen to twenty-three year-olds) will come to the scene. Facing the dramatic shortage of traditional young adult students, the average and below average universities must become more sensitive to the learning needs of older adult. Arguably, lifelong learning will become part of the core business of those universities

interested in keeping high enrollment rates. A short comparison of modal characteristics of traditional and future students is outlined in Table 2.

Table 2. Changing characteristics of the student population

Traditional students	Future students
- young adults (80 per cent under 23 yrs. old)	- older adults (> 30 yrs. old)
- unmarried, no children	- married/divorced, with children
- committed to learn	- committed to work
- lack of work and life experience	- extensive work and life experience
- low opportunity cost of learning	- high opportunity cost of learning
- campus learning	- blended learning

Source: The Authors.

As can be seen from Table 2, the profile of the older adult involved in lifelong learning differs in many respects from the traditional young adult student, including extensive life and work experience. Older students are rather interested to learn what they need in order to improve their work performance or maximizing their chances on the labour market than to learn for good grades. Learning interferes, in their case, with many responsibilities for the welfare of others (*e.g.*, family) and therefore, the opportunity cost they pay for learning is significantly higher than in the case of young students. They prefer blended learning (*i.e.*, a hybrid of e-learning combined with short face-to-face interactions) than moving daily to the university campus to attend classes.

Moreover, these students will bring the complexities and complications of the contemporary adult life to the university. Without claiming to present a panorama of the adult lifestyle, some characteristics seem however worth considering. First, instead of a single stable career, people are following, during their lifetime, multiple careers and jobs. Some authors even estimate that during an active life an active person will be involved in two careers and seven jobs (Taylor and Wacker, 1997). A change in career or job means also a change in lifestyle and mentality. From a clear occupational or organizational identity, the working adult will rather experience several blurred identities. In a volatile labour market, where change is common currency, occupational or organizational de-identification will become rather a virtue than a weakness.

Second, under the pressure of many requirements and multiple careers paths, human relationships become more superficial and changeable. In 1960, American fathers used to talk forty-five minutes with their children daily; now that time has decreased to six minutes (Ridderstråle and Nordström, 2003).

Third, we are already eyewitnesses to an unprecedented individual freedom: freedom to choose between products, partners, lifestyles, networks, occupations. Thanks to the contemporary communication technologies and to increased social mobility, the individual has many more choices than ever before. The same knowledge package delivered by a local university is easily accessible on at least a dozen of sites from other universities.

Forth and more or less as a consequence of blurred occupational and organizational identities, shallow relationships and unprecedented individual freedom, the incidence of mental health problems is increasing. According to a report of the European Commission, one third of the population develops an anxiety disorder during their lifetime, about twenty per cent develop a depression and their estimated incidence in the future will be even higher (European Commission, 2005).

To summarize, older adults are more sophisticated clients for the universities than traditional young adults. They are more demanding, time-pressed, critical and under the stress of many responsibilities. To become older adult-sensitive, a university must assume the re-engineering of many of its processes and structures. Outlined below are those aspects the author deems the most important to be considered by the universities.

- a) *A move from the needs of scientific disciplines to the needs of the people.* Most of the activities taking place at universities are discipline-centered; the teaching of paradigms, content and methods specific to a disciplinary field, in the hope that the brightest students will become later hard workers for advancement of that discipline. A fresh approach is needed to advance knowledge and scholarship. Currently, universities are rather agents of the discipline they serve than of the interests of students. This is a reasonable goal, especially when working with young adults which are themselves looking for a direction. But when students are already focused on a career, looking

for that knowledge that will improve professional performance and when the opportunity cost for learning is very high, the university must re-focus its activities from the scientific discipline to the needs of the audience. Theories and methods become less important than procedures, guidelines or knowledge in action. Knowledge production is less relevant for those students, compared to knowledge exploitation and the 'making of meaning'. For the older adult sensitive universities should rather focus on just-in-time, on-demand knowledge than on disciplinary systems, on blended learning than campus-learning, on new methods of assessment based on performance improvements than on traditional tests and exams.

- b) *Recognition of the diversification of the 'knowledge-workers' at the university.* The university's adequate offer for older adult learners will expand the division of labour inside the university. Those who excel in knowledge-production (research) will become even more different from those involved in 'knowledge-packaging' for e-learning or blended-learning, or those involved in need-analyses of the new clients and in multimedia instructional design. With some exceptions, it is hard to expect that who excels in research could, at the same time, be an e-learning expert. The diversification of activities should be reflected in the diversification and increased flexibility of the reward system. Promotions or incomes should not rely only on publication lists but on more diversified criteria: achievements in technology transfer, innovation, success of e-learning (blended-learning) courses, etc. New demands require even further labour division and flexible reward systems, otherwise the older adult-sensitive university will be rather a rhetorical figure than an institutional reality.
- c) *Consideration of life-work balance.* Most of the older adults problems arise from an inadequate management of their life-work balance: how to match work (as a source of prestige, income, self-esteem) with life (responsibilities for loving others, enjoying activities, family, etc.). The older adult-sensitive university should find a way to insert its offer (learning opportunities) in this complicated equation without producing an unmanageable disequilibrium. New clients' decision to

enroll at a university will definitely be marked not only by the added value of the courses, but also by how well these courses can be integrated in their life-work balance.

- d) *The design of the entrepreneurial periphery.* It is hard to believe that a university as a whole, with its complicated bureaucracy, can elicit the versatility and flexibility required to match the profile and needs of its new clients. Developing an entrepreneurial periphery of the university may offer a part of the solution. Flexible spin-off training companies focused on developing just-in-time, on demand knowledge, sensitive to the changing needs of the clients, but also capitalizing on the university's resources seem more able to promote the idea of an older adult-sensitive university than classical, non-entrepreneurial higher education institutions.

To conclude, an older adult-sensitive university should reform its way of teaching and assessment, reward system and internal structure. Some universities will succeed in implementing these changes and others will fail; as always it is the survival is only for the fittest.

5. Public Policies

Public policies, if wisely designed and implemented, may reduce substantially the negative impact of a demographic decline upon higher education institutions. At least three categories of public policies fall in this category and are presented here:

- a) *Policies aiming to increase the access for under-represented groups.* Each country has its own under-represented group in higher education. In Romania, for example, at least two groups are heavily under-represented: the Roma minority and groups from rural areas. Only twenty-four per cent of the children belonging to the second group are enrolled in high school and less than ten per cent in higher education. Moreover, only sixty-four per cent of Roma are enrolled in primary school, compared to ninety-eight per cent of the rest of the population and their presence in higher education institution accounts to less than one per cent. The demographic growth experienced over the last decades has allowed many countries to

postpone equity problems related to higher education, including the under-representation of some social groups. They will be forced now, in the context of the demographic decline, to recognize the risk in not addressing this issue and hopefully design adequate policies.

- b) *Investment in early education.* Recent studies amply demonstrate that early education is the best educational investment (Cunha et al., 2006). The rate of return is higher than in any other educational cycle and it is associated with the lowest opportunity-cost of learning. The available data on early intervention programmes show that children involved in these programmes have substantially better academic achievements and grade retention, they are healthier, and produce less delinquent behaviours than the control groups (Raver and Knize, 2002). Moreover, the most efficient way to prevent early school drop-outs appears to be early interventions targeting the development of cognitive, social and emotional competencies (Denham, 2007). In contrast, lack of investment in early learning leads to higher levels of remedial spending at later a stage and reduced academic achievements. Thus, a strategic policy aiming to improve enrolment in higher education should start much earlier, with pre-primary education. The impact of learning achievement is incremental: substantial early achievements attract even higher gains in later schooling, while early achievements deficits dramatically reduce the personal gains from further learning opportunities. Governments wanting good university students should start with pre-primary education.
- c) *More flexible immigration policies.* Facing the demands of the knowledge-based economy, many countries have started to renew their immigration policies; in order to compensate, at least partially, their skills deficits on the labour market by more permissive immigration policies, especially for high-skills workers and promising students. The strategy has already proven effective in the United States, where about forty per cent of scientists and elite scientists belong to the first or second generation of immigrants (Feist, 2006). Further more, an Irish report entitled *Tomorrow's skills. Toward a national skills strategy* (2007) estimates that, by 2020, Ireland

needs 950,000 additional workers, with immigration expected to cover 320,000. Thus, reviewed and more permissive immigration policies are strongly recommended. In short, more flexible immigration policies could partially compensate the demographic decline, but it must be emphasized that the very same policies will make the effects of demographic decline for the countries of emigration felt to the same degree.

6. Conclusions

The considerations and data presented in this paper allow for at least two conclusions. First, it should be realized that the impact of a demographic decline on higher education institutions is heavily mediated by the individual and social demand, career prospects for women, institutional responses and public policies. Among them, institutional responses seem critical and an internal reform of the university is strongly needed.

Second, the impact will be highly differential. World-class universities will suffer no negative consequences. Entrepreneurial universities could manage by becoming older adult-sensitive whereas below average, conservative universities will suffer heavy losses, or may even disappear.

References

- CUNHA, F., HECKMAN, J. J., LOCHNER, L. and MASTEROV, D. V. 2006. Interpreting the Evidence on Life Cycle Skill Formation. In: E. Hanushek and F. Welch (eds), *Handbook of the Economics of Education*. Amsterdam: Elsevier.
- DENHAM, S. A. 2007. Dealing with Feelings: How Children Negotiate the Worlds of Emotions and Social Relationships. *Cognition, Brain, Behaviour*, 9(1).
- EDUCATIONAL TESTING SERVICES (ETS). 2007. *America's Perfect Storm. Three Forces Changing Our Nation's Future*.
<http://www.ets.org/portal/site/ets/menuitem.1488512ecfd5b8849a77b13bc3921509/?vgnnextoid=e9f3d944c8b70110VgnVCM10000022f95190RCRD&vgnnextchannel=f993d944c8b70110VgnVCM10000022f95190RCRD> (Accessed 10 March 2008)

- EUROPEAN COMMISSION. 2005. *Improving the Mental Health of the Population: Toward a Strategy on Mental Health for the European Union*. <http://europa.eu.int/com/health> (Accessed 10 March 2008)
- EUROSTAT 2005. *Statistics in Focus: Education Statistics*. http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136250,0_45572552&_dad=portal&_schema=PORTAL (Accessed 19 March 2008)
- FEIST, G. J. 2006. *The Psychology of Science and the Origins of the Scientific Mind*. New Haven: Yale University Press.
- GABRIEL, G., VON STUCKRAD, T. and WITTE, J. 2007. *Up and Down We Wonder: German Higher Education Facing the Demographic Challenge*. [Paper presented at the] *International Conference on "Demographic and Higher Education in Europe. An Institutional Perspective"*, 12-13 October 2007, Bucharest.
- GERGEN, K. J. 1991. *The Saturated Self Dilemmas of Identity in Contemporary Life*. New York: Basic Books.
- KLEMENCIC, M. and FRIED, J. 2007. Demographic Challenges and Future of the Higher Education. *International Higher Education*, 47, pp. 12-14.
- KUPISZEWSKI, M., BIJAK, J. and NOWOK, B. 2005. Impact of Future Demographic Trends in Europe. *Report on the Study No. CAHP 9 (2005) 7.1* http://www.coe.int/t/e/social_cohesion/population/impact_percent_20pop_percent_20trends_percent_20report_percent_202005.pdf (Accessed 19 March 2008)
- ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD). 2007. *Education at a Glance. OECD Indicators*. Paris: OECD.
- RAVER, C. and KNIZE, J. 2002. *Ready to Enter: What Research Tells Policies-Makers About Strategies to Promote Social and Emotional School-Readiness Among Three- and Four-Years Old Children*. New York: National Center for Children in Poverty.
- RIDDERSTRÅLE, J. and NORDSTRÖM, K. 2003. *Funky Business. Talent Makes Capital Dance*. Stockholm: Book House Publishing.
- TAYLOR, J. and WACKER, W. 1997. *The 500 Year Delta: What Happen After What Comes Next*. London: Harper Business.
- Tomorrow Skills. Toward a National Skill Strategy*. 2007. Dublin. <http://www.skillsstrategy.ie> (Accessed 19 March 2008)
- UNITED NATIONS. 2007. *World Population Ageing 1950 – 2050*. New York: UN.
- WÖBMANN, L. and SCHÜTZ, G. 2006. *Efficiency and Equity in European Education and Training Systems*. Brussels. <http://ec.europa.eu/education/policies/2010/doc/eenee.pdf> (Accessed 19 March 2008)

Beauty and Brains: Student Information Tools and Attracting International Students to European Higher Education

Leon CREMONINI and Don WESTERHEIJDEN

1. Introduction

Higher education may be at the eve of another decade of immense change. In many European countries, the demographic situation is changing to one with shrinking cohorts of young people. In Africa, population effects of HIV/AIDS will be devastating unless substantial changes take place. In Asia, the two 'giants' India and China seem to be waking up in terms of economic and social development, and are witnessing rapidly increasing numbers of students. For example, according to a recent report (UNESCO Institute for Statistics, 2007) Chinese graduation rates (2005-2006) are almost twofold those of the United States. Higher education institutions in Europe must reconsider their role in society for these reasons: traditional student pools are 'drying up' while new ones are emerging. Yet, what the future holds cannot yet be ascertained. Will emerging student pools disappear again (for instance if China's expanding higher education system starts to absorb its own students)? Or will the development of a new middle class in those countries increase the prospects for students to go abroad and, thus, affect student demographics even more? And, apart from demography, society is demanding different roles from higher education in the emerging knowledge society. Politically, on the one hand some neo-liberal tenets are beginning to become widely-held 'self-evident' points of view, for example leading to the introduction of tuition fees and similar economic elements, while on the other hand some politicians are backtracking from extreme beliefs in the market. In Europe, we may add the drives for changes embodied in the Bologna Process and the Lisbon Agenda, which should lead to a transparent higher education area encompassing forty-five countries, and a research area of the twenty-seven European Union member

states. Finally, the higher education community must come to terms with 'globalisation'. Globalisation is a reality that offers today's students the choice of study options on a global scale.

An eurocentric view would hold that the old continent has to find ways of maintaining its quality of life, which includes technological and social developments for environmental sustainability while at the same time with scientific and technological progress to ensure economic growth. Both qualitatively and quantitatively, much is demanded from Europe's higher education institutions.

One of the many effects of these changes is the increasing permeability of national borders with subsequent effects on higher education systems. By the same token, international aspects of higher education systems are gaining importance, by the same token. In the framework of General Agreement on Trade in Services (GATS)¹, four modes of international provision of higher education are distinguished:

- Mode 1: From the territory of one country into the territory of any other country (*cross-border supply*);
- Mode 2: In the territory of one country to the service consumer of any other country (*consumption abroad*);
- Mode 3: By a service supplier of one country, through commercial presence in the territory of any other country (*commercial presence*);
- Mode 4: By a service supplier of one country, through presence of natural persons of a country in the territory of any other country (*presence of natural persons*).

The mode that seems to come most natural to higher education, with its tradition of students travelling to universities in foreign countries, is the second above-mentioned mode (consumption abroad).

Student migration at a global scale can be interpreted as 'brain drain' for the home countries, because once students travel abroad for studies, they

¹ GATS is a legally enforceable set of multilateral rules covering international trade in services.

may stay in their host region for their further career and life, to the disadvantage of social and economic growth opportunities in their home region. A broader perspective includes processes of student migration, taking into account factors, such as, first, brain gain in the host country but also in the home country (Jalowiecki, 2004); second, the possibility of a positive-sum game: the brain gain is larger than the brain drain, or there is a net positive effect for the world society. On the negative side of this positive-sum game, such an outcome may be reached through higher degrees of inequality (cf. 'knowledge gap' in Stiglitz, 2007), which may result in higher degrees of international tensions. Third, connections of permanently migrated high potentials to their home regions lead to a higher level of integration of the total society (Meyer, 2001).

The development of cross-border education is not purely an exogenous phenomenon, but rather something that actors in higher education can influence to some extent. This paper will discuss what actors in Europe's higher education systems are doing in that respect. More specifically, the paper will look at the strategies of two major European countries with regard to stimulating student immigration as a form of cross-border higher education.

2. Cross-Border Education

2.1. *Student mobility as one form of cross-border education*

Internationalisation of post-secondary education is an increasingly important trend in the global world. Increasing the attractiveness of the European Higher Education Area for the rest of the world has been a driving force of the Bologna Process since its inception (Trends V², p. 44). Cross-border education (CBE) is one component of the internationalisation of post-secondary education. The other key component is 'internationalisation at home'.

² 'Trends' is a series of reports by the European University Association. The aim of the series is to give a regularly updated overview of the state of European higher education in the framework of the Bologna Process.

This text is concerned with the mobility of international students towards France and the United Kingdom (as examples for Europe) and how this is influenced (or not) by Student Information Tools (SITs).

CBE includes mobility for students, teaching and other academic personnel, programme mobility and institutional mobility. Student mobility is the key facet this article will tackle and probably the most substantial part of CBE. It includes: full study abroad for a foreign degree; part of academic partnership for home degree or joint degree; and, exchange programmes.

In the frame of CBE, SITs are used mainly to inform students who go to another country to study (consumption abroad, or GATS mode 2). SITs cannot be used to annihilate barriers to consumption abroad, such as: visa requirements and costs, foreign currency and exchange requirements, recognition of prior qualifications from other countries, quotas on numbers of international students in total and at a particular institution, restrictions on employment while studying, or recognition of new qualification by other countries.

However, SITs can be powerful means to balance increases in individual demand for higher education on a global scale with barriers such as those mentioned above, as well as providing timely information on policy changes (*e.g.*, a change in visa requirements). The next sections will describe SITs in France and the United Kingdom, their impact on student mobility as well as their pitfalls.

2.2. Rationales for cross-border education in France and the United Kingdom

There are several rationales for cross-border education, which can be policy-related, institutional and student-focussed. There are four policy rationales³ for cross-border education⁴: (i) the mutual understanding approach; (ii) the

³ Naturally, different players will prioritise and focus according to their national-political context.

⁴ Although we are concerned specifically with student mobility, as an influencing factor of the demographic patterns, the rationales apply (to different degrees) to all forms of cross-border education.

skilled migration approach; (iii) revenue-generating approach, and (iv) the capacity-building approach⁵.

The mutual understanding approach to cross-border education is the common historical basis of internationalisation policies for higher education. In this approach, countries seek openness to the world and strengthened ties between countries through the creation of international networks of political and business elites. The privileged policy instruments thus lie in generally modest student mobility and academic partnership programmes and, for relationships between developed and developing countries, in development assistance projects. Although the mutual understanding can have an economic impact, it does not consider cross-border education as part of a broad and articulated economic policy. Academic, political, cultural and social rationales appear to be seen as more important than short- and medium-term economic rationales. In short, cooperation is much more important than in the three other approaches, which give more importance to international competition. The example of the European Union illustrates how far-reaching the cultural and political components of this approach to internationalisation of post-secondary education can be.

In the skilled migration approach, cross-border post-secondary education is viewed as a means of supporting economic growth and competitiveness in a knowledge economy. Cross-border education is used in a strategic way in order to attract skilled students that may become skilled immigrants in the receiving country and to stimulate the competitiveness of the higher education system, both considered as crucial for the economic growth in a knowledge economy. The main feature of the skilled migration approach to internationalisation is a drive to attract larger numbers of foreign students, generally through a combination of agencies that market the higher education sector abroad and an immigration policy that makes it easier for foreign students to stay after their studies.

The revenue-generating approach shares the rationales of the mutual understanding and skilled migration approaches, but offers higher education services on a full-fee basis, without public subsidies. Compared to domestic students, foreign students generate additional income for

⁵ The following paragraphs draw heavily on OECD 2004, pp. 220-231.

institutions that are encouraged to become entrepreneurial in the international education market. Under this strategy, governments tend to grant institutions considerable autonomy and seek to secure the reputation of their higher education sector and protect international students, for example through quality assurance arrangements. Examples of this approach are Australia, the United Kingdom (for non-European Union students), New Zealand and the United States (for undergraduates).

A final approach to the internationalisation of higher education, more prevalent in emerging economies, is the capacity building approach. This is an importer perspective which views cross-border education as a means to meet unmet demand as well as to help build capacity for quality higher education.

Institutions have rationales of their own, including the possibility of networking and, therefore, improving their own reputation and prestige. Faced with the potential enrolment surges from all over the world, institutions need to reposition themselves on the global market. As they try to attract bright students and researchers, more funds, etc. (using, *inter alia*, SITs), institutions are becoming increasingly stratified hierarchically. Institutions are also likely to respond to domestic funding contexts. It is noteworthy, for example, that the highest growth in international student enrolments is recorded in countries with a revenue-generating approach, where institutions are encouraged to become more entrepreneurial. The increasing worldwide demand for cross-border education is also an incentive for institutions to be more international and to attract more foreign students. The recent Trends V report gathered data on the geographical areas in which (European) institutions would most like to enhance their international attractiveness. While Europe (including the European Union and Eastern Europe) remains the top priority for enhancing attractiveness, Asia has overtaken North America and has seen a substantial increase (from forty to fifty-nine per cent) since the 2003 Trends III report; over seventy per cent of institutions in Finland, France, Hungary, Lithuania, the Netherlands, and the United Kingdom cite Asia as their priority. Australia, the Arab world, despite some increase in attention, and Africa remain the lowest priority areas for higher education institutions across Europe (Trends V, pp. 44-45).

Students may decide to become mobile for several reasons, such as language, cultural, or geographic proximity; perceived quality of life in host country; networks of present/former students; nature of the accessibility and range of post-secondary studies in their country of origin; reputation the host country's higher education system and institutions; the costs involved in studying abroad; recognition of skills and qualifications; immigration procedures; opportunity on the labour markets.

The next sections will discuss strategies and tools to attract foreign students to France and the United Kingdom.

3. France and the United Kingdom: Strategies to Attract Foreign Students

3.1. Student information tools in France

Since the late 1990s France embarked in a series of coordinated efforts to internationalise its higher education (Kuptsch, 2003; 2006). The French government announced in January 2000 that it would double the number of visas delivered to foreign students, while the Ministry of National Education suggested that, in the long run, foreigners should constitute twenty per cent of the higher education student body⁶ (Kuptsch, 2003, 2006), a sharp rise from the nine to ten per cent foreign⁷ university pupils counted at the time (Saraswati Report, 2004). To achieve such ambitious goals, different forms of cross-border education were explored, yet student mobility remained probably the most critical dimension.

France took a strong stance in promoting its national higher education system to appeal to students from across the globe. Several outreach activities have been taking place over the past years. Generally, these initiatives do not include commercial rankings. The standings of French universities in international institutional rankings are sometimes mentioned

⁶ It is unclear, however, whether this statement referred to all students with a foreign passport or merely to those who had done their schooling abroad.

⁷ Including students who came to study in France and resident foreigners who enrolled in a French university upon graduation from a French secondary institution.

as an incentive for students to choose France as their study destination⁸, but references on the official dissemination tools set up by the government to attract foreign students are lacking. Moreover, unlike other countries such as Germany and the United Kingdom, France has not made significant efforts to create its own national ranking to promote itself beyond its borders⁹.

The most notable SIT is, arguably, 'Edufrance'¹⁰. Established in 1998 under the auspices of the ministries of National Education, Foreign Affairs, and of Culture and Communication together with the State Secretariat of Foreign Trade¹¹, Edufrance is a 'public interest agency' and web portal¹² that acts on behalf of the two Ministries of Education and Foreign Affairs to promote French higher education abroad.

It markets French higher education internationally through its links with 181 higher education establishments and its network of over seventy regional offices in almost fifty countries. Many of these countries have cultural and linguistic ties with France. Over a third are members or observers of the Francophone International Organization, and several are

⁸ For example the site of the French consulate in Atlanta, US (http://www.consulfrance-atlanta.org/article.php3?id_article=863), emphasises the positive standing of French institutions in the Financial Times rankings.

⁹ On the contrary, the CHE ranking in Germany, for example, has the explicit aim to give information on German HEIs for foreign students and therefore efforts are made to have the website fully translated in English (<http://www.daad.de/deutschland/studium/hochschulranking/04690.en.html>). In France this is not the case, possibly because there is a greater emphasis on the relationship with the francophone world.

¹⁰ Now called CampusFrance: CampusFrance is the product of the merger of Agence EduFrance and two other key vehicles for university and scientific mobility, CROUS and EGIDE. Agence EduFrance has until now been responsible for promoting French higher education and has achieved a solid track record and wide recognition as one of the world's leading organizations in this area. CNOUS and EGIDE manage French government scholarships as well as programs for university cooperation sponsored by the French Ministry of Foreign Affairs (see <http://www.edufrance.fr/en/b-agence/agence01.htm>).

¹¹ See: Official Journal, No 271 of 22 November 1998, at <http://www.legifrance.gouv.fr>, accessed September 15, 2007.

¹² See <http://www.edufrance.fr>, accessed September 15, 2007.

former French colonies¹³. Indeed, cultural proximity seems to be a decisive factor when it comes to attracting foreign students. The 2004 OECD report *Internationalisation and Trade in Higher Education – Opportunities and Challenges* (p. 212) shows that fifty-one per cent of foreign students in France come from former African colonies. Instead, a small minority are citizens of Commonwealth countries. These links are often reinforced by bilateral agreements and policies to encourage student exchange mobility or fund specific international projects involving educational institutions and to strengthen ties with areas where the relationship with France has been traditionally weaker (ibid.).

Edufrance has created tools for the promotion of specific fields such as engineering (the 'n+I' programme¹⁴, including fifty-five member establishments), legal studies (Edudroit, including some twenty member universities) and for on-line student guidance. The website and the in-country office presence are complemented by the organizing 'education fairs' (which we previously classified as SITs in their own right). In 2004, Edufrance organized eighteen major education fairs. The fairs in China (Beijing and Shanghai) were the largest ever held. For some of the fairs, the agency secured funding, in partnership with other European Union bodies. Edufrance has undertaken a complete overhaul and modernisation of its internet sites so as to attain the highest possible standard in this area.

In addition to Edufrance, other initiatives are indicative of France's efforts to promote its higher education in particular countries. For example, to improve the reception of students wishing to study in France at the overseas representations and to facilitate the paperwork involved, the

¹³ See <http://www.francophonie.org/index.cfm>, accessed September 15, 2007.

¹⁴ 'n+i' is a CampusFrance network of engineering institutes in France (national) and abroad (international). 'n+i' Engineering Institute(s) is intended for students and young professionals who graduate in Engineering or Sciences at a minimum level of a Bachelor's degree (Licence, B.Tech, B.Eng, B.Sc, B.Phil, Licienciatura... or equivalent) and who seek additional top training in France with a view to practicing engineering on the international scene. For French students wishing to study abroad, the 'n+i' Network of Institutes and programs welcomes engineering students enrolled in French partner institutions (list) and interested in locating a 6–12 month educational program or internship or 18–24 month master's program, <http://www.nplusi.com/>, accessed September 15, 2007.

Ministry of Foreign Affairs decided to test a new structure in five countries (in the Maghreb region, Senegal and Vietnam), known as the Study in France Centre (CEFs). The CEFs inform students of these countries on higher education opportunities in France and accompany them through the application process.

Arising from the experience of the Language and Academic Assessment Centre (CELA), already operational in China for the last two years, these Centres offer foreign students the possibility of submitting their application on-line and monitoring the administrative processing in real time. They can have a personal interview, receive help defining their proposed course of study, and access all Edufrance documentation on higher education in France. Thanks to an intranet system, the various embassy services involved can use data generated by the website and thus more efficiently and more reliably provide necessary documents, notably visas. Soon, the higher education institutes will also be linked to this computerised system. They will then be able to interact with the CEFs, stipulate the kind of candidate student profile that they are looking for and receive useful information on the candidate students: proposed course of study, validity of their qualifications, command of the French language, and so forth. The pilot CEFs became operational in June 2005.

3.2. Student information tools in the United Kingdom

The United Kingdom (UK) has adopted a revenue generating approach to internationalisation and competes with other countries in selling its higher education services. It is estimated that international students bring 3.8 billion GBP a year into the UK¹⁵. For this reason, the UK has initiated aggressive actions to consolidate existing markets, penetrate new ones, and scuff the influence of its main competitors. The British Council, present in 109 countries, has been the chief liaison for students across the globe.

Taking stock of increasing competition in Higher Education, the 1999 Prime Minister's Initiative (PMI) was launched to increase the number of international students following a UK education, in recognition of their

¹⁵ See Consultation Document 'Positioning for Success', 2003.

importance in fostering international relations and bringing long-term political and economic benefits to the UK¹⁶. The main elements of the PMI involved investment in a UK education marketing campaign managed by the British Council, the streamlining of entry procedures and work rules for overseas students, and increasing the number of Chevening scholarships¹⁷. It involved stakeholders from UK Trade and Investment, Ministry of Defence, Foreign and Commonwealth Office, Home Office, UK visas, the devolved administrations and the British Council. The initiative was managed by a Project Working Group chaired by the Department for Education and Skills. In fact, the PMI is a comprehensive set of marketing and communications strategies (or SITs, according to our prior definition), including the 'Education UK' brand, marketing and communications campaigns, the 'Education UK' Website and publications, and working with agents.

The 'Education UK' Brand, developed and managed by the British Council on behalf of the Government, is the national brand built to communicate the UK's education offer to a global audience. The Government and British Council have developed this brand to encourage students who are considering overseas study to choose the UK. They wish to increase demand for UK education by reinforcing and developing positive perceptions and challenging negative ones. The brand also intends to support the marketing and branding initiatives of individual UK institutions that can apply to use the Education UK brand logo in their own promotions¹⁸.

The 'Education UK' brand platform is also used for marketing and communications campaigns at global, regional and country-specific levels. The 'Education UK' website and publications purport to be 'great tools for

¹⁶ See <http://www.britishcouncil.org/eumd-pmi-history.htm>, accessed 15 September 2007.

¹⁷ The Chevening scholarships are funded by the Foreign and Commonwealth Office and administered by the British Council. They enable overseas students to study in the United Kingdom, see <http://www.chevening.com/>, accessed 15 September 2007.

¹⁸ See <http://www.britishcouncil.org/eumd-brand>, accessed 15 September 2007.

marketing UK education and training to international students'¹⁹. The website provides an easy-to-search database of courses on offer in the UK (including English language, degree and postgraduate courses) and includes initiatives such as the three-minute 'movie' which stresses the advantages of a UK education.

On 18 April, 2006 Prime Minister Tony Blair, in consultation with the education sector, launched the PMI for International Education to build on the success of the first PMI. The strategy comprises four interconnected strands: UK positioning; ensuring the quality of the student experience; strategic partnerships and alliances; and diversification and consolidation in priority countries. The new PMI was largely influenced by the consultation document *Positioning for Success*²⁰, which was distributed throughout the UK education sector as the 1999 PMI strategy was coming to an end. This document suggested a new strategy to help the UK capitalise on future opportunities, combat increasing competition in the international education market and to strengthen its position in traditionally USA-dominated markets such as Japan, South Korea, Brazil and India.

The strategy suggested not only focussing on branding and aggressive marketing campaigns, but also building the UK's capacity (including overseas-delivered courses and qualifications) for an expected rise in international enrolments and building sustainable long-term relationships with students and graduates and the world of work.

Two key aspects of the UK strategy are noteworthy. First, there is an emphasis on the potential economic advantages of a UK education for to-be graduates. The UK strives to convince future students that a UK education, vs. that of other countries such as the USA and Australia, is worthwhile. This approach is different from the French one; the Edufrance site emphasises most of all France's tradition of non-discrimination and equal treatment between French and international students. Second, the UK focuses both on

¹⁹ See <http://www.britishcouncil.org/eumd-pmi-uk-positioning.htm>, accessed 15 September 2007.

²⁰ See http://www.britishcouncil.org/education_uk_-_positioning_for_success_-_consultation_document.pdf, accessed 15 September 2007.

its European position as well as its difference from the Continent (in other words its unique transatlantic focus).

Although there is no 'official' endorsement of rankings, they are more often mentioned in the UK marketing strategies than in France. The Education UK newsletter for education advisors, for example, stresses the position of UK universities in the latest world rankings²¹. The British Council also supplies information on the various rankings available for the UK, distinguishing between the so-called 'official rankings' (The Research Assessment Exercise and the Subject Review Reports) and those presented in published newspapers (*e.g.*, The Times or The Guardian)²². This attention given to rankings might be a sign of the ongoing efforts to highlight the prestige of the UK's Higher Education and its institutions in the world.

In addition to branding and advertising, there are other initiatives to attract foreign students to the UK, including easing Visa and work-permit requirements²³. Moreover, in 2002 the 'Real UK' campaign was launched in thirteen countries²⁴ with the chief goal of inspiring prospective students and challenging negative stereotypes about the UK. Students were encouraged to enter a competition via the website and supported by a host of UK celebrities. The prize was a trip to the UK where winners met a number of UK icons, experienced UK lifestyle through attending pop concerts and football matches and were exposed to a cross section of UK educational opportunities. Footage from the trip has been compiled into promotional videos for use in overseas marketing activity.

²¹ See <http://www.britishcouncil.org/usa-education-advisors-newsletter-2006-december.pdf>, accessed 15 September 2007.

²² See for example: <http://www.britishcouncil.org/norway-education-study-advice-ranking-assessment.htm>, accessed 15 September 2007.

²³ Students are now allowed to work up to 20 hours per week during terms and full time during vacation periods.

²⁴ Brazil, China, Egypt, Hong Kong, Indonesia, Jordan, Korea, Malaysia, Russia, Taiwan, Thailand, the United Arab Emirates and Vietnam.

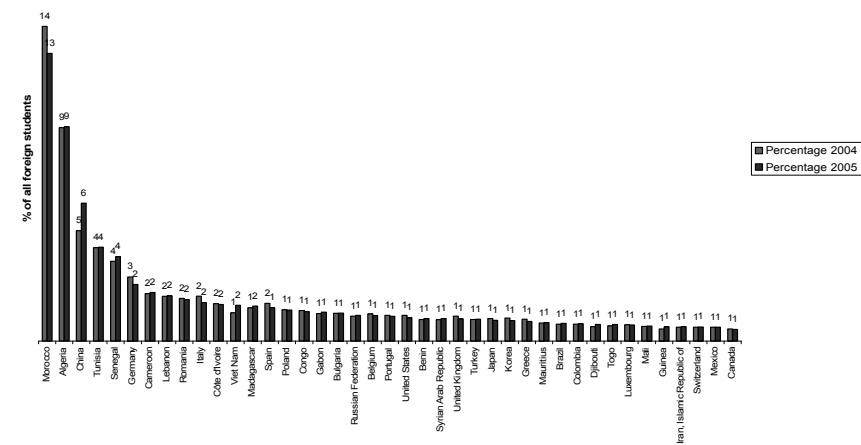
4. Student Mix and Student Information Tools?

The prior section described what tools France and the UK use to attract foreign students. It was stressed that student mobility is one of miscellaneous forms of cross-border education. This section will emphasise the differences between France and the UK. Next, based on the available sources, we will suggest how particular perceptions amongst the different target audiences are created. These perceptions may encourage certain choices over others and, thus, play a relevant role in shaping the composition of the receiving countries' student populations. This entails that student migration is also 'replacement migration'²⁵, and SITs can thus be seen as instruments to influence the degree of replacement. Hence, SITs may influence different national higher education systems, as they are affected differently by international student mobility. The concluding section of this article will draw attention to the potential for different SIT mixes in moulding student bodies in the two countries under consideration.

Section 2.2 described the four key policy approaches to cross-border education. Increasingly countries around the world are trying to attract foreign students in a bid to profit, yet in Europe the revenue generating approach is mostly associated with the UK (and The Netherlands). France, while beginning to pursue this path as well, has mostly adopted the skilled migration approach, which explains the importance attached to easing visa applications and the possibilities for new graduates to remain in the country for employment. Indeed a key problem is the future labour market gap, especially in science and technology. Yet, what the impact will be in the middle to long term on science and technology in the destination countries (as well as in the countries whence students come) remains open. The European Union is striving for more graduates in scientific and technological fields, but as yet there is no unified European Union policy to attract foreign students who might contribute to filling a gap that apparently Europeans struggle to fill.

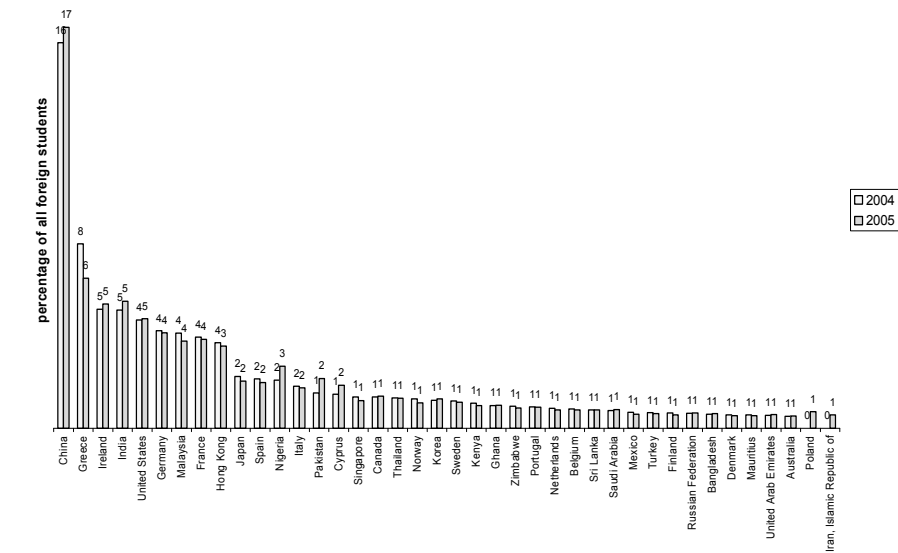
²⁵ Replacement migration can be defined as an increase in immigration to maintain certain demographic parameters.

Figure 1. Foreign students in France (2004 and 2006)



Source: OECD, 2006.

Figure 2. Foreign students in the UK (2004 and 2005)



Source: OECD, 2006.

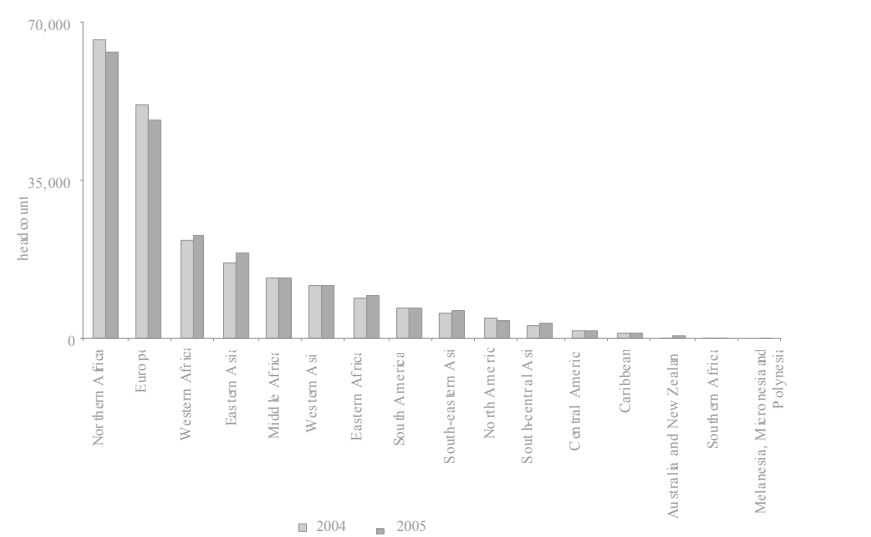
The creation of a positive image of France in the eyes of potential foreign students is the first of the four options suggested by the Saraswati group (Harfi, 2005, pp. 249-250)²⁶. This strategy has actively been pursued through the Edufrance website. The website emphasises most of all France's tradition of non-discrimination and stresses that no distinction is made between French and international students. There are no references to the standing of French universities in international rankings (although there are references to the excellent quality of the French higher education tradition).

In the UK, key efforts have gone into branding its higher education, and stressing the importance of a UK education as opposed to main global competitors. Consequently, the UK pays more attention to the positioning of its institutions in global and national rankings, suggesting that the prestige of its system is viewed strongly under the perspective of the relative position of its institutions vis-à-vis competitors worldwide.

The following charts show the contribution of students from different national backgrounds in France and the UK in 2004 and 2005 (OECD, 2006).

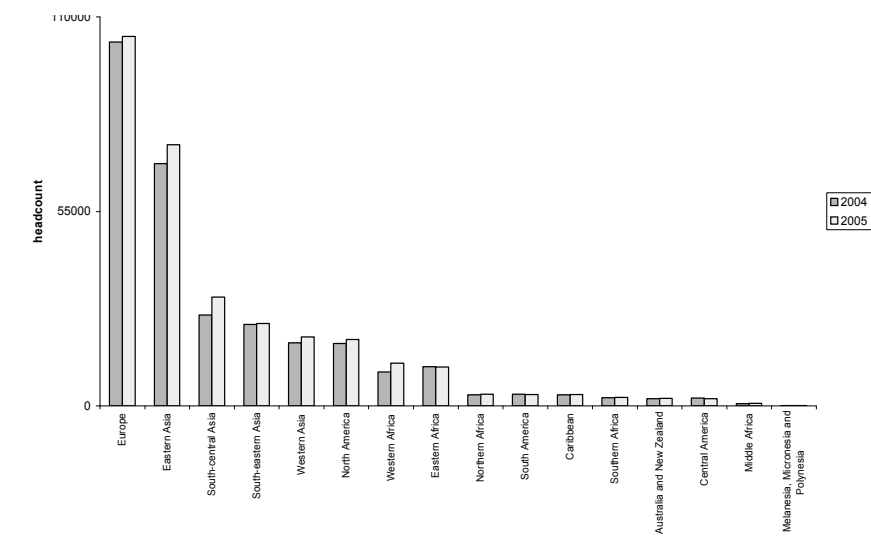
²⁶ The other three scenarios are: (a) more export of France's educational institutions so that foreigners would be exposed to France's educational system without being on French territory (and they might pay fees overseas), (b) a smaller increase in foreign students without specific policies to streamline the flow of foreigners (*i.e.*, country of origin and choice of programmes), which would likely result in proportionally more students from Asia and Latin America, and (c) a similar limited increase in numbers accompanied by targeted streamlining of incoming student flows (Harfi, 2005, p. 247).

Figure 3. Foreign students in France by region (2004 and 2006)



Source: OECD, 2006.

Figure 4. Foreign students in the UK by region (2004 and 2006)



Source: OECD, 2006.

From the data is apparent that:

- Both countries have seen an increase in Asian (particularly Chinese) students. In France this is interesting since the overall number of foreign students declined between 2004 and 2005;
- France focuses mainly on Asia and other regions, such as the Caribbean, while the major focus of the UK, besides receiving many European students, is Africa and Asia;
- In France the number of African students diminished both in relative and absolute terms, although there are sharp differences between areas (North Africans diminished, but Western and Eastern Africans increased). In the UK the absolute numbers favour the Asian students, although there the percentage increase is double for Africans students. The colonial bonds with the UK seem to be stronger than those with France (the commonwealth association might play a role in this).

The data cannot give a definitive answer to the question whether there is a causal link between SIT improvements and dramatic surges in foreign students during the last decades. The concluding section of this article will draw attention to the potentials of different SIT mixes in moulding student bodies.

5. Conclusion: Why Do Student Information Tools Count?

SITs wish to play a role in shaping student demographics by influencing student choice. Yet, SITs do not exist in a vacuum. On the contrary, they are players in a multi-faceted game, where economic, sociological and historical ties are pivotal. Moreover, the recent Bologna reforms, most notably the Bachelor-Master-Doctorate cycles, are relevant factors. The separate cycles imply different priorities (and different pools or markets) for students, institutions, and governments alike. Therefore, SITs ought to be aligned with these developments too. This fits in the question of what audience is being targeted, which goes beyond the purported level of education, to touch upon a great variety of factors such as socio-economic background, culture, ethnicity, etc. (see also, Cremonini et al., 2007).

Sociology can shed some light on extant mobility trends. While there is a wealth of possible explanations about current demographic trends, educational systems of certain countries (including the UK and France, but also countries this paper did not cover such as the USA, and Germany) remain generally more attractive to many students around the world. This might be because these countries fall in so-called 'zones of civilizational attraction' (Collins, 2001). A zone of civilizational attraction works as a pattern of social contacts or a flow of people, which explains why students have a tendency to travel to certain centres or countries that are attractive and recognised. A zone of civilizational attraction can be thought of as a 'zone of prestige' (ibid.). It is noteworthy that geopolitical and economic hegemony do not translate *ipso facto* in civilizational prestige (twentieth century France is an example of the contrary, because Parisian intellectual culture 'set the fashions that have been emulated throughout the richer and more militarily powerful parts of the world' (ibid.).

It has also been suggested that student mobility may relate to a centre-periphery effect (ibid.). This idea, which is linked to the concepts of a 'zone of prestige' and a 'zone of civilizational attraction', and also to the 'knowledge gap' (Stiglitz, 2007), posits that many of the educational possibilities are constructed in specific places around the world, which then become the most obvious study destinations for prospective students. Other countries cannot benefit from the contributions of incoming students: first, the students' home countries at least temporarily lose talented people ('brain drain') and second, the non-chosen potential destination countries are missing the 'brain gain' that only benefits the 'zones of civilizational attraction', making both categories of countries more peripheral in the future (a positive feedback loop; in other words: a vicious circle). The idea of a 'zone of civilizational attraction' or a 'zone of prestige' suggests that economic and political influences are also pivotal. Students from countries or areas pressed by economic and political problems are more likely to seek opportunities in wealthier parts of the world. These areas often coincide with 'zones of prestige', but this situation can be evidenced even within countries: for example Eastern Germans are more likely to wish to study in the west of the country than vice-versa, in spite of significant efforts made at the federal level to rebalance internal (student) migration by rendering the east attractive for applicants.

Moreover, evidence shows that currently, the ties with former colonies and language ties are still critical. For example, the toughening of language requirements in France is likely to attract French-speaking students, notwithstanding efforts made to market the French language as an important reason to choose France as a destination. Similarly, countries with traditional links to the UK send more students there than to France (or elsewhere). This suggests that while targeting different populations (as is evidenced by the multi-language form of information supplied for example on the Edufrance site), SITs are still more effective with traditionally 'close' populations. Although not surprising, it does suggest that cultural proximity remains crucial: there is not a single global market for cross-border education, but different markets for different 'cultural regions'.

This text did not purport to prove definite causal relationships between certain tools and certain patterns of student migration. The article has pinpointed the fact that SITs are relatively new and increasingly important players in a changing world. It is worth exploring if and how SITs can open the doors of existing 'prestige zones' to new national higher education systems or help certain countries keep their stronghold in particular zones. SITs could even shift the boundaries of the zones altogether and play a role in creating new centre-periphery balances and overcoming ancestral colonial legacies.

References

- BRITISH COUNCIL. 2003. *Education UK: Positioning for Success, Consultation Document*.
http://www.britishcouncil.org/education_uk_-_positioning_for_success_-_consultation_document.pdf (Accessed 7 September 2007)
- COLLINS, R. 2001. Civilizations as Zones of Prestige and Social Contact. *International Sociology*, 16(3), pp. 421-437.
http://club.fom.ru/books/Collins01_3.pdf (Accessed 7 September 2007)
- CREMONINI, L., WESTERHEIJDEN, D. F., and ENDERS, J. 2007. Disseminating the Right Information to the Right Audience: Cultural Determinants in the Use (and Misuse) of Rankings. *Higher Education*, 55(3), pp. 373-385.
- CROSIER, D., PURSER, L. and SMIDT, H. 2007. *Trends V: Universities Shaping the European Higher Education Area*.

- Brussels: European University Association.
http://www.eua.be/fileadmin/user_upload/files/Publications/EUA_Trends_V_for_web.pdf (Accessed 7 September 2007)
- DILL, D. D. and SOO, M. 2005. Academic Quality, League Tables, and Public Policy: A Cross-National Analysis of University Ranking Systems. *Higher Education*, 49(4), pp. 495-533.
- GROUPE D'INFORMATION ET DE SOUTIEN DES IMMIGRES (GISTI). 2000. *Les droits des étudiants étrangers en France: formalités préalables à l'inscription, entrée – séjour, exercice d'une activité professionnelle pendant les études, changement de statut, accès à la nationalité française*. Paris: Imprimeries Expressions. (Les cahiers juridiques).
- HARFI, M. 2005. *Etudiants et chercheurs à l'horizon 2020: enjeux de la mobilité internationale et de l'attractivité de la France*. Paris: Commissariat général du plan.
- HATAKENAKA, S. 2004. *Internationalism in Higher Education: A Review*.
<http://www.hepi.ac.uk/downloads/12Internationalism%20in%20Higher%20Education%20A%20Review.pdf> (Accessed 15 September 2007)
- INTERNATIONAL ORGANIZATION FOR MIGRATION (IOM). (2006). Towards Development-Friendly Migration Policies and Programmes: Some Concrete Examples from European Member States. [Paper presented at the] *International Conference "Migration and Development", 15-16 March 2006, Brussels*.
- JALOWIECKI, B., and GORZELAK, G. J. 2004. Brain Drain, Brain Gain, and Mobility: Theories and Prospective Methods. *Higher Education in Europe*, 29(3), pp. 299-308.
- KUPTSCH, C. 2003. Foreign Students in Europe: Between Red Carpet and Red Card. [Note prepared for the] *IILS/ILO Workshop: Temporary Migration, Assessment and Practical Proposals for Overcoming Protection Gaps, 18-19 September, 2003, Geneva*.
<http://www.ilo.org/public/english/bureau/inst/download/kuptsch.pdf>
 (Accessed 15 July 2007)
- KUPTSCH, C. and MARTIN, P. 2006. Foreign S&E Students in France and Germany. [Paper presented at the] *International Competition for S&E Students and Workers, 30-31 March 2006, Washington, D. C.*
- MEYER, J.-B. 2001. Network Approach versus Brain Drain: Lessons from the Diaspora. *International Migration*, 39(5), pp. 91-110.
- ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD). 2006. Education at a Glance 2006. *OECD Indicators*. Paris: OECD.
http://www.oecd.org/document/6/0,3343,en_2825_495609_37344774_1_1_1_1,00.html (Accessed 15 July 2007)

----. 2004. *Internationalisation and Trade in Higher Education. Opportunities and Challenges*. Paris: OECD.

SARASWATI Report. 2004. Pour une stratégie relative à la mobilité internationale des compétences en sciences et technologie. *Le quatre pages*, 1, pp. 1-4.
<http://www.plan.gouv.fr/intranet/upload/publications/documents/4PSaraswati.pdf> (Accessed 15 July 2007)

STIGLITZ, J. E. 2006. *Making Globalization Work*. New York; London: W. W. Norton.

UNESCO/UIS. 2007. *Education Counts: Benchmarking Progress in 19 WEI Countries. World Education Indicators – 2007*. Montreal
<http://www.uis.unesco.org/template/pdf/wei/2007/WEI2007report.pdf>
 Accessed 15 December 2007)

Electronic Sources

<http://www.plan.gouv.fr/intranet/upload/publications/documents/Saraswati-Rapport28092005v2.pdf>

<http://stats.oecd.org/wbos/default.aspx?DatasetCode=RFOREIGN>

<http://www.ambafrance-us.org/atoz/studyinfrance.asp>

<http://www.britishcouncil.org/norway-education-study-advice-ranking-assessment.htm>

<http://www.britishcouncil.org/promotion/pmi.htm>

<http://www.britishcouncil.org/usa-education-advisors-newsletter-2006-december.pdf>

<http://www.chevening.com/>

http://www.consulfrance-atlanta.org/article.php?id_article=863

<http://www.diplomatie.gouv>

http://www.diplomatie.gouv.fr/en/france_159/studying-in-france_2192/address-book_5011/index.html

<http://www.education.gouv>

<http://www.francophonie.org/index.cfm>

<http://www.hero.ac.uk>

<http://www.migrationinformation.org/Feature/display.cfm?ID=486>

Changing Higher Education: Exploring Factors and Impacts

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Various factors are at work for generating changes in higher education. How they act individually and in combination is a matter for further reflection, mainly when considering their philosophical implications. Such a reflection is put forward in what follows.

The first factor taken into consideration by any social system is that related to population, characterized according to number, age layers, health and education status, labour force in production and services and other demographic parameters. By contrast with the ageing tendency of individualist and economically developed societies in Europe and Asia (Japan), the population continues to increase fast in the rest of the world and, thus, the presence of young generations can be felt. Neither the economic field, nor their educational system absorb young people in significant percentages and, thus, youth constitutes a captive and desperate mass, condemned to a closed horizon.

Developed societies cannot ignore this phenomenon for various reasons. Firstly, the starting point of all world crises is a combination of demographic growth with that of unemployment and with the incapacity of poor and low quality school systems, unable to ensure a basic or professional training. Secondly, our era is dominated by wars (identity wars, internal guerrillas, terrorism), waged by a youth frustrated or rejected in their desire to achieve any ideal of an honourable life. The “children of the jihad”, who – in their country – can barely find any technical or professional school, any training support policy (which are mandatory for any state fulfilling its duties), any real support, are ready to join at first call any extremist movement which provides them with a perspective, even the perspective of the supreme sacrifice.

Demographic trends announce a considerable ageing of Europe, which becomes even more obvious when compared to the situation of the United

States of America. Between 2005 and 2030, Europe's population will be practically stagnant, while the population in the USA will increase by sixty-five million. In 2030, one quarter of the European population will be over sixty-five years of age, twice that of those younger than fifteen years. In the USA, the percentage will be one fifth of the population, exceeded by young people's number. For the working age, Europe will lose more than twenty million (six per cent). In the USA, this category will increase by the same number. If we analyze the population of young people, in 2030, Western Europe will have seventy-five persons between fifteen and twenty-four years of age for each 100 persons between fifty-five and sixty-four, while in the USA the ratio will be 120 to 100.

An observer interestingly notes that "European old people are healthy" which "facilitates learning and retention of skills that bring such high returns in the informatics age". However, where are the refresher and vocational training wanted by old students when they can be used again?

Teenage distress. An element neglected by the educational system is the characteristic of the age at which young people go through the educational cycles, particularly between sixteen and twenty years of age. After puberty, with its obvious physical signs and easily identifiable hormonal changes, there comes a period beginning with the age of fourteen years (with a critical point at sixteen years of age) which constitutes the object of an entire medical chapter in psychology and psychiatry¹. The symptoms under analysis are behavioural changes, protest against authority and group search for acceptance, isolation going as far as autism, attempt at self-assertion through stridence and exotism, etc. Our age adds to classic studies new chapters, such as computers mania and the addictive effect of computer games and violence. For the educational system, importance devolves upon the characteristic of avoiding effort and upon the rejection of the knowledge encapsulated in rational formulas (mathematics, for

¹ Reference is made to scientific works such as: BLANZ, B., REMSCHMID, M. and WARENKO, A. 2006. *Psychische Störungen in Kinder und Jugendlichen*. Stuttgart: Schattauer Publishing House; RATTER, M., TAYLOR, E. and HERSOV, L. 1995. *Adolescent Psychiatry*. Oxford: Blackwell Publishing House.

instance), and of the rules prescribed by “adult and manufactured generation”, as Jacques Prévert calls it.

Things absorbed by and attractive to the youth from underdeveloped countries (simple doctrines based on faith and ethnicity) find their correspondents in the developed countries in the domination of the so-called “image culture”, which uses all ICT developments and the “moment culture” (*carpe diem*), a hedonism consolidated by the consumption society.

A 1979 report issued by the Club of Rome considers as essential the following components of learning: (social) participation and anticipation (as a mental feature), as well as the psychological element of concentration capacity. Indeed, by means of these three characteristics one can reconstitute all the weaknesses of the contemporary learning process, visible on a large scale in all developed countries, including Europe: the absence and refusal of participation, omission of anticipation and the severe lack of concentration.

Remedies. There is a practice of directing the human being towards virtue by preaching. Oral persuasion is called upon in order to attempt the instauration of a series of qualities useful to the morals of organized thinking and to the adjustment of socially acceptable behaviour. Parents in particular and professors to a great extent adopt this type of influencing young people; however, its poor efficiency is proven at the level of effects. Nevertheless, an alternative confirmed by practice (centuries old apprenticeship) indicates that a way safer than rhetoric is appealing to activities involving the very virtues targeted. No speech on the merits of punctuality educates this feature essential to civilization better than the school timetable with a strong division of time. Young people with serious behavioural disorder problems found themselves endowed with a deep sense of order after completing their military service. Household activities involving children have been for centuries the forming place for certain basic skills necessary to gain “self-control” and “self-respect”. In numerous systems, the “forming lessons”, the oral exercise for the appropriation of certain basic behaviour and organizational rules, are regarded by children as boring and irrelevant.

If we take a look at the list of defining qualities for today’s youth (generalization is not so ungrounded), we should admit that the only efficient way for their straightening consists in organizing activities in

which they are mandatory requirements. How can we complain about the lack of team spirit in our youth, when the entire learning process is based on individual activities (lessons to be learnt outside classes)? Concentration, rigor, politeness, effort, cooperation, discipline (an obsolete word for libertines), precision, communication are durably assimilated when practiced in activities complementary to desk lessons and even to any mandatory text of the *curriculum*.

Fragmentalist philosophies. In order to better understand a series of imbalances present in contemporary thinking, with decisive consequences on the organization of higher education, we may refer to the concepts of civilizations and cultures. In spite of their traditional definition (confused in the Anglo-Saxon literature; culture as a subchapter of civilization in French texts; and *vice versa* – civilization as a subtitle of culture for Germans, to quote only three illustrative cases of certain concepts which have more than 100 definitions in use), we will note that, if we adopt the criterion of their susceptibility to be transferred and assimilated beyond any barriers, the predominantly universal and unique civilization represents the activities which have results (mathematical theorems, technical networks and scientific results: management and economy, finance and medicine, etc.). This is contrary to those cultures that contain specific values, their own language and history, habits, traditions, beliefs, that define an identity for their own area, in which they remain blocked without high chances of being transferred and assimilated elsewhere.

According to such an approach, civilization is unique (singular), cultures are diverse and multiple (plural). But the two categories can only act together. According to Denis de Rougemont, they constitute “a pair of inseparable opposites”. But this does not spare us the distinction between their structures and internal logic. As the Greek antiquity teaches us, “awareness” is different from “opinion”, “facts” from “values”, “knowledge” from “beliefs”. Civilization is based on transferable knowledge similar to technical and scientific knowledge, while cultures store all the ingredients of people’s specific identities, ensuring an infinite variety of the world. The approach “civilization in the singular” and “cultures in the plural”, although shocking for many of contemporary conventions, draws attention to a necessary balance between the two zones of human activity. The tension existing between the universalistic or

integrating tendency and the fragmentalist one, the analysis of contemporary conflicts (which are, in most cases, related to identity, therefore cultural – ideological or religious – wars) shows how difficult it is to maintain such a balance.

Examining the philosophical trends of our time, including the second half of the last century and the first decade of the new century, we can identify a quite aggressive tendency to proclaim the supremacy of cultures over civilization (the old antithesis spirit/matter). This tendency is manifest in the criticism of homogenizing and unifying science and technology, threatening for human personality and identity and, more than that, the attempt to abolish all of their concepts or basic rules (truth, objectivity, universality). In contemporary postmodernism, scientific assertion is only an opinion which attracts consensus. Considering absolute truth as a science, we assign to science a feature that it cannot have, since it is continuously on a quest for renewal, supplement and change. In the end, confusion will go as far as mistaking the process of scientific creation – similar to the artistic or poetic creation – for the nature of its results which provides a certain defining criterion.

There is much at stake for higher education. How can we attract the youth to study a number of fields that are strongly criticized, starting with their theoretical basis and going further to their evil consequences (mass destruction weapons, wars, hegemonies) at the international level?

In the 1970s, the trend of values' prevalence started to assert itself categorically: "Save the values crushed by facts!". However, today, a few decades later, the age is so "valorizing" that researchers feel the urge to "save the facts crushed by values". Is this an ideological triumph of cultures over civilization, which reached levels difficult to attain, and which relies on knowledge difficult to understand?

However, we are not talking about a competition; it is rather about the re-establishment of a balance, in which the science and technology component of civilization should be cleansed of denigrating labels and spared from simplifying slogans.

Globality is the first major trend, a mega-trend, an anti-fragmentation in international relations, with direct effects on higher education. Largely, it represents covering Earth in a dense network of instantaneous communication, defying geographical demonstrations and the perception

of time and space. Against this technological background, a fruit of the ICT revolution, consolidated relationships were established in the new institution of the age: *the network*, which substitutes hierarchical and vertical classical institutions. The field of the financial activities of economy, production, trade and business were the first beneficiaries; however, another client rapidly fed on such a network: the illicit traffic in arms, people and money, as well as extremist networks, including terrorism. Seen in this light, globalism became the target of contestation, criticism and protest, quite frequent in universities. From a historical point of view, science was and still is globalist through its vocation; proof for this is the worldwide co-operation, beyond geographical barriers and cultural differences of researchers. Also, universities were from the beginning transnational units with intense exchanges of information and persons, students and professors.

The distinctive feature of globality is the engagement of several actors, unlike the “international system” mainly created and used by nation states. We are going through a period of transition from the international system to the global system with many actors, including universities, cities, regions, non-government organizations and professional associations which discover the new cooperation chances provided to them.

No one is surprised by the unprecedented expansion of the study of foreign languages (in the universities from Rome, Chinese is studied by more than 1,000 students, according to 2007 statistics), of study traveling, of international residential courses, reunions and summer schools. University transnationalism entered this century with a clearly defined international character; however, this character is entering now into its global stage. Students, far from losing their national identity, see new opportunities to assert such identity on the global stage and to advertise for its merits and potential.

Regional integration confirm from their very title that they form the second major integrating trend of the contemporary world; sharing the same transnational features as globalism, and having distinctive notes as well. In front of the more than 100 regional groups of states, many being in the stage of incipient forms of cooperation and amiable neighbourhood, Europe stands as a singular example. Europe’s unification is currently the most advanced case of illustrating certain features of globality (free

circulation of persons, goods, money and services) with the historical innovation of “shared sovereignty” whereby the member states preserve their sovereignty and exert it in areas significant for their common interest. Note must be made of the fact that both the origins (European Coal and Steel Community) of more than fifty years ago, and the development (economic community, common market, regulations in the essential fields of production and trade exchanges) provided the European Union with all the elements of a community of interests. In parallel, cultural issues were not subject to an integration process, since they were covered by a few cardinal principles based on respect for diversity: a necessity for mutual acquaintance, mutual respect and for multiplication of contacts and interaction. There is a strong contrast between the huge volume and the juridical work of regulations in the field of civilization (the essential theme of European unification) and the modest approach of cultural themes, treated with all deference for their specificity and variety.

In this respect, the educational system has a dual position. A part of its content is formed by universal knowledge (natural, social, economic sciences, etc.); yet, another part – that of human sciences or of literature and art – is impregnated by deep traditions. Even the organization of any university reflects and practices this tradition. For this reason, the intervention of the integrating organism treated this chapter with caution, placing an emphasis not on the unification of its rules, but on their compatibility, on the harmonization and cooperation effort. However, as far as science and technology are concerned, the integrating note came out in force. These were components of civilization and not of cultures. One of the EU’s instruments which represents a significant contribution to the development of higher education is represented by programs, consisting in the funding of projects, either in the field of research, or in the field of organizing and delivering significant training or debates. This method was included in the functionalist view of European unification, was flexible, and – by means of its selective regulation – promoted cooperation, quality and efficiency of university activities.

The age of knowledge. The age of information has been replaced by a new one: the age of knowledge. Information, after reaching high saturation levels, proved to be in many respects redundant, unnecessary, while

information technology introduced directly pernicious forms, such as computer games.

The “age of knowledge” does not generate a mere label change for the present, since the emerging debates bring significant conceptual clarifications and emphasize changes. From among these clarifications and changes, we select those that have a potentially high impact on higher education.

First, the age of knowledge call for a more careful definition of “knowledge”, underlining their difference from the simple “opinion” or “belief”, highly circulated and brought to the forefront in the information age, to a type of existence, considered as a model, and provided by scientific knowledge. However, such knowledge is not limited to theory; it equally includes experiential results. The balance is redressed between “theoretical” and “experimental”, and the primarily theoretical character of educational system is rectified. Shortly after the emergence of the “age of knowledge”, skills were added, too; consequently, the assertion that is frequently used nowadays is “knowledge and skills”. And, if educational systems systematically neglected an essential issue, that of “skills”.

Second, the age of knowledge is a product of economic thinking that’s has raised knowledge to the rank of primary production factor, combined with work and capital. Human resources were placed on a position of no lesser importance than natural resources. Regardless of the extent to which the classic vision, primarily theoretical, of conveying knowledge through educational systems, was unsettled by the introduction of a utilitarian concept of efficiency, knowledge started to be judged by its applicative effects and, why should we not admit, by its capacity to assist companies in confronting strong global competition. And the question that a young person looking for a job has to answer is no longer “What do you know?”, but “What can you do?”.

Criticism appeared quickly. The dangers related to a „commodification” of the human being regarded only as a raw matter, related to social homogenization and to the obstruction of the full development of the human being, were raised for discussion and created a chapter regarding “the risks of the age of knowledge”, including a consolidation of the consumption society, deeply rooted in trade and dictated by the rule of the market.

There is also a moderate trend that, accepting the eternal vocation of education to form autonomous personalities capable of their own judgments and decisions and of respecting human dignity in all ways possible, considers that the new tendency contains directions and methods that, in addition to being harmless to man's free personality, also help its formation.

The first endogenous factor, having strong external influences, that imposes itself in the analysis of the changes in education is lifelong education. The perishable nature of the knowledge obtained (in technical sciences, validity of such knowledge is reduced to no more than four years) intertwines with the pressing need of professions to resort to an updated stock of knowledge, capable to keep up with the growing rhythm of technologies development and with the growing mobility of the labour force. The concept of lifelong education is preceded by "continuous education" or "permanent education".

International bodies and states were in favour of its introduction, solemnly and unreservedly. However, educational systems did not open to it. Universities reserve almost exclusively post-university courses to their own graduates; no school has classes for adults, all curricula stop at education proper, in a classical and disciplinary view.

Note must be made of the fact that distance learning started to be applied at the same time with the massive introduction of computers, that a new chapter – that of e-learning – was added and that professional mobility compelled the economic sector to amplify refresher courses. However, no university is ready to receive an alumni who, after two or three decades, wishes either to bring his/her knowledge to date, or to explore a new professional or knowledge horizon. Or, lifelong education will only exist at such time when educational systems (professors, manuals, curricula) will be ready to have students of any age and with any demands whatsoever.

In Romania's case, the most beneficial experience in this respect was the introduction of post-university courses, particularly the Master-of-Arts courses, with current subject matters, open to graduates from any faculties (for instance, the Bucharest Academy of Economic Studies holds MA courses in the field of international relations, attended by medical doctors or engineers).

Multidisciplinarity is, after lifelong education, the second major concept with a potential to bring essential modifications to higher education. In the field of research, multidisciplinarity became a mandatory feature. In the beginning, its requirements were met through the creation of teams including researchers of various backgrounds. Then, it was noted that such an approach is insufficient and that one and the same researcher should have a multidisciplinary background. New branches appeared through a merger of disciplines in a scientist's basic background: biochemistry was followed by biophysics, medicine incorporated IT courses, and management training was inserted in engineers' curriculum. However, the imperative requirement of science was more demanding: science reformulated its mission as "problem solver", each problem requiring the knowledge of several disciplines. The definition of "specialty" changed. From a specialist in a discipline, we came to a specialist in an area of problems, with a multidisciplinary background, capable to resort to the defining methods and logics of several disciplines. For example, the sociologists and demographers find out that they do not have enough knowledge of mathematics. Even the study or practice of international affairs reveals the existence of relatively simple mathematical models, such as the theory of games, for the phenomena under analysis, conflict settlement or negotiations. In general, one may lament on the insufficient use of mathematics in other branches, on the absence of courses in or even faculties of applied mathematics. The resources of mathematical models are neglected even in the computer science, and the advancement of artificial intelligence is oriented towards sound, image or routine applications such as data storage or processing and less towards the conversion of the computer into an assistant for thinking and reasoning.

In essence, multidisciplinarity can make sure that one "individual" forms a "team", being able to perform work that previously required a group of specialists in different disciplines, necessitating great efforts in communication, as well as high personnel costs. Although the economic argument has its importance, it is not prevailing. If we take into account the goal of achieving a human personality, the satisfaction of one's self-fulfillment is better achieved by the "master of the problem" rather than the holder of knowledge specific to a single discipline.

Another factor to be added to lifelong education and to multidisciplinary is related to science logics. It is all about the formalist trend, prevailing in mathematics until the first half of the last century. The formalist school considers the axiomatic and deductive method as an ideal model for scientific thinking. Gödel's theorem on the existence of propositions the truth of which cannot be demonstrated in simple axiomatic systems, such as the system of whole numbers, gave rise to as many question marks as Heisenberg's theory on indeterminacy in physics. These mutations did not question the rigor, accuracy and validity of scientific assertions, but diminished their credibility to exhaust an issue, saying everything that can be said about it.

Emphasis is now being placed on the inductive parallel practices of the experimental approach and the calculation of probabilities bringing random and error to the forefront.

Formalism, however, generated a resistant method of teaching science in higher education. Knowledge meant an assertion demonstrated by means of logical procedures resulting from the premises contained by axioms. Science had the aspect of exact and concise pills, summarizing the bare necessities of knowledge. In spite of the advantages of dimensional improvement, from the point of view of the psychology of learning, the method of thematic concentration was one of the most difficult ones in terms of understanding and appropriation by the students. The most efficient method remained the student's identification with the experience of obtaining results, with the involvement of neglected factors such as purpose, motivation, imagination, rejected alternatives, passion for research. In this manner, the advantage of a concentrated and impeccably packed product resulted in a decrease of the personal involvement of the human being that deducts meaning from the context of assertions, and not only from their text. The absence of historical narration from the teaching system of knowledge, particularly scientific or technical knowledge, is obvious. Also absent are the opportunities to become acquainted with processes related to the stages of obtaining results, trial and error, illusions and real success.

Modularity. The processes of change in higher education are centered on the organization of the curriculum. No other factor may compete in terms of importance and effects with the way in which the curriculum is designed.

Currently, all it does is to adopt the scheme of classifying sciences (and, implicitly, their knowledge). It is a disciplinary scheme that cannot be imputed to educational systems, where it is imported from the field of sciences. Such a scheme is dull and inflexible; it includes, indeed, subdivisions (mathematics is divided in geometry, algebra, analysis, etc.), but such subdivisions are also considerable in size, genuine mountains to a student, challenged to climb them. In fact, disciplines and the branches of their classical divisions can be sectioned in constitutive “blocks” or “bricks” with reasonable dimensions. We quote the matrix calculus essential for electronics, construction, demographics, sociology, probabilities, finite mathematics, etc.

A module can contain a text of twenty to thirty pages, followed by approximately twenty pages of applications, bibliography, reference to other related modules, etc.

The consequences of such a scheme on higher education are considerable. The level of rating points is lowered to courses shorter than one year (trimester or semester, at most). Portions lesser than one chapter of a course are targeted (e.g., Plane Analytical Geometry, Conics). Interdisciplinarity intervenes by indicating connections with disciplines belonging to distinct branches, either as additional sources or as application topics. Distant learning is facilitated through the conveyance of portions that are easier to assimilate (see Open University fascicles where twelve units are provided for a topic such as Biology Bases of Behaviour, while one to two units form a fascicle – for new modules).

Modularization is a process that can benefit from all the advantages of ICT. Classification of sciences into thousands of interconnected modules cannot be achieved in two dimensions (like a graph on paper); however, it is feasible in multiple dimensions, using the hypertext technique. Orientation in this MultiNet can only be performed by computer guidance programmes. Also the computer, through a special programme, can recommend to a person the sequence of modules to study for the exercise of a profession.

Innovation and creativity. No one objected to the advantages of the final, formalized aspect of knowledge and to the necessity to use it in learning. However, reality has proven that persons exclusively educated in this manner did not meet the creativity requirement imposed by practical life.

Innovation and creativity became imperative once the age of knowledge started to be defined, centered on the capacity to innovate. In the United Kingdom, the classical name of the Research and Development programmes was replaced with that of 'Innovation'. In China, the entire national programme for education reform is under the mark of testing 'creativity'. Nonetheless, no exact algorithm or set of infallible actions leading to the obtainment of such a feature can be formulated. Still, there are fields in which creativity is intensely cultivated, with specific methods and practices. One of them is that of arts: music, dance, and painting. The second one is that of crafts, the production of works of art such as weaving and ceramics. The third one is that of performance achievement, in sports as well as in mathematics. The joining of these two performance fields seems strange. But they have in common long processes of repetitive and rigorous practicing of written operations. Going over the threshold of 1,000, then of 2,000 and 3,000 of solved problems, the first simple ones being followed by others with a growing complexity, provides skills to the future researcher. Why wouldn't laboratory classes be as important as ordinary classes? Doesn't the capacity of artistic creation go through visiting museums and exhibitions, through consulting albums in the library or through the hours spent in a workshop?

The classical explanation that assigns a "talent" unevenly spread among population, that may lead to the more infrequent and mysterious "genius", does not satisfy today's educators, especially that they were warned by Edison that invention is "ten per cent inspiration and ninety per cent perspiration". We are witnessing a come-back of the premise according to which talent and vocation may be educated, in an adequate context for development. The ingredient missing from education but present in the resources of creativity is imagination. It is a serious prejudice to believe that scientific research requires less imagination than poetic work. The rectification was made through the appearance of science-fiction literature, although anticipation already existed in the work of Jules Verne. This a feature typical specific to young ages, prevailing in the child with a thirst for stories, who goes numb by entering a world of real facts and knowledge that are rationally obtained and presented. In the new configuration which includes the "creativity" objective, education will have to take into account the preservation until older ages of this valuable feature of human intellect.

The *skill* is another re-discovery, included in the vision of the age of knowledge, which exceeds the patterns of formalized knowledge. Skill can also be empirically educated, through a long and persistent repetition. It is formed under the supervision of a master, whose movements are observed and imitated. Apprenticeship was the prevailing educational system until the dawn of modernity, when its place was taken by systemized education. The chances to obtain skills and to exercise them diminish once students enter higher education, where skills are or are assumed to be secondary.

On a large scale, students prove a lack of skills specific to intellectual work: how to read or study a book, how to prepare documentation, how to draft a scientific communication (reference to bibliography), what is a text footnote, how to draft and prepare cards, etc. Features of the intellectual work implying skill formation remain undeveloped: order, respect for facts and details, perseverance, continuous preoccupation, long-term thinking and, above all, the effort and purpose definition. Features of today's thinking, which cultivates the quest for immediate pleasure are directly oriented against effort and establishment of long-term objectives. Immediately following are the poor abilities in drafting official or scientific-related letters, in finding partners, in team forming and working. We must admit that the vast literature regarding communication determined the current introduction of courses on communication (even in special faculties), which present interest to scholarly students.

In the end, the skills essential for education are those required by the exercise of a profession and they should be included in the curriculum of the preparation for such profession. Polytechnics and Medical Schools are the most professionalized among higher education units. Clinical learning is a combination between knowledge and the ability to observe and evaluate sick persons, while technical learning educates the ability to elaborate and draw designs.

However, those students that are to be teachers, clerks, economists (finance, trade, production), legal advisers (judges, lawyers), entrepreneurs and managers, politicians, diplomats, writers, journalists find little support in their curricula for the obtainment of specific skills.

Learning and work. In the premodern age, learning and work, connected with the system of apprenticeship were performed concomitantly. They were separated, remaining together only for manual professions, which did

not require a theoretical background. In this case as well, professional and technical schools maintained the relationship, which remained in force for on-the-job training. However, work and practical activities have the property to provide learning with a space favourable for the development of skills and empirical knowledge. This is why higher education maintained them in evolved forms of “practical stages”, and – should they be absent from the extended curricula – were organized by companies as a stage prior to employment.

The educational value of practical activities was not overlooked by a series of colleges from the USA and other countries; they provided in their forms the requirement, in the form of a certificate, for their candidates to attend summer schools or practical activities. Still, the importance of work in the context of education requires a much more organized approach. It implies a reform on a larger scale, based on new legislation, which – in essence – includes:

- 1) First, the consideration of the age threshold of sixteen years, when the first vocation is formed, as marking the age at which students, ending a mandatory general education stage, can choose between beginning to work or continuing to study. From this point on, an individual's life consists in alternations between work and learning stages, until the end of life, accruing “rating points” on one plan or the other. If his or her employee status is clearly defined through the compensation provided by the employer, all that the society offers to the learning effort is distributed in facilities extended throughout his or her life (lifelong education). The right to learning and work is realized under a legal and financial system.
- 2) Second, the student, who chooses higher education at this age is greeted by a personal curriculum of his choice (assisted by qualified assistance) made according to the aspired profession. If the previous point offers a frame for the operation of lifelong education, this one responds to the imperative of multidisciplinary. Knowledge is grouped into modules, containing knowledge from one discipline or another, but both their level, as well as their content, make them susceptible to combination with modules from other fields, considered useful for the exercise of one's profession. We revert to

the example invoked above: not all students are called to study algebra, but numerous students introduce matrix calculus in their curricula, which is much more accessible and important in dozens of technical or economic and social activities. In this way it appears in the specific manner of combining modules in the singular programme of his/her formation.

- 3) Third, such a system does not change the knowledge called upon, always refreshed by the fast development of natural or social and human sciences. However, the change is radical at the level of modification regarding old functions adapted to the new organization. The professor becomes a tutor, the lessons become seminars, the class becomes a laboratory, and the student turns from a learning object into a learning subject and an architect of his/her own active life.

Professionalism. The proposed scheme is hardly acceptable, even to the most innovative of current reformists. Conservatism and even the inertia of the current system, more tributary to tradition than any other state system, are not auspicious to a change of such amplitude. More than that, this system based on disciplines uses the scheme for classifying sciences that science has not modified yet.

Indeed, the first characteristic of this system is disciplinarity. Disciplines are the functional units of the educational system. They give names to faculties, departments and professors' specialties; the curricula are a succession of names of disciplines; the conflicts between professors and institutions are generated by their fight over a more important position, more classes, and more courses. Diplomas and doctorates confirm competence within a discipline. Even new and vigorous topics such as the study of international relations only exist as subtitles within political, economical, juridical or historical sciences.

One may believe that at the same time with the dawn of multidisciplinary, classical disciplines will retreat. But what can take their place as a criterion for knowledge delimitation and existence? The answer is multidisciplinary practical activities constituted as *professions*. Professionalism is a term respected for the seriousness, solidarity and competence involved by it, but its applicative and dull note indisposed

science theoreticians. Nevertheless, it comes back as an antidote to the *invading politicking* and to the dilettantism of a culture of superficial image and perpetual leisure.

Profession provides the most intelligible and useful basis for joining in a distinct direction the knowledge, skills, aspiration for self-fulfillment and creative horizon, for self assertion purposes. This is why the term should not trigger any reserves when it regains its rights within the primary purposes of education.

Labour market. There are two positions with regard to the influence of market factors on education: one is to denounce the dangers that the requirements of a market conceived and practiced for commercial merchandise should dictate the activity of certain institutions dedicated to the knowledge and explanation of scientific truth or to the perpetuation of moral values; another one is that the disregard of such markets leads to the isolation, sterility and disregard of the society's interests. Both points of view may find arguments and supporters, if they did not take into account the merits and entitlement of each point of view.

The market is the place where free competition, supply and demand games take place. These forces and factors operate in other fields as well, starting with the field of democratic politics (elections) and even the field of scientific research (contracts and funding). The educational system was and remains competitive, a genuine sport of intelligence and learning, with prizes and without compensation. To continue competition in terms of job selecting and finding is not alien to the basic philosophy of education.

All markets (starting with the commercial one) are exposed to vitiation and abuse. Free game is spoiled by monopolies, pressures, illicit trafficking, etc. The large market is intoxicated by manipulative advertising, fraud, pressure and illegal blows applied to competition. For the educational system and its subjects, dangers come from a market of ideas which rewards violence, nihilism, anarchy, hedonism, etc. which affect large groups of young people.

As for the rest, the job market cannot assist higher education, signalling a tension between demand and supply. In other words, it identifies the points in which the expectations of employers from the state or private sector, industry or services, from the intellectual field or from the field predominantly based on skills cannot find an answer in the degree, quality

or training relevance of the graduates provided by higher education. The market indicates with high accuracy the expansion fields as compared to the restraining fields, *e.g.*, informatics versus mining.

Science is more than a commodity. It is a stock of knowledge, requiring care and maintenance, vital for the existence of a company, responding to a basic need and a public interest. The survival of any society depends on its degree of training and cultivation. This makes science a public asset, liable to be guarded by a policy, established by laws and monitored by public management.

Subject matters for further study. The thoughts on the exogenous tendencies that primarily influence any possible and desirable changes in higher education invite a series of current subject matters for further study:

1. What is the relationship between the external impact and the initiatives of the educational system and how can resources of the latter be activated?
2. How does personal effort preserve itself in a hedonist civilization of image?
3. Distance and closeness between professor and student;
4. New funding sources for higher education institutions;
5. What lessons can be learned from the existing forms of financial support for students?
6. Harmonization of professionalism with traditional disciplinarity;
7. Efficacy of the development forms of the innovative spirit.

Short and Medium Term Institutional Measures. Although the evolution process of higher education cannot be addressed in brief, a large number of changes can be made to the current functions of its units:

1. The enlargement of the number of *optional courses* and acknowledgement of results in the students' personal rating budget;
2. The inclusion in the curriculum of a series of courses on the knowledge of related disciplines, even if such disciplines pertain to other faculties or departments;

3. Cooperation between departments in multidisciplinary subject matters (common debates or courses) in the idea that the walls separating them or the conflicts maintained by them are sometimes more intense than their relations with the exterior;
4. The strengthening of teamwork at students and adequate prize-granting systems;
5. Encouragement of the formation of associations of alumni of higher education institutions and their involvement in their management (members of the enlarged board or of a special committee);
6. The formation of an external circle of partners (of the faculty or university) from economic, administrative or cultural fields. Adequate forms of statutes and cooperation;
7. A growing attention to seminar classes, abusively used as a repetitive comment on the course and their conversion into the role of applicative support and active dialogue;
8. Research organization (professors and students) in the form of projects, an active concept located at the same importance level as the actual course. Provision of external partners from the field of research institutions;
9. The growing profiling of professors and teachers as tutor and mentors (introduction of projects, practical works and individual guidance);
10. The improvement of the quality of written courses through historical insertions and, particularly through attention to applicative aspects, and through the enlargement and specification of professional horizon;
11. The organization of series of conferences on current issues of science, of social changes and prospective research with external trainers (professors' guests from other countries, personalities of scientific, economic and cultural life);
12. A fair balance between scientific knowledge (enlarged with perspectives on the event and skills) and the scientific ethos defined

by the consecrated values of honesty, respect for facts, service to society's needs, exactness, accuracy, effort, modesty and dedication.

In conclusion, the ideas elaborated in this paper shall briefly be summarized below. A double modification of disciplinarity is expected.

Modules become the basic unit in knowledge presentation and appropriation. They are the combinations, in individualized multidisciplinary curricula, with different levels adjusted to interests and regardless of age.

Professions become orientation points for the efforts made by institutions and individuals.

At the same time, knowledge is accompanied by skills, theory is accompanied by experience, study is accompanied by real work, and the professor discovers its vocation as a tutor and project leader. The university is not composed as much of the training classes, as of laboratories and workshops where students are appreciated in terms of what they can do and particularly in terms of their innovative capacity. The role of values prevails: a study on human formation parallel, if not identical, to the scientific one; a student is formed as a result of human interaction within research teams, face to face with the living model of Masters and in direct contact with the ambiance of reality.

References

- BLOOM, A. 1987. *The Closing of the American Mind*. New York: Simon and Schuster.
- BOTKIN, J., ELMANDJIA, M. and MALITA, M. 1979. *No Limits to Learning. Bridging the Human Gap*. A Report to the Club of Rome. Oxford, New York: Pergamon Press.
- BOUD, D. and SOLOMON, N. (eds). 2001. *Work Based Learning: A New Higher Education*. Milton-Keynes: Open University Press.
- BRIDGES, D. 2000. Back to the Future. The Higher Education: Curriculum in the XX Century. *Cambridge Journal of Education*, 30(1), pp. 37-55.
- BUDGEN, D., MOTOYO, K. and EVANS, P. (eds). 2000. *Motivating Students for Lifelong Learning in the New Economy*. Paris: OECD.

- DELORS, J. 1998. *Learning: The Treasure Within*. Report to UNESCO of the International Commission on Education for the XXI Century. Paris: UNESCO.
- DORE, R. P. 1976. *The Diploma Disease: Qualification and Development*. London: Allen and Unwin.
- DRUCKER, P. 1985. *Innovation and Entrepreneurship*. New York: Harper and Row.
- EDWARDS, R. 1998. *Changing Places: Flexibility, Lifelong Learning and a Learning Society*. London: Routledge.
- EUROPEAN COMMISSION. 2000. *A Memorandum on Lifelong Learning*. Brussels.
<http://ec.europa.eu/education/policies/lif/life/memoen.pdf> (Accessed 10 March 2008)
- EVEN, F., BERDROW, I. and RUSH, J. 1998. *The Bases of Competence: Skills for Lifelong Learning and Employability*. San Francisco: Jossey-Bass Publishers.
- GIARINI, O. and MALITZA, M. 2002. *The Double Helix of Learning and Work*. A Report to the Club of Rome. Bucharest: UNESCO-CEPES.
- MASON, R. and HUSKED, S. 1997. *Cooperative Occupational Education and Work Experience in the Curriculum*. Danville, Illinois: Interstate Publishers.
- ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT-CENTRE FOR EDUCATIONAL RESEARCH AND INNOVATION (OECD-CERI). 1978. *Alternation between Work and Education: A Study of Educational Leave of Absence at Enterprise Level*. Paris: OECD.
- DE PERETTI, A., BONIFACE, J. et LEGRAND, J-A. 1998. *Encyclopédie de l'évaluation en formation et en l'éducation*. Paris: ESF.
- PIAGET, J. 1973. *To Understand Is to Invent: The Future of Education*. New York: Grossman.
- SADLAK, J. and CAI, L. N. (eds). 2007. *The World-Class University and Ranking: Aiming Beyond Status*. Bucharest: UNESCO- CEPES, Cluj-Napoca: Presa Universitară Clujeană.
- SCHAUBLE, L. and GLASER, R. (eds). *Innovation in Learning. New Environments for Education*. Mahwah, NJ: Erlbaum.
- TAPSCOTT, D. 1988. *Growing Up Digital: The Rise of the Net Generation*. New York: McGraw-Hill.
- TORSTEN, H. 2000. Education by the Year 2025. *Millennium III*, Winter 1999-2000, pp. 111-117.
- WARWICK, D. 1998. *Teaching and Learning Through Modules*. Oxford: Blackwell.

PART TWO

**COUNTRY DEVELOPMENTS
AND CHALLENGES:
WAYS FORWARD TO DESIGNING
NEW HIGHER EDUCATION POLICIES**

Dynamics of Demographic and Higher Education Developments in Estonia¹

Krista LOOGMA, Kalev KATUS, Allan PUUR and Kristel SIILAK

1. The National Context of Higher Education

1.1. Short description of the Estonian education system: current situation

The structure of Estonian education system is based on the International Standard Classification of Education ISCED 97, which determines three basic levels of formal education and sublevels (Annex 1).

0 level:

pre-primary education

I level:

Basic education, lower level, (grades 1-6) – 1

Basic education, upper level, (grades 7-9) – 2A

II level, secondary level:

General secondary education – 3A

Vocational secondary education after basic education – 3B

Vocational secondary education after secondary general education – 4B

III level (tertiary education):

Bachelors' study – 5A

Master's' study, main study in medicine, one-year pedagogical training, integrated bachelor and master courses – 5A

Applied higher education, diploma courses – 5B

Doctors' study – 6A

¹ The article is prepared by the Institute of Educational Research and Inter-universities Institute of Estonian Demography (EKDK) of Tallinn University. The authors would like to thank many people assisting them in the compiling of the report for their valuable contribution: analysts from the Analysis Department of MoER Ms. Priit Laanoja, Ms. Eve Tõnisson, Ms. Margus Harak; Prof. Mati Heidmets, Prof. Olav Aarna, Ms. Heli Aru, Mr. Andres Pung, Ms. Maiki Udam.

In statistics, the terms „higher education” and „tertiary education” are differentiated and following definitions have been adopted. *Tertiary education* includes: applied higher education + academic higher education + professional secondary education based on secondary education. *Higher education (HE)* has binary structure: **I – applied higher education** (applied into the legislation in 2002, consists applied higher education courses + professional higher education courses + diploma courses) + **II – academic higher education**. Thus tertiary education is broader by professional secondary education based on secondary education (Since 2002, enrolment to vocational higher education and diploma studies stopped and was replaced by a combination of these, applied higher education studies) (Higher Education, 1993-2003).

In Estonia, obligatory enrolment in schools is at the age of seven. Providing opportunities for children to receive pre-education is the legal responsibility of local governments and parents. Compulsory schooling lasts nine years until the end of basic school (grades 1 – 9) or until the age of seventeen (even if not graduated from basic school).

After graduation from basic school, young people can go on either to upper secondary general education (*Gymnasium*) or to vocational secondary education, both lasting three years (grades 10-12). At secondary education level there is a strong dominance of general education in Estonia. On completion of basic education approximately seventy-five per cent of pupils go on to upper secondary general (*Gymnasium*) and only twenty-five per cent to vocational secondary. In 2004/05 the share of basic school graduates that continued their studies on the VET track was twenty-nine per cent (OECD Thematic Review 2006).

After graduation from upper secondary general schools, the majority of students enter higher education institutions (university academic and professional, or non-university applied higher education programmes) and post-secondary VET schools. According to SA Innove and Estonian Ministry of Education and Science (Mägi, 2005), in 2004 the share of students moving after graduating general secondary schools into university-type higher education was sixty-six per cent and the share of

students moving into the post-secondary vocational education was 22.9 per cent.

Estonia's VET system is a school-based system, aimed at providing theoretical knowledge followed by primary practice in school workshops and later practice in companies. The Vocational Education Institutions Act (adopted in 1998) stipulated two levels of VET in Estonia: 1) vocational secondary education (ISCED 3B); and 2) vocational higher education (ISCED 5B).

A new pathway ("basic VET" – VET programmes for people who do not have basic education and who have exceeded the age of compulsory school attendance) was opened in 2001 (providing both work-related skills and to motivate for further studies) as well as for *Gymnasium* students (in order to acquire secondary VET in a shorter time). As well, VET programmes based on basic education without acquiring upper secondary education has been open 2006/07.

The objective of a VET programme **after basic school** (ISCED 3B) is to prepare skilled workers or to prepare people for studies at the higher vocational level. The objective of a VET programme **after secondary general school** (ISCED 3/4B) is to prepare students for more technically advanced work, service personnel and office administrators, as well as to prepare for studies at applied higher education. Upper secondary school graduates can complete this level in less time (1-2.5 years) and in some fields entry to a VET programme is possible only for *Gymnasium* graduates (e.g., medicine, finance). "Post-secondary" type of vocational education (for graduates from secondary general education, usually ISCED 4B) has been defined within the category of "secondary vocational education".

The entrance requirement to the secondary vocational education is completed basic education or upper secondary general education, and the minimum age of enrolment is fifteen to sixteen years. The majority of secondary VET students are in the age range sixteen to twenty years (those starting after basic education are mainly between sixteen and eighteen, and those starting after graduation from *Gymnasium*, eighteen

to twenty years). Programmes last at least three years and at the end of the curriculum, students have to pass school-leaving examinations including national vocational examinations.² Successful students receive the secondary vocational education certificate, which gives access to the labour market and higher vocational education (since October 2002 applied higher education). Students can also pass voluntarily the national general examinations, which provide access to university type of higher education.

After graduation from vocational education schools the majority of young people are entering the labour market and only a small proportion continues studies at higher education level (Zelloth, 2003; OECD, 2006). The share of students continuing higher education studies after graduating secondary vocational education has varied from 3,5 per cent (2001) to 10,8 per cent (2004) (Mägi, 2005).

In addition to the one qualification level offered so far, new qualification levels have been introduced in order to make transfers in the education system more flexible and to reduce the number of drop-outs. Another important policy goal for VET is to ease the transfer from VET to higher education by providing one year extra in order to prepare for state examinations.

Access to higher education (HE) is open to all who have fulfilled the requirements of secondary education. There are two general requirements for access to higher education, a secondary school leaving certificate and a State Examination Certificate. Specific requirements (number of entrance examinations, average grade in a given subject, etc.) depend on the institutions themselves. Graduates from VET schools who would like to continue at university level must pass the national examination for secondary general schools (*Gymnasium*).

² Since October 2002 there are no national vocational examinations. There are only school graduation examinations. In spring 2002, for the first time the graduation examinations were combined with the qualification examinations in two VET schools and the first qualification certificates were issued for the graduates who had passed the examinations.

1.2. Developments of the higher education system after gaining the independence in 1991³

During Soviet times the content of curricula and arrangement of higher education in Estonia as in all parts of Soviet Union was under ideological control of the central power of the Soviet Union. In the structure of curricula of higher education the natural and technical sciences strongly predominated whereas social sciences were underrepresented or even missing at all (like sociology, political sciences). The research activities generally were centralized under the authority of the Academy of Sciences and partly separated from the HE system.

Policy development

During the years of independence of the Republic of Estonia several significant changes took place in the field of higher education. In the report for OECD (OECD Thematic Review 2006) the main policy development phases have been pointed out as follows:

- 1) 1989-1995 – Breaking free from the Soviet system and building up a new legal framework.

During this period of time, the process of de-ideologization of curricula and installing democratic principles and processes in higher education institutions (HEIs) were introduced. At the same time, restructuring of the system of university studies (two-year Master's and four-year doctorate were introduced) took place. The University Act (passed the Parliament 1995), granted broad autonomy to universities providing the basis for the adoption of the government decree "The Standard of Higher Education" (adopted in 1996). The decree regulates education licences and accreditation, student workload-based, accumulative credit point system. In Estonia, one credit point corresponds to forty hours of study performed by a student in a week.

³ The text of this part of the article is largely based on the OECD Thematic Review of Tertiary Education. *Country Background Report for Estonia*. Estonian Ministry of Education and Research, November 2006.

Although the *Private Education Institutions Act* passed on in 1998, the emergence of private higher education institutions began already early in 1990s. In this period, research institutes, previously working in the system of Academy of Sciences / as institutes of Academy of Sciences, were integrated into universities. At the same time, the state funding system for research was built up.

2) 1996-1999 – Expansion of the higher education sector

Due to the liberal policies introduced regarding the opening of new study programmes both for public universities and private institutions, and allowing private institutions, the provision of higher education expanded rapidly. On average, the increase in admitted students per academic year was eighteen per cent. In absolute numbers, in this period the increase was concentrated in the university sector – the number of admitted students almost doubled, from 5,465 (1996/1997) to 10,219 (1999/2000). In relative terms, the largest increases in admission were in private universities (336 per cent) and state vocational schools (286 per cent). The expansion was also facilitated in the public higher education sector⁴ by introducing programmes in selected vocational education schools. At the same time, the systematic regionalization of higher education began by establishing regional colleges in smaller towns. Expansion in the university sector (both public and private) was also caused by significant growth of the share of paid education in higher education, through charging tuition fees.

In 1996 the Accreditation Centre for administrating the quality control system for higher education was established on behalf of the Ministry of Education and Research (MoER). By now all (regardless of the legal status of the HEIs) need to pass external assessment for state recognition.

⁴ State funded HE institutions - public universities, state owned professional higher education institutions and VET schools.

In 1998, after the passing the Professional Higher Education Institutions Act in the Parliament the legislative basis for a binary structure of the HE sector was completed.

- 3) 2000-2004 – The next wave of reforms: higher education reform plan 2002

Under the higher education reform plan unified regulations for all curricula in a non-university higher education sector were envisaged, in order to improve the transparency of the higher education system. As a result of legal amendments to the educational Acts in June 2002, enrolment in different higher vocational education programmes (post secondary level – 5B) was abolished and replaced by the single system of applied higher education. Thus, since 2002 the Estonian higher education system consists of two parts – academic and applied.

Following the Bologna Declaration ideology, a two-tier system was introduced (2002/03) for specialist qualification. The changes were adopted through the University Act, and as such were compulsory for all universities to follow. Other steps, related to the “Bologna agenda”, were approved in the legislation (state funded mobility schemes for students and young faculty members in 2003, Diploma Supplement in 2003, correspondence of qualifications awarded under different qualification systems in 2004, legalising the basis for recognition of foreign qualifications in 2005).

The equal access issue to higher education has not been high on the political agenda since the expansion of the sector, but, based on private money, has permitted the needs and interests of different groups to be accommodated.

Provision of tuition-free study places for the best students, together with a state guaranteed study loan system, is still considered to be the most acceptable instrument for creating equal study opportunities.

In 2004, a new commission was created to formulate the higher education strategy for Estonia for 2006-2015. The strategy was approved in Parliament in November 2006. The new strategy (Estonian Higher Education Strategy, 2006–2015) envisages six strategic goals for the next developments in higher education in 2006-

2015: 1) bring the preferences of students closer to the needs of society; 2) quality improvement and assurance in higher education; 3) participation in Europe-wide academic cooperation; 4) satisfy the needs of Estonian society for a highly qualified workforce with preferential development of studies in the natural and exact sciences and in technology; 5) continuation and development of Estonian-centred higher education in the European open education space; 6) ensure the funding close to the OECD average per student, simultaneously preserving an access to higher education comparable to OECD countries.

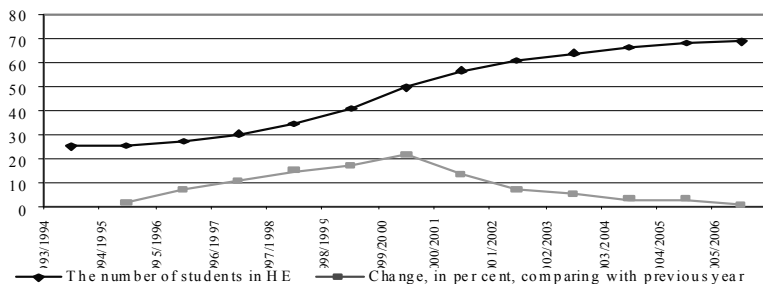
Extensive growth in the higher education sector

The higher education sector has experienced a tremendous growth in demand and supply since mid-nineties. The growth meant more students as well as more institutions providing higher education programmes. These tendencies have been accompanied by changes in the age and gender structure of the higher education students.

a) The Growth of the number of students

One of the most important trends has been the essential growth of the enrolment in higher education, especially during the second half of the nineties. From 1993 to 2004 the number of students increased by 2.6 times (from 25,064 to 67,760). Since 2001/02 the growth has considerably slowed down, being the slowest in recent years (below one per cent) (Figure 1).

Figure 1. The growth in enrolment of students in HE, 1993-2006



Source: Tina and Tõnisson, 2006.

The growth of the number of students in higher education has been more intensive in the academic track compared to the applied one. From the academic year 1999/2000 to 2005/2006 the number of students in the applied track has grown by 3,786 students while in the academic track the number increased by 14,877 students.

There have been different external general factors influencing the significant growth in numbers of students in Estonia (such as the overall educational expansion in all developed countries). In the Estonian context the growth was facilitated by two main particular factors: *first*, the private sector expansion in higher education, *i.e.*, the growth in the number of private HELs together with the introduction of paid education at public universities and also the development of Open universities focusing on lifelong learning. *Second*, the reform of applied higher education, *i.e.*, upgrading former polytechnics to the higher education level as professional higher education institutions and introducing new institutional types where programmes can be provided (VET schools, private institutions) (Higher education 1993-2003; 2004).

The number of institutions providing higher education programmes has increased from six universities in 1990/91 to thirty-nine institutions (among them universities, professional higher education institutions and VET schools). The overall number of institutions is now decreasing due to several mergers and closings, but also restructuring within public sector. The highest number of institutions the country has had was in 2001/02 and 2002/03 when the respective figure was forty-nine.

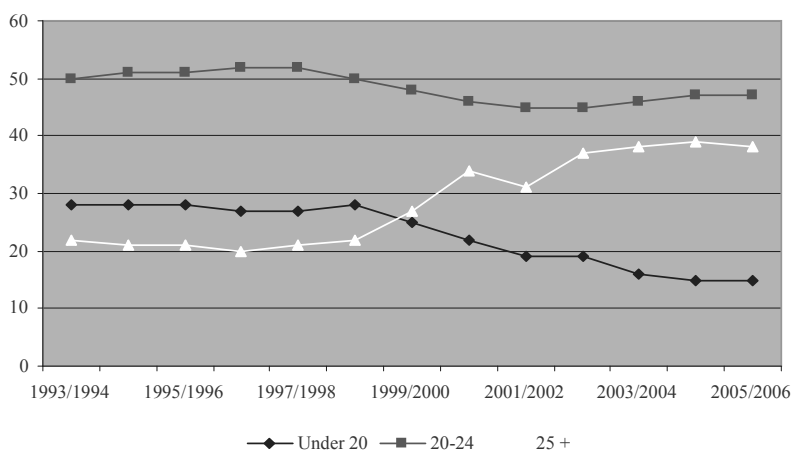
The share of students studying at state-commissioned study places fell below fifty per cent first time in 2003 (Higher education 1993-2003; 2004). In 2005, fifty-four per cent of students fully paid for their studies themselves. State funding to higher education in recent years has been calculated in such a manner as to maintain fee-free study places for at least fifty per cent of the graduates of secondary schools. The system of state-commissioned higher education is not sufficiently taking into account the academic achievements and the economic situation of students (OECD Thematic Review 2006).

b) Changes in the structure of the student body (Figure 2).

Significant changes have taken place in the structure of students. From the demographic point of view the changes in the age and gender structure of the students can be considered as the most important.

The age structure of the student body has changed considerably, it has 'aged'. There is a significant decline in younger and an increase in older age groups. There can be different reasons for this development. The economic situation in the 1980s and first half of the nineties did not allow the up take of higher education studies and many young people postponed their studies. In addition, the study period tends to be longer because students are trying to combine their work and studies. There are also more different (flexible) possibilities to continue one's studies in higher education (Open University programmes, programmes in applied higher education, etc).

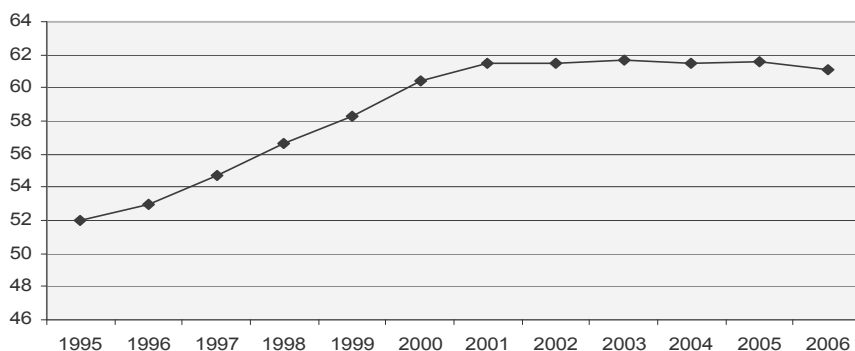
Figure 2. Change of the age structure of the students in Higher Education



Source: Tina and Tönisson, 2006.

The women's share in the structure of the students has risen. While in 1993 there was no considerable gender difference in the student body, since 2001 there is a considerable gender difference in favour of women.

Figure 3. Share of female students in HE, 1995 – 2006



Source: Statistical Office of Estonia.

The growth of the share of women has been the fastest in years 1995-2001. Since 2001 the gender balance has more or less stabilised.

2. Demographic and Education Developments

2.1. Overview of the demographic developments in Estonia

Estonia, the northernmost of the three Baltic countries, has an area of 45,215 square kilometres. Estonian people have lived on the present territory for about 10,000 years, so Estonia may be considered one of the oldest nations in Europe. At the beginning of the thirteenth century, the country lost its independence after twenty years of fighting against combined attacks by Germans, Danes, Swedes, and Russians. Since then, Estonia began to serve as a dividing line between the Roman Catholic and Orthodox worlds, a division, which has maintained its importance until today. Although the geopolitical dividing line was moved westwards due to the victory of Russia in the Northern War (1700-1721), the Baltic provinces secured substantial autonomy under the Russian Empire.

After being ruled by various powers for nearly 700 years, Estonia declared its independence on February 24, 1918. In the Independence War (1918-1920) the nation defended itself against the Russian Federation as

well as German military forces. During the Second World War, Estonia fell under Soviet occupation for the first time in 1940. The German occupation (1941-1944) was followed by the second Soviet occupation, which lasted for almost fifty years. In 1944, the Soviet Union unilaterally established new borders, transferring parts of Estonia to the Russian Federation. The new regime introduced a forceful re-arrangement of the entire societal organisation, implemented by means of terror and mass deportations. In contrast to Central Europe, the loss of statehood in Estonia involved not only the absence of independent policies but also the dismantling of national institutions. Estonia regained its independence in 1991 and since then has been working to re-establish civil society, rebuild the institutional framework, and restore its position in the international community.

The timing of the demographic transition

The demographic transition is a universal process. However, its timing has varied to a large extent among nations. This different timing has had a tremendous impact on the human and political development of European nations, and is still influential in the modern world. Since at least the eighteenth century, Estonia formed the easternmost area of the European marriage pattern, characterised by relatively late marriages and a high proportion of people who never get married (Palli, 2004).

In Estonia, the beginning of the demographic transition can be traced back to the mid-nineteenth century. Judging by the spread of the parity-specific family limitation and other characteristics, the emergence of a modern type of population reproduction in Estonia has been synchronous with that in Northern and Western European countries (Katus, 1994). For example, in the 1880s, the countries with the lowest overall fertility such as Sweden, Switzerland, and Norway demonstrated up to twenty per cent higher marital fertility compared to Estonia. During the same period, France – the leading nation in the fertility transition – was the only other European country having both an overall and marital fertility rate lower than that of Estonia. Belonging to the pioneering nations in the fertility transition, Estonia had already reached under-replacement fertility and a slow turnover of generations by the 1920s (Katus, 1989).

Mortality transition progressed alongside with fertility decline: the male life expectancy increased from 41.9 years in 1897 (the earliest census-based

life-table) to 53.1 in 1934, the corresponding female figures being 45.5 and 59.6 years, respectively. The endogenous causes of death had already taken the lead by the 1930s (Katus, 2000). Although Estonia did not belong to the forerunners of the mortality transition as it had in fertility development, in the mid-twentieth century the country was characterised by one of the most advanced levels of life expectancy in the Central Europe (Krumins, 1990). When compared to Northern and Western Europe, Estonia lagged behind primarily in the decrease of infant mortality.

In terms of population reproduction, the demographic transition in Estonia followed the so-called French model. Mortality and fertility declined practically simultaneously and, as a result, population increase appeared markedly small compared to neighbouring countries. Following this decline in population fertility and mortality, Estonia entered a stage of mobility transition in the last quarter of the nineteenth century. During that stage, the acceleration of population growth brought about a build-up of migration potential which, in the case of Estonia, resulted in intensive emigration (mostly to frontiers of the Russian Empire) and to a lesser extent, internal urbanisation. The First World War marked the cessation of emigration and, after the war, the already-decreasing migration potential was channelled to the development of the country's urban settlement system. By the eve of Second World War, the migration processes in Estonia had begun to stabilise.

Population number and structure

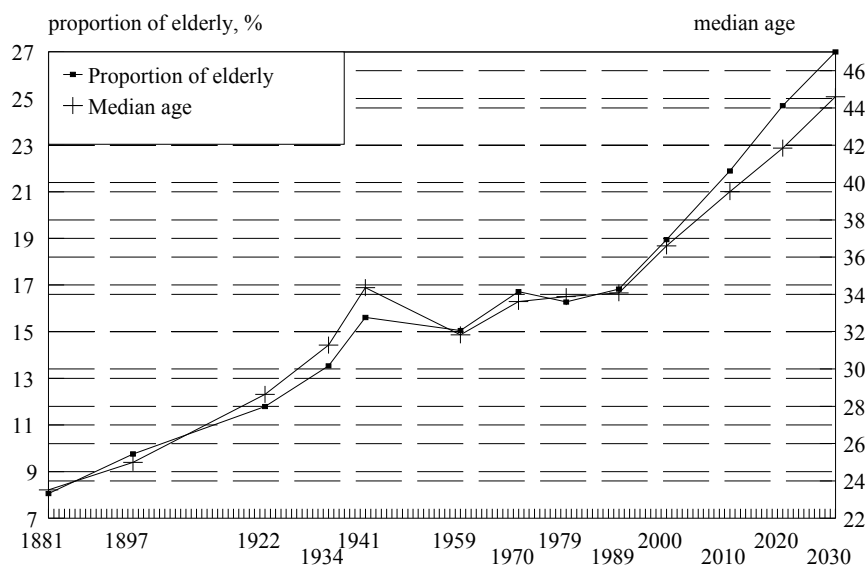
The present demographic development of Estonia has been to a great extent influenced by the changes in the population composition that occurred during and after the Second World War. On one hand, during the war and the ensuing successive occupations, Estonia lost four out of five national minorities (Germans were repatriated in 1939-1941, Jews were exterminated by 1942, Swedes escaped in 1944, Russians and Latvians living in mixed-populated areas were annexed by the Soviet Union in 1945) (Katus *et al.*, 1997). The losses from the war and post-war sovietisation accounted for 17.5 per cent of population, in addition to national minorities referred above. Currently, the number of native-born population is about ten per cent lower than its pre-war level.

On the other hand, these losses were exceeded in numbers by mass immigration from different parts of the Soviet Union, mainly from Russia. As a result, Estonia has developed from a socially and nationally homogeneous country (in 1945 Estonians formed 97.3 per cent of the population), into a country with residents of more than a hundred different ethnic backgrounds. The foreign-born population including the second generation comprises about thirty-six per cent of the total population (Katus et al., 2002). The post-war immigrants to Estonia originated from the regions located East of the Hajnal line, and compared to native-born population, featured about a fifty-year lag in the timing of demographic transition (Vishnevsky and Volkov, 1983). Sometimes, these dissimilarities between sub-populations have been misinterpreted as ethnic inequalities and used as a political argument. Studies on various dimensions of population development have revealed that regardless of the decades passed since the completion of transition and the half-century of unifying Soviet rule, native- and foreign-born background is still the most important characteristic for explaining the heterogeneity of demographic and social behaviours in Estonia (UN ECE, 2000; 2003; Katus et al., 2002).

Similarly, as in other dimensions of demographic development, the discontinuity introduced by the emergence of an immigrant population is essential for understanding the trends in age composition and population growth. Belonging to the pioneering nations in demographic transition, Estonia's continuous progress of population ageing had resulted in one of the most advanced degrees of the process by Second World War. For example, even at the time of the 1941 census, the percentage of elderly (population aged sixty and over) had reached sixteen per cent (Katus, 1995). After the war, the expansion of immigrant population with a remarkably high prevalence of young individuals halted the general ageing trend for almost fifty years: the ageing of native-born population, which peaked in the 1970s, was counter-balanced by a continuously increasing number of immigrants. In the long run, understandably, this effect did not prove to be sustainable, and the ageing process resumed in the 1980s. In the 1990s, a rapid fertility decline and a decrease in migration flows (mortality stagnation has limited the process from the bottom of age pyramid) have considerably accelerated the ageing process and this trend is expected to progress further in the coming decades (Figure 4).

As regards the size of the population, a continuously positive migration balance assured population growth throughout the post-war period, both directly and indirectly through maintenance of a younger age structure. However, due to rapid fertility decline starting in 1991, a natural decrease of population has been observed in Estonia. Without the contribution of immigration, this natural decrease would have occurred by the 1970s (as is the case for the native-born population). Currently, the drop in fertility combined with advanced population ageing and a relatively low life expectancy translates into one of the world's most rapid population declines. Still, considering the demographic statistics for Estonia since the 1990s, one should be aware of significant deterioration of data quality which has resulted from unaccomplished reform of the statistical system, discussed in detail elsewhere (Anderson et al., 1994; Katus and Puur, 2003).

Figure 4. Proportion of elderly and median age of the population Estonia, 1881-2030

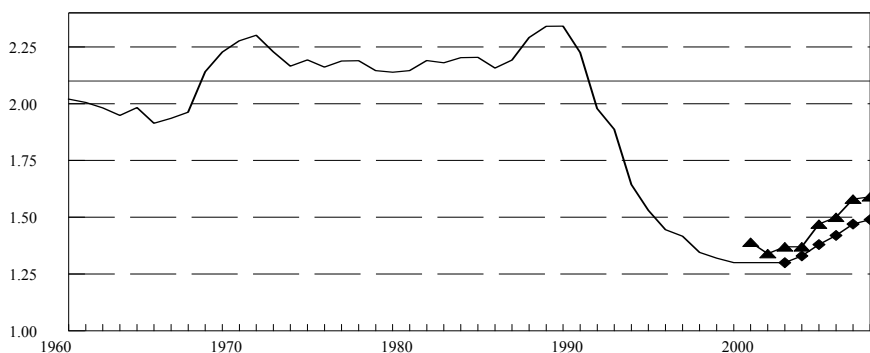


Source: Statistical Office of Estonia.

Fertility

Belonging to the nations advanced in fertility decline, the Estonian population reached below-replacement fertility in the late 1920s. As an exception to the general European trend (Festy, 1984; Gillis et al., 1992), no baby-boom occurred and fertility also remained below replacement level during the post-war decades, with a total fertility rate (TFR) of 1.9 to two in the 1940s-1950s. In this period, Estonia most likely featured the lowest fertility level in Europe. At the end of the 1960s, however, this fertility trend changed. The period fertility of the native-born population increased more than seventeen per cent in four years (1971 compared to 1967). This increase proved to be of a long-term nature, affecting the cohort indicators and lasting for nearly a generation (Figure 5). Taken together, the relatively early demographic transition, the absence of a baby-boom, and the fertility increase resulted in remarkable stability of post-transitional fertility trends in Estonia (Katus, 1997).

Figure 5. Total fertility rate Estonia, 1960-2005



Source: Statistical Office of Estonia.

The fertility level reached a peak in 1988, when the population with an immigrant background caught up to the level of the native-born population. For some years, the TFR even exceeded 2.2. This level, the highest recorded in Estonia during the past eighty years, was followed by a sharp decline in the 1990s: by 1998 (the lowest point) the TFR had dropped to below 1.2 in term of the period TFR. The decline occurred in virtually all subgroups of

the population. The decline the period TFR was strongly affected by the rapid postponement of childbearing towards later ages which was one of the sharpest in Estonia among the Europe countries. Over the same period, the cohort TFR remained at 1.6-1.65 levels. Since 2004, the impact of postponement is slowing down and the period TFR is expected to grow to until 2008.

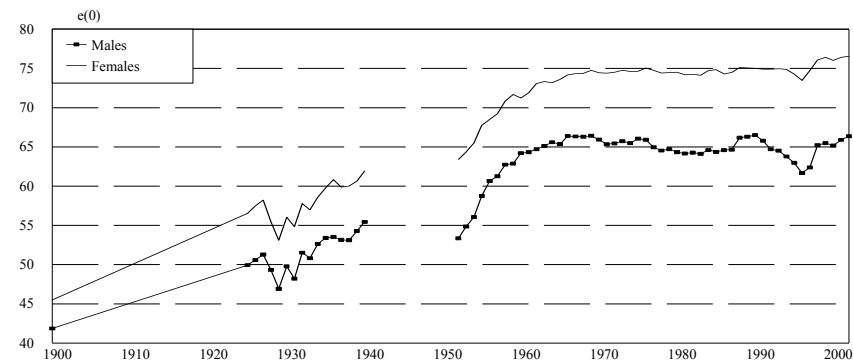
Non-marital fertility in Estonia has closely followed the Scandinavian pattern, and as in Iceland, Sweden, Norway, and Denmark, the proportion of non-marital births in Estonia is currently above fifty per cent. Notably, the sharp fertility decline of the 1990s has been influenced solely by marital fertility. Additionally, among first births, more than ninety per cent are conceived before the official registration of a union.

Mortality

The transitional mortality decline in Estonia proceeded until the end of the 1950s. At that time, the country ranked quite favourably by mortality indicators, featuring one of the highest levels of life expectancy in Central Europe. The following decades, however, did not show the continuation of earlier trends and can be briefly characterised as mortality stagnation periods. There had been only a negligible improvement of life expectancy at birth in the 1960s, and even this stems mainly from the improvement of infant mortality, which continued to decline for about decade, after the beginning of the stagnation of general mortality (EKDK, 2004). Actually, the mortality stagnation since 1959 is not characterised by an absence of progress in mortality levels, but rather by the deterioration in the age-specific pattern, particularly for males aged twenty to fifty-five. Although this phenomenon has been well documented and addressed by extensive scientific discussions, its ultimate cause still remains unidentified (Bourgeois-Pichat, 1984; Mesle and Vallin, 1993). Compared to Central European countries with similar experiences, in Estonia the early demographic transition has contributed to the particular length of mortality stagnation.

Turning to the most recent developments in Estonia, the population's health situation has worsened and life expectancy has decreased in the 1990s (Figure 6).

Figure 6. Life expectancy Estonia, 1897-2000



Source: Statistical Office of Estonia.

Between 1989 and 1994, life expectancy for males dropped from 66.1 to 61.6 years and from 75.0 to 74.2 for females (the extent of the decline partly reflects the deterioration of data accuracy). Contrary to some expectations, the biggest increase in mortality appeared not among the groups traditionally most vulnerable (children and the elderly), but rather was concentrated in the active age-span, particularly among middle-aged men. The sharpest increase was related to the already high number of violent deaths, with rates more than doubling in the period. On the other hand, however, the general mortality pattern remained unchanged and, therefore, the observed decline in life expectancy can be regarded simply as an aggravation of old tendencies, rooted in the long-term mortality stagnation. This similarity also suggests that the same causal mechanisms, which led to stagnation, are most likely responsible for the recent increase rather than some principally new processes emerging from societal transitions (Katus and Zakharov, 1997; Leon et al., 1997).

In 1995, without any noteworthy intervention by the governmental institutions, mortality began to decrease at a relatively high rate (Katus and Puur, 1997). It is likely that the present advancement returns the life expectancy back to the "stagnation level" rather than introduces a rapid improvement and entry into the fourth stage of epidemiological transition (cf. Olshansky and Ault, 1986). This expectation is consistent with the basic features of post-transitional mortality, according to which deaths due to endogenous causes result from a gradual accumulation of adverse impacts of the social environment. These accumulation mechanisms are particularly

relevant for cardiovascular diseases and cancer, accounting for more than three fourths of all deaths under the modern mortality regime. From another perspective, these mechanisms draw attention to the particular importance of the cohort effects, related to a varying duration and intensity of environmental impacts. If this hypothesis holds true, it is realistic to expect that it will take several decades to completely overcome the legacy of mortality stagnation, regardless of the speed of societal normalisation and advancement of economic opportunities. The principal improvement is likely to start in the younger age groups, as is suggested by the recent decline in infant mortality.

In very recent years, there have been some changes in mortality development in Estonia, different from the preceding period of stagnation. In Estonia, male life expectancy has recently surpassed the previous maximum, exhibited in the end of the 1950s and late 1980s. The same is true for females. In case the new trends are going to continue, a few years in the future – surely after ten years from now – the period around 2000 will be remembered as the beginning of major change towards improvement in mortality and population health in Estonia.

International migration

In the post-war period, Estonia, similar to other nations of post-transitional demographic development, transformed itself from an emigration to an immigration country. However, due to geopolitical changes stemming from the incorporation of Estonia into the Soviet Union, immigration to Estonia began earlier and at extremely high rates. Immigration originated mostly from the European part of Russia, which had entered the period of mobility transition. High migration potential was also strengthened by societal rearrangements.

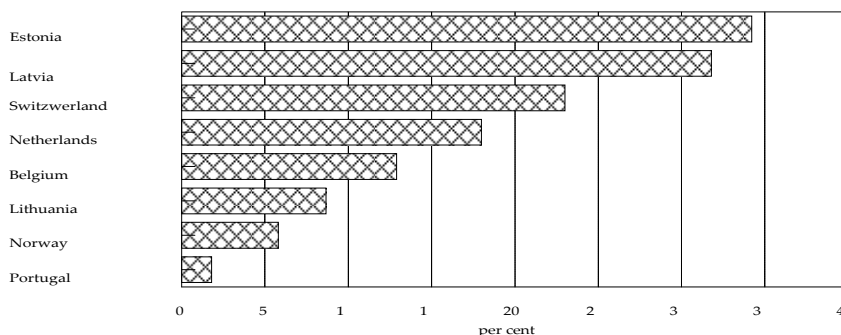
Estonia's external migration trend developed into two major migration waves (Sakkeus, 1996). The first occurred in the immediate post-war period, including forced migration (administrative and military immigration from the Soviet Union, deportations of local population, etc.). After some decrease, the second peak of immigration emerged in the late 1960s, followed by a gradual decline in migration intensity. The main characteristic of migrations between Estonia and the USSR had been that an overwhelming majority of immigrants used Estonia as a temporary residence. According to available

data, approximately only one out of seven immigrants remained in Estonia. Such a high turnover is related to the extensive military component of migration as well as to a small family component. Since a large part of military moves went unrecorded in statistics, the turnover could have been even higher.

The societal transition of the 1990s was accompanied by a rapid reduction in the migration volume between Estonia and the former Soviet Union. According to official records, immigration flows began to decrease sharply in the late 1980s. Statistics on migration should be used with great caution, as starting from 2000 statistics on migration is not published in Estonia.

Post-war immigration has left Estonia with a disproportionately large stock of immigrant population. According to the 1989 census, twenty-six per cent of the population of Estonia is foreign-born, and thirty-six per cent, including the second generation, are from immigrant origins. Estonia ranks as one of the highest among European nations in these indicators (Figure 7). In other words, only six to seven per cent of non-Estonians are members of an ethnic minority, while the remainder is comprised of immigrant population (Katuset al., 2002, op. cit.). Comparing to other European immigration countries, the second generation of the foreign-born has displayed less integration attitudes in spite of a very low intention to return to the homeland. As a result, the currently high heterogeneity of the population is likely to persist and will have a strong bearing on societal development in Estonia.

Figure 7. Proportion of foreign-origin population Estonia and selected European countries in 1990s



Source: Statistical Office of Estonia.

Moreover, it must be pointed out that the foreign-born population of Estonia has 1.2 - 1.5 million family members and relatives living in countries of the former Soviet Union, who may be considered potential immigrants in case these families wish to reunify. That has proved to be a reality since the mid-1990s, when Estonia became once again a country of positive net migration.

2.2. Education development

In the following part of the article the selected indicators and trends describing student flows and participation at different levels of education, education attainment by birth cohorts, enrolment of students, schooling rates, discontinuation of studies and mobility trends in higher education are described.

Historically, education and especially higher education has been very highly regarded in Estonia as it implied a route for better life and higher social status for members of a mostly peasants' society. Rapid expansion of a student body and the number of new higher education providers have somewhat shacked the reputation of a system but general perception has, still, stayed favourable (OECD Thematic Review 2006).

Attainment of tertiary education of population

According to the 2000 population census the share of population attaining tertiary education in birth cohorts has risen during the years under observation (Table 1).

The share of population having tertiary education has risen considerably since birth cohorts 1915/1991 achieving about fifteen per cent in birth cohorts 1930/1939. After gaining 18.7 per cent (males) and twenty per cent (females) in birth cohorts 1945/1949 the share of population having tertiary education has not risen considerably. This temporary educational stagnation is especially obvious in the case of men. For birth cohorts before 1940-1944 bigger share of men having tertiary education comparing with women is characteristic. The proportion of women in the population achieving tertiary education has risen in the birth cohort after 1944. Birth cohorts after 1970 probably had postponed their studies and the attainment of tertiary education for many reasons (including economic ones). The percentage of

the population aged fifty-five to sixty-four attaining higher education in 2004 in Estonia was thirty-one per cent (EUROSTAT, Labour Force Survey, 2005, in Thematic Overview VET, 2006).

Table 1. Educational attainment of adult population, birth cohorts 1910/1914 – 1965/1969, in percentage

Birth cohort	Males			Females		
	Basic	Secondary	Higher	Basic	Secondary	Higher
1910-1914	17.2	12.9	8.4	16.1	12.7	2.3
1915-1919	22.1	14.9	10.1	22.5	15.0	3.8
1920-1924	23.3	16.1	11.4	24.3	18.1	5.9
1925-1929	25.4	13.1	13.5	26.5	17.0	9.0
1930-1934	30.2	13.0	15.5	28.9	16.8	12.9
1935-1939	31.1	17.2	17.0	27.0	22.7	15.4
1940-1944	32.4	22.7	17.2	22.9	31.0	17.7
1945-1949	27.0	30.0	18.7	16.2	36.1	20.0
1950-1954	21.1	36.2	18.7	11.7	36.7	22.1
1955-1959	14.3	42.1	18.5	6.7	38.5	23.9
1960-1964	9.7	45.4	17.8	4.7	39.9	23.7
1965-1969	10.1	49.2	14.4	5.0	41.9	21.7

Source: Population Census 2000.

Enrolment of students in education system in Estonia

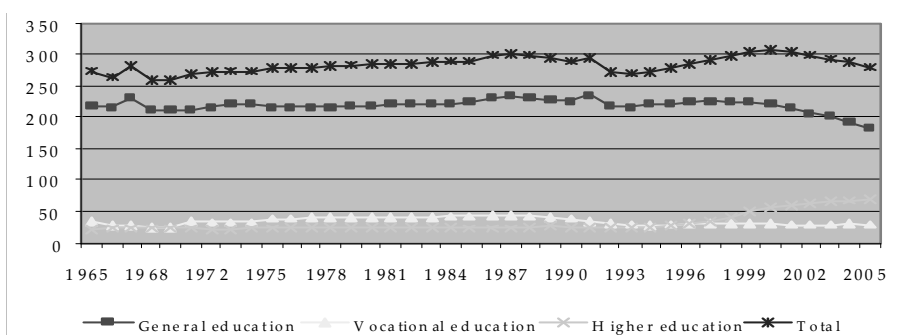
After an increase during 1993-1997, the total number of students declined. The number of students in general education generally has followed the same trend, declining by 18.6 per cent during the last five years (MoER, 2007). At the same time the number of higher education students has increased.

According to estimations made by the Ministry of Education and Research the number of students in general education will decrease by 39,000 students until 2010. Looking at the prognosis of the population aged fifteen to seventeen and eighteen to twenty-three (Figure 9) one may notice that both the number of population at the age of secondary education level and at the age of higher education level will rapidly decline after 2005. Therefore it is expected that in the very near future the number of students in higher education will decline considerably.

Schooling rates by level of education

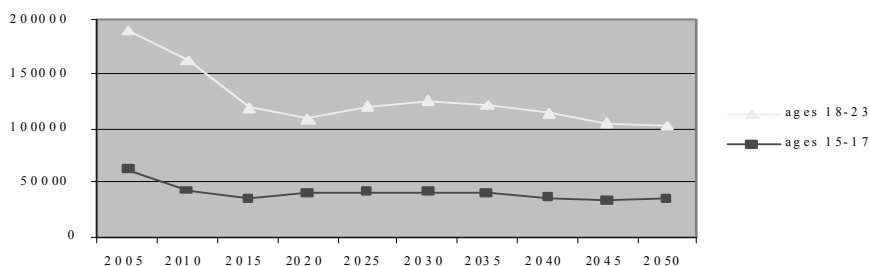
In the following figures (Figures 8 – 10) the schooling rates by level of education are presented. The rates are calculated as ratio of students studying (in certain level of education) to the number of population in the corresponding age cohort⁵. The schooling rates in general education have been calculated as average over the years 1999-2007, in vocational education over the period 2004-2006 and in higher education for the period 2000-2006.

Figure 8. Enrolment of the pupils/students by levels of education



Source: Statistical Office of Estonia.

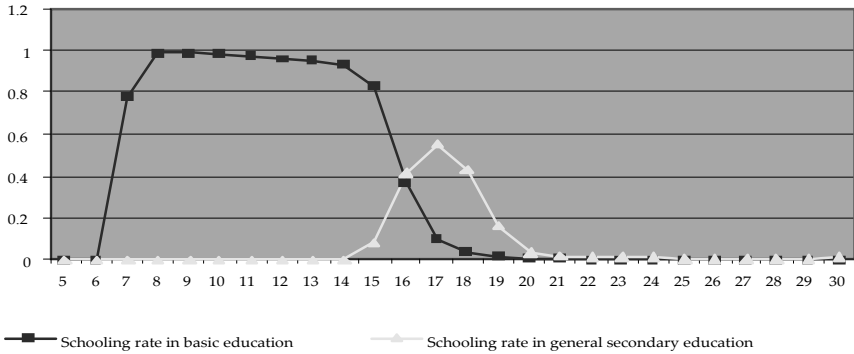
Figure 9. Number of population in age groups fifteen to seventeen and eighteen to twenty-three, estimation in 2005 and prognosis up to 2050



Source: World Population Prospects, 2005.

⁵ Source: Ministry of Education and Science; EHIS; Calculations by EKDK, Tallinn University.

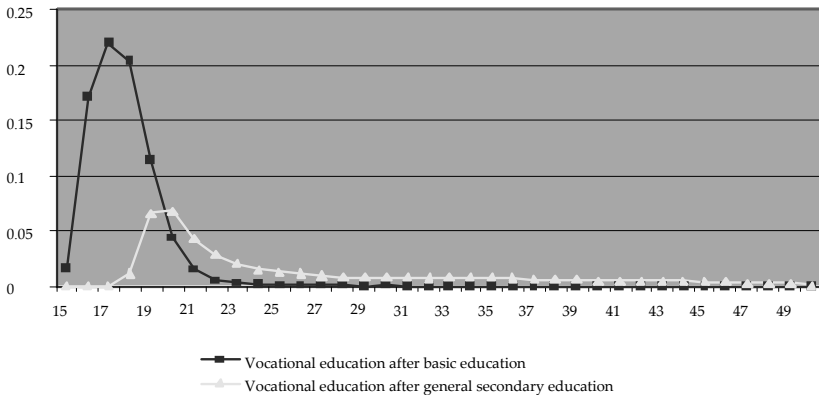
Figure 10. Average schooling rate in general education, 1997-2007



Source: Ministry of Education and Research (MoER); Estonian Interuniversity Population Research Centre (EKDK).

For the age cohorts seven to fifteen the highest schooling rates in basic education is characteristic. For the age cohorts sixteen to eighteen the participation rate in general secondary education is highest. For other age cohorts the participation in basic education is rather marginal.

Figure 11. Average schooling rates in vocational education

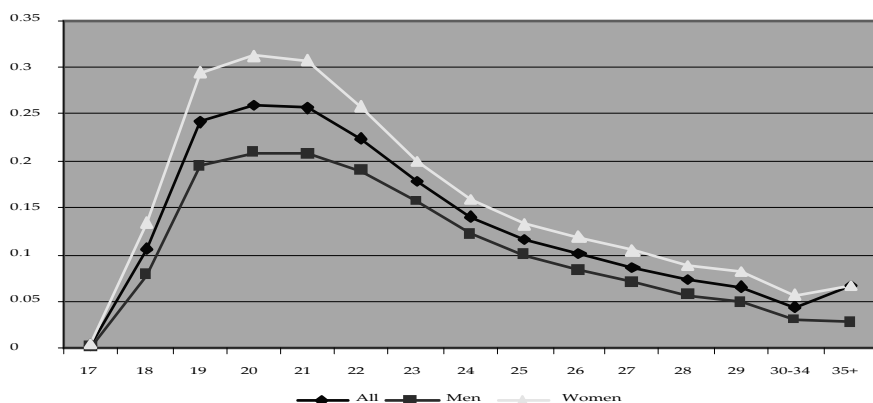


Sources: Ministry of Education and Research (MoER); Estonian Interuniversity Population Research Centre (EKDK).

The majority of secondary VET students are in the age range sixteen to twenty-two years. The highest schooling rates in vocational education after

basic education are in age cohorts seventeen to nineteen years. In the post-secondary vocational education schooling rates are rather diversified along the older age cohorts.

Figure 12. Average schooling rate in HE, 2000-2008



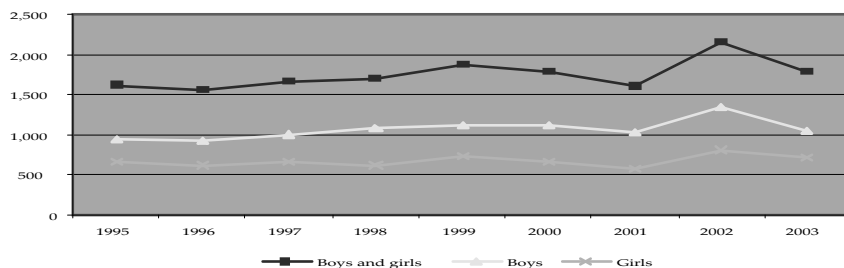
Sources: Ministry of Education and Research (MoER); Estonian Interuniversity Population Research Centre (EKDK).

Even if the highest rate in higher education is characteristic for the age cohorts nineteen to twenty-one, the rate is still high in the older cohorts, including age cohorts over thirty-five. Women's higher education schooling rate is considerably higher comparing with men in age nineteen to twenty-two. For older age groups the difference between men and women is lower.

Ä

Discontinuation of studies/drop out

Figure 13. Number of discontinuers in general education, diurnal study (1995-2003)



Source: Statistical Office of Estonia.

The problem of discontinuers is rather serious at the level of basic education. Over the last five years around 1,300 young people interrupted annually their studies in basic school, with a cumulative impact. This problem is especially serious for boys, which leads to increasing gender differences at higher levels of education.

The number of those who leave school before completing even basic education is increasing. In 1999/2000 in several reasons 998 pupils, 721 boys and 277 girls (0.54 per cent from pupils studying in the basic school) discontinued their studies in the basic school (Table 2) (Nassar et al., 2002). The number and share of drop-out of boys is much higher than the girls.

Return to the school later is rather difficult and the drop-out from basic school has the educational stratification effect. Even if young people, dropping out from basic school later continue the education path with high probability they are not able to continue studies at HE level. It is estimated that in total more than 20,000 people (in the seventeen to twenty-five age group) are still without basic education in 2001 (Social Trends in Estonia 2001; Zelloth, 2003).

Table 2. The number and rate of discontinuers in the level of basic education, diurnal study

Year	The number of discontinuers			The rate of the discontinuers to the number of pupils; per cent		
	All	Girls	Boys	All	Girls	Boys
1993/94	782	249	533	0.43	0.28	0.58
1994/95	871	251	620	0.48	0.29	0.67
1995/96	799	228	571	0.44	0.26	0.61
1996/97	830	278	552	0.45	0.31	0.58
1997/98	819	214	605	0.44	0.24	0.63
1998/99	920	220	700	0.50	0.25	0.73
1999/00	998	227	721	0.54	0.31	0.76

Source: Nassar et al., 2002.

The drop-out rate in general secondary education has been 2.4 per cent in average in the years 1998/1999 – 2004/2005 varying from two per cent (in 2001/2002) to three per cent (in 2002/2003) (*Üldharidusstrateegia*, 2007-2013).

A serious drop-out problem also exists in vocational education. The problem has been recognised by the VET Action Plan for 2004, setting the

target to decrease the drop-out rates annually by one percentage point reaching eight per cent in 2004 (Zelloth, 2003). Unfortunately, the drop-out rate has continued to rise during last years. While between 1998/1999 the rate was thirteen per cent, in 2005/2006 the drop out rate has risen to eighteen per cent. The number of discontinuers in higher education during the period 1993/94 – 2004/2005 has varied between eleven and fourteen per cent. The highest rate is from 1994/95 for Master's level of education (incl. one-year teachers' education and intern-studies, sixteen per cent in 2004/2005) and in natural sciences (OECD Thematic Review 2006).

The percentage of students discontinuing studies from the total number of students was 13.9 per cent in 1993/1994, dropped to 10.9 per cent in 2001/2002 and started to go up again, reaching 14.1 per cent in 2004/2005. Two thirds of those who discontinued studies in 1993 did so because of academic deficiencies, in comparison with less than one third in 2005. There is not much difference in the withdrawal rate across academic and professional higher education programmes, but certain gender differences are visible. In 2003, every sixth male student discontinued his studies, but only every tenth female student did the same (OECD Thematic Review 2006).

Table 3. Discontinuing studies by level of education and sex, 2005

Educational level	Total (in percentage)	Female (in percentage)	Male (in percentage)
Professional higher education	14,1	20,8	10,2
Vocational higher education	30,2	30,0	30,5
Diploma studies	15,1	17,0	13,7
Bachelor's studies	14,2	17,9	11,8
Integrated Bachelor's and Master's studies	9,3	10,7	8,6
Master's studies	15,9	25,6	10,9
Doctoral studies	8,0	6,7	9,2
TOTAL	14,1	18,8	11,2

Source: Statistical Office; EHS, 2005; OECD Thematic Review 2006.

Mobility Trends in Higher Education

In order to facilitate student mobility and to validate studies carried out in another country, a number of amendments have been made to the legislation, and student and young lecturer exchanges have been launched in Estonia. With the aim of integration into the common higher education area of Europe, a two-cycle system of higher education has been adopted, the parliament has ratified the Lisbon Convention, and the Diploma Supplement in English was issued to all graduates free of charge and automatically (OECD Thematic Review 2006).

The “busiest” mobility of Estonian students occurs within the EU Erasmus programme. In terms of geography, the countries preferred under the programme in the early 2000s were Southern European countries, with which Estonia until recently had fewer contacts (in contrast to Finland, for instance, which has been a popular destination for some time). Erasmus will remain an exchange programme for Estonian students that helps to broaden their general outlook on the world and to better learn about the European cultural environment (OECD Thematic Review 2006).

Table 4. Implementation of the Erasmus Programme in Estonia

	1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006
Outgoing students	183	255	274	304	305	444	511
Incoming students	55	84	110	170	166	266	371
Outgoing academic staff			78	77	84	243	243
Incoming academic staff			61	103	114	158	193

Source: Archimedes Foundation, 2007.

A national scholarship programme, entitled “Kristjan Jaak”, has been launched, under which a short stay abroad is supported – visits to libraries, working in laboratories and attendance of conferences. No clear priorities as to the field of study have been set for the allocation of scholarships under this programme – the determining factor is the quality of the application.

Table 5. Kristjan Jaak Scholarship Programme

	Beneficiaries	Budget (in Estonian Crowns)
2003/2004	113	2,259,000
2004/2005	220	5,687,081
2005/2006	205	8,941,584
2006/2007	212	9,468,407

Source: Archimedes Foundation, 2007.

A scholarship scheme for full time doctoral study at foreign universities is different by its nature. The scholarship is allocated to those specialities that are of strategic importance. The allocation of a Doctoral scholarship is tied to an obligation to return to Estonia after the conferral of the doctorate. State scholarships cover tuition as well as subsistence costs, calculated based on the country's living standard index.

Table 6. Doctoral students in foreign universities within the framework of state-commissioned education

	Beneficiaries	Budget* (in Estonian Crowns)
2002/2003	11	1,504,000
2003/2004	13	3,792,000
2004/2005	15	6,110,000
2005/2006	12	7,301,479
2006/2007	15	8,879,773

* Total expenditure on students enrolled in foreign universities, incl. those who started studies in previous years.

Source: Archimedes Foundation, 2007.

Scholarships administered under international agreements comprise smaller amounts. Given the limited financial resources, the number of states having bilateral agreements with Estonia for the exchange of students is not very large – there are mainly the countries of Central and Eastern Europe with whom we share a similar history, and also contracts with countries like Israel, Switzerland, Belgium and Denmark (OECD Thematic Review 2006)

Table 7. International agreements – outgoing and incoming Estonian students

	2002		2003		2004	
	outgoing	incoming	outgoing	incoming	outgoing	incoming
Bilateral contracts	28	24	30	23	25	27
Summer courses	29	11	27	12	30	12
Unilateral grants	28	-	32	-	31	-

Source: Archimedes Foundation, 2005.

A separate international exchange scheme for academic staff and researchers is administered by the Estonian Academy of Sciences. Estonian scientists collaborate most actively with scientists from Finland, Hungary, Latvia, Lithuania, Poland and Sweden. However, the rankings of countries in terms of the field of study may differ greatly (OECD Thematic Review 2006).

Table 8. Researcher mobility, 1993-2004

Year	Visiting researchers in Estonia		Estonian researchers in foreign countries	
	Number of days	Number of visits	Number of days	Number of visits
1993	413	47	996	51
1994	891	80	1164	74
1995	797	98	1315	96
1996	739	105	1384	104
1997	714	87	1326	133
1998	1051	121	1316	148
1999	629	85	1479	173
2000	935	119	1485	161
2001	776	99	1715	207
2002	1038	116	1569	185
2003	805	86	1610	215
2004	775	95	1522	194

Source: Academy of Sciences. Department of Academic Exchange, 2005.

Active cooperation with Nordic and Baltic countries is proven by a range of internationalisation initiatives launched by higher education institutions where the countries with the highest number of incoming students are Finland, Latvia and Lithuania. The relatively large number of

Finnish students in Estonia can be explained by the *numerus clausus* restriction used in their home country, which makes students mainly in the medicine-related subject areas come to study in Estonia (primarily in the Medical Faculty of the University of Tartu and the Faculty of Veterinary Science at the Estonian University of Life Sciences). Along with our neighbour countries (Finland, Latvia, Lithuania), another country which has been dominating in recent years as a sending country is China (OECD Thematic Review 2006).

The conclusion that we can draw from the above statistics is that educational exchange, both within Erasmus programme and within different national programmes, has intensified over the recent years. However, when comparing these figures with those of some other EU countries, there is definitely room for improvement. When it is evident that the closest scientific cooperation, including student mobility, takes place between the neighbour countries, the circle of countries with which Estonia has signed student/ researcher exchange contracts could still be enlarged. Considering the importance of Doctoral studies from the point of view of the research potential of a country, state funding to Doctoral scholarship needs to be increased and a relevant system of initiatives for the Doctorates to return to Estonia after their exchange programme should be established.

3. The Impact of Demographics and Education Trends on Higher Education Institutions

Demographic trends that influence higher education derive mostly from two fundamental developments – rapid fertility decline in the nineties and expansive growth of higher education sector.

The decline of fertility rate in the nineties has not yet influenced number of students – demographic „hole” has not yet reached higher education. The decline in the number of students in higher education is expected after 2010.

At the same time, higher education has developed vastly over past fifteen years. This means that the number of higher education institutions and, of students has increased. Different learning programmes and new target groups have been encompassed. The growth in student enrolment in higher education was facilitated by several factors like the development of private universities and higher education institutions, the introduction of

the paid education in public universities and the introducing of the applied higher education within the vocational education institutions.

After Estonia's regained independence, the higher education system developed/expanded mostly in a liberal way. The public universities and the people who bring private educational institutions and learning programmes into life, have had a lot of freedom. The role of the state has been moderate. Thus higher educational institutions themselves have a lot of direct responsibility regarding their future and strategic initiative taken in order to meet the challenges caused by the demographic developments.

The existing legal framework already enables the implementation of the principles of lifelong learning in higher education. The Professional Higher Education Institutions Act (1998) regulates learning as full and part-time and external student, also the recognition of previous learning and working experience. Universities Act (1995) regulates learning with full and part-time and external studies, also the recognition of previous learning and working experience. The act entitles board of the university to approve the areas, forms and procedure of the work-related training provided. Private Schools Act (1998) regulates the establishment and operation of private schools (Lifelong Learning Strategy, 2005).

For the acquisition of higher education, flexible study forms are provided by institutions of professional higher education and universities. Attainment of higher education through part-time studies includes usually a fee, only some areas of priority importance for the state being financed (*i.e.*, teachers without higher education) (Lifelong Learning Strategy, 2005).

The strategic activity of the state in the field of higher education (formulated in the document Estonian Higher Education Strategy, 2006–2015) is directed rather on the improvement of the quality of higher education. Nevertheless in the higher education strategy several measures will be developed in order to make access to higher education of certain target groups easier and in order to include non-traditional learners into the higher education system:

- facilitation of the combination of studies, work and family life, and the taking into account previous studies and work experience, as a significant part of completing the study programme;

- universities will be autonomous in determining the conditions for entry and graduation;
- support to the access to higher education by learners with special needs young people who do not speak Estonian as their mother tongue will have access with state support to Estonian language study of up to one extra year in duration;
- co-operation of the MoER with the higher education institutions to develop general/national principles for the recognition of previous studies and work experience in the/study process for all levels of study (combined with career guidance);
- assurance of access by 12.5 per cent of the twenty-five to sixty-four year old population to in-service training and retraining, and to adult formal education;
- utilization of the opportunities provided by e-learning (Estonian Higher Education Strategy, 2005).

In order to meet the challenges caused by the demographic trends higher education institutions are trying to use the following strategies.

Focus on the new target groups

Some experts presume that involving new target groups in higher education will more or less compensate for the loss of the number of potential students of young generations. Some experts doubt that, but they all agree that higher education institutions have to be strategically very active for this goal much more then they have been until today.

The influence of the lifelong learning mentality and active involvement of new and non-traditional target groups (older age groups, non-Estonians, disabled people) into higher education is already started at the HEIs. Universities also have strategies and are working actively to create demand for lifelong learning in the society and in certain target groups particularly. It is expected that the HEIs will permanently concentrate on providing programmes for adult and continuous learning in different forms (for example, developing further open universities, e-learning and other flexible study forms). At the same time the quality of adult learning should improve

taking much better into account the needs of learners. It needs reorientation of the content and methods of study in universities.

To a certain extent including new target groups may compensate partially but not entirely the forthcoming decline of „traditional“ students. It is obvious that the measures implemented so far are not enough.

Internationalisation of higher education

The increase of foreign students in Estonia is influenced mostly by two factors: the demographic „hole“ and a global trend of internationalisation. Some universities try to bring in students from China, Ukraine or Russia, but there is no massive increase of foreign students in general.

Studies in English will most likely expand in the future. In this respect, Estonian immigration politics will be an issue as at this moment the status of a student and student visas do not exist. More students from India and China would come to study in Estonia, if the Migration Board would allow it. Also, language competence of university teachers is still poor.

So far, Estonian higher education does not have a specific niche to offer in order to bring foreign students to Estonia. Some steps have been taken towards implementing English studies, but there are not many English curricula and there is no significant demand for them. There is also a certain fear that the increase of foreign students and the implementation of English curricula may be, in the long run, a threat to mother tongue education.

The common opinion among experts is that the number of foreign students will remain rather limited and it will not help to compensate the general decline in the number of students in the near future. The main reasons for the limited number of foreign students are also the quality of education, the climate, the language skills, and the migration policy.

In order to facilitate the internationalisation of higher education a specific strategic document has been accepted by MoER. In this document, the main activities to improve the position of the Estonian higher education in the international higher education space and to make higher education more open and flexible are foreseen. The measures include: the creation of supportive legal environment (for recognition of qualifications, supply of common study programmes, immigration policy, etc.), the internationalisation of studies (supporting mobility of students, exchange of

international know how, etc.), and the internationalisation of curricula, etc. (Strategy for Internationalisation of the Higher Education of Estonia, 2007).

Inter-university cooperation

Cooperation between universities could be a solution to cope with problems caused by demographic changes. This is hard to achieve, because higher education institutions are also competitors. It can only be hoped that the common problems will make HEIs work together. We could have HEIs operating under different names, but together they could function as a unified Estonian University. At present a good example of cooperation between universities is the existing E-University Consortium.

Development of inter-universities curricula is also stated in the higher education strategy. The idea is to connect competencies of different universities into one curriculum. This kind of cooperation would also include foreign universities. Hereby, the regional cooperation/networking would be also an important factor (for example in Nordic Region). This would allow the Estonian universities to cooperate with universities and companies from that region.

To facilitate the inter-universities cooperation and a better division of work between HE institutes a more centralized decision making system is needed for deciding who teaches what. In the future (according to a measure in the higher education strategy), licensing of the HEIs by the MoER will be introduced and, as a result, universities will obtain licenses according to their study fields. This will allow the state a centrally control of the content and quality of studies. Most likely, within a year, legal framework for that will be prepared and licensing will begin.

Research and development

Universities would show real quality orientation if they could compensate the decrease of the number of students with expanding research and development (R&D). R&D is one of the main factors in increasing income of HE institutions. Universities should concentrate more on R&D and sell their competence also to companies. At the moment, R&D in universities is rather marginal activity but hopefully this will change. At the moment for supporting R&D activities in the HEIs the Spinno programmes have been implemented.

When the number of students decreases, university teachers could invest more time into R&D. It is only necessary for university teachers to have more open mind and flexibility, for a number of young scientists to enter the academia and for certain internal prioritizing.

There is also a need for more high level cooperation in R&D area. In the knowledge based society, we should have networks between universities, vocational higher education institutions and companies. Even if universities are already acknowledging the need for practice and some steps are being taken toward creating competence-based curricula the possibility that the universities will miss out on the opportunity to turn to companies for cooperation still exists. This may cause „branching” of Estonian universities, *i.e.*, they could become branches of big foreign universities.

Inter – European distribution of work would be more likely in field of R&D (through centres of excellence) than in education. There has been talk about inter-European work distribution in education as well, but no steps have been taken towards that.

At the same time, mission of higher education should be preserving Estonian language and culture based education.

Impact

Based on strategic ideas and expert opinions, changes in higher education will have multiple effects. There may be a pressure to the government to make centralized decisions regarding higher education institutions. Demographical changes will most likely lead to closing or fusion of smaller institutions. Optimal number of HEIs in Estonia would be probably twenty to twenty-five. There may also be pressure to nationalize public universities, to minimize duplication in curricula and also to control the division of work between universities. Licensing of the study fields may support the idea of the division of work between universities. Universities will bunch up also because of institutional accreditation demands. And due to the provision in the higher education strategy stating that private universities should provide only educational services.

The decrease of the number of private universities should take place within next three years. The number may also decrease in the near future. It is expected that the initiative for that will come from HEIs.

In this stressful situation, there may also be pressure on the universities to make more centralized decisions (rector's offices will have more say in the work and resources distribution).

New target groups will change structures and work arrangements inside the universities.

Since at present students are older than before and pay for their education themselves, they also demand better quality. The difference between competencies and the quality of teaching staff will become more and more clear in this new context.

The approach towards students will become more individual. This means that curricula will be designed taking into account student's needs, previous learning and work experience. Learning will be better connected to student's life and work. The content of the studies will be the same, but the way to achieving the goals that have been set will change. This demands more flexibility from HEIs and they are not ready for that yet.

E-learning is a field that also requires developing. A common opinion is that with e-learning, lecturer's work will become easier, but in reality, it is not true. *Au contraire* – this means more work for them.

The foreseeable changes will have less affect on large universities that provide studies in various fields. Likely, soft subjects, that are very popular at the moment, will be affected the most. Economical recession would diminish the need for various consultations (leadership, etc.). This will also affect learners. Exact sciences and natural sciences should get more attention. Universities, which offer better quality, will be in a better position.

Generally, to some degree, the higher education institutions in Estonia are already preparing (at varying degrees) for the changes caused by the demographic developments. At the same time it is obviously insufficient as, in general, they did not prepare for this new situation systematically, using different strategic possibilities. The major shortcomings are obvious in the field of R&D, in using different possibilities of co-operation between HEIs, in internationalization of study programmes.

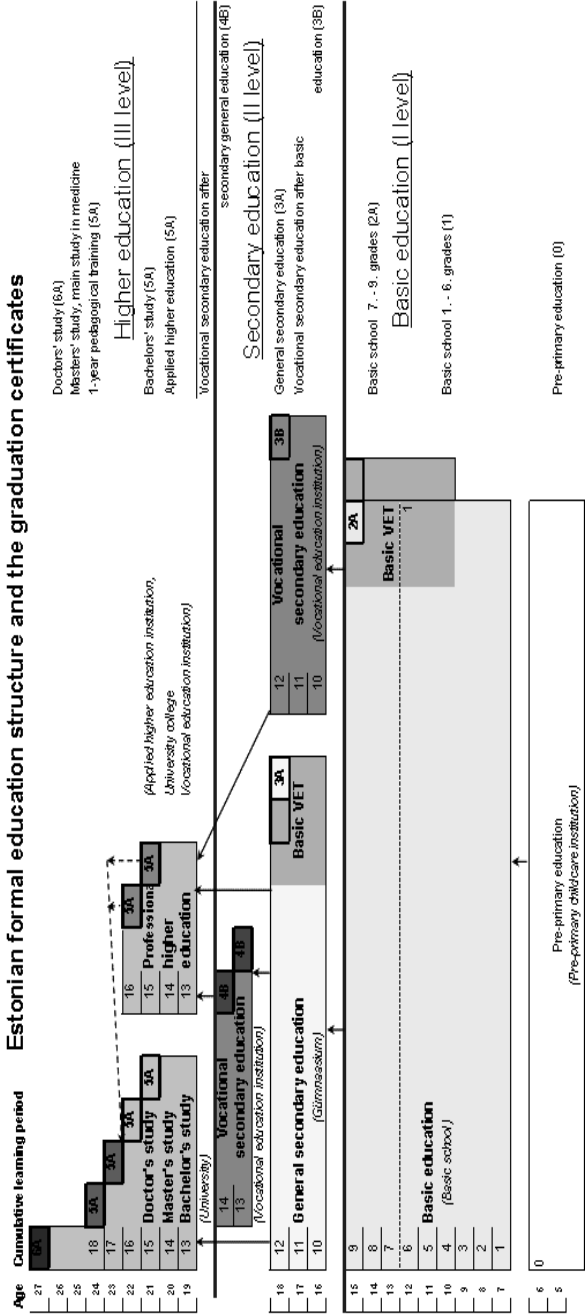
References

- ANDERSON, B., KATUS, K. and SILVER, B. 1994. Developments and Prospects for Population Statistics in the Countries of the Former Soviet Union. *In: Population Index*, 60(1), pp. 4-20.
- ANNUS, T., KANEP, H., KLIIMASK, J., NOORKÕIV, R., PAABUT, A. and PAULUS, A. 2005. *Üldhariduskoolide võrgu korraldamine*. [Restructuring of the School Network]. Tallinn: Poliitikauuringute Keskus Praxis (In Estonian).
- BOURGEOIS-PICHAT, J. 1984. Mortality Trends in the Industrialized Countries. [Paper presented at the] *International Conference on Population "Mortality and Health Policy"*, 30 May – 3 June 1983, New York. *Department of International Economic and Social Affairs*, New York: UN, pp. 169-217. (ST/ESA/SER.A/91).
- ESTONIA. MINISTRY OF EDUCATION AND RESEARCH. 2005. *Lifelong Learning Strategy 2005–2008*. Approved by Regulation of the Government of the Republic of Estonia of 3 November 2005. <http://www.hm.ee> (Accessed 19 February 2008).
- , 2006a. *Country Background Report for Estonia*. Paris: OECD. (OECD Thematic Review of Tertiary Education).
- , 2006b. *Eesti kõrghariduse rahvusvahelistumise strateegia aastateks 2006–2015* [Strategy for Internationalisation of Higher Education of Estonia]. (In Estonian) <http://www.hm.ee/index.php?popup=download&id=5617> (Accessed 19 February 2008).
- , 2006c. *Estonian Higher Education Strategy 2006–2015*. <http://www.hm.ee/index.php?popup=download&id=5908> (Accessed 19 February 2008).
- ESTONIA. EESI STATISTIKA (ES). 2002. *Eesti Inimarengu Aruanne 2001* [Social Trends in Estonia 2001]. Tallinn: ES. (In Estonian)
- , 2004. *Kõrgharidus 1993-2003* [Higher Education 1993-2003]. Tallinn: ES (In Estonian).
- ESTONIAN INTERUNIVERSITY POPULATION RESEARCH CENTRE (EKDK). 2004. *Life Tables: Estonia 1923-1938 and 1950-2000*. Tallinn: EKDK. (RU, Series C, No. 23).
- FESTY, P. 1984. *Fertility in Western Countries from 1870 to 1970*. Bangkok: UN.
- GILLIS, J., TILLY, L. and LEVINE, D. 1992. *The European Experience of Declining Fertility, 1850-1970: The Quiet Revolution*. Cambridge: Blackwell. (Studies in Social Discontinuity).

- HAJNAL, J. 1965. European Marriage Patterns in Perspective, *In*: D. V. Glass and D. E. Eversley. (eds). *Population in History: Essays in Historical Demography*. Chicago: Aldine Publishing Company, pp. 101-143.
- INNOVE/ESTONIAN NATIONAL OBSERVATORY. 2006. *Thematic Overview: Description of Estonian VET System*.
[http://www.innove.ee/refernet/files/Thematic per cent20Overview per cent202006.pdf](http://www.innove.ee/refernet/files/Thematic%20Overview%202006.pdf) (Accessed 19 February 2008).
- KATUS, K. 1989. *Demographic Development in Estonia through Centuries*, (RU, Series B, No. 10). Tallinn: EKDK.
- , 1994. Fertility Transition in Estonia, Latvia and Lithuania. *In*: W. Lutz, S. Scherbov, S. and A. Volkov (eds). *Demographic Trends and Patterns in the Soviet Union before 1991*. London, New York: IIASA, pp. 89-111.
- , 1995. *General Trend of Population Ageing in Estonia*. Tallinn: EKDK. (RU, Series B, No. 27).
- , 1997. Post-Transitional Fertility: Case of Estonia, *In*: K. Katus, V. Stankuniene and A. Vikat. (eds). *Demographic Development in Baltic Countries. Special Issue of Revue Baltique*, 1997, pp. 49-63.
- , 2000. Long-term Mortality Trend in the Baltic Countries. *Trames*, 4 (3), pp. 231-256.
- , 2003. *Unity and Diversity of Population Development: Baltic and South-Caucasian Regions*, Tallinn: EKDK. (RU, Series D, 3)
- KATUS, K. and PUUR, A. (eds). 1997. *Mortality Development and Economic Transition: Case of Estonia*. Tallinn: EKDK. (RU, Series B, 35)
- KATUS, K., PUUR, A. and PÕLDMA, A. 2002. *Eesti põlvkondlik rahvastikuareng*. [Demographic Development of Estonian Population by Generations]. Tallinn: EKDK. (RU, Series D, 2) (In Estonian)
- KATUS, K., PUUR, A. and SAKKEUS, L. 1997. *Development of National Minorities: Republic of Estonia Up to 1944*. Tallinn: EKDK. (RU Series B, 34)
- , 2002. Immigrant Population in Estonia. *In*: W. Haug, P. Compton and Y. Courbage (eds). *The Demographic Characteristics of Immigrant Populations in Europe*. Strasbourg: Council of Europe, pp. 131-192.
- KATUS, K. and ZAKHAROV, S. 1997. Demographic Adaptation to Socio-Economic Changes in the USSR Successor States. [Paper presented at the] *IUSSP XXIII General Population Conference*, 11-17 October 1997, Beijing.
- KRUMINS, J. 1990. Formation of the contemporary Type of Mortality of Population in Latvia. *Izvestia an Latvii*, 8, pp. 75-84. (In Russian)
- KUCERA, T., KUCEROVA, O. V., OPARA, O. B., and SCHAICH, E. (eds). 2000. *New Demographic Faces of Europe*. Berlin, Heidelberg, New York: Springer.

- LEON, D. A., CHENET, L., SHKOLNIKOV, V. M., ZAKHAROV, S., SHAPIRO, J., RAKHMANOVA, G., VASSIN, S., and MCKEE, M. 1997. Huge Variation in Russian Mortality Rates 1984-1994: Artefact, Alcohol or What? *The Lancet*, 350, pp. 383-388.
- MÄGI, J. 2005. *Kutsehariduse maine ja kontingendi kujunemine. Eesti kutseõppe I teaduskonverentsi kogumik "Teaduspõhine kutseõpe – osa teaduspõhisest majandusest"* [The Formation of the Reputation and Contingent of the Vocational Education. Proceedings of the First Research Conference in Vocational Education "Knowledge-Based Vocational Education – Part of Knowledge-based Economy"]. Tallinn: TLÜ Haridusuuringute Instituut. (In Estonian).
- MESLE, F. and VALLIN, J. 1993. Développement économique et esperance de vie: la transition sanitaire au tournant des années soixante. In: *Proceedings of the International Population Conference*, 2. Montreal: IUSSP, pp. 365-383.
- OLSHANSKY, J. S. and AULT, B. A. 1986. The Fourth Stage of Epidemiological Transition: The Age of the Delayed Degenerative Disease. *The Milbank Quarterly*, 64 (3), pp. 355-391.
- PALLI, H. 2004. *Traditional Reproduction of Population in Estonia in the 17th and 18th Centuries*. Tallinn: EKDK. (RU, Series D, 4).
- SAKKEUS, L. 1996. Estonia. In: T. Frejka (ed.). *International Migration in Central and Eastern Europe and the Commonwealth of Independent States*. New York, Geneva: UN, pp. 57-65.
- TINA, A and TÕNISSON, E. 2006. *Statistical Review of Students in Higher Education Curricula*. Tartu: Ministry of Education and Research.
- UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (UN ECE). 2000. *Estonia: Standard Country Report*. New York, Geneva: UN ECE. (Fertility and Family Surveys in the Countries of the ECE Region).
- , 2003. *Estonia: Standard Country Report*. New York, Geneva: UN ECE (Dynamics of Population Ageing in the Countries of the ECE Region)
- UN DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS. POPULATION DIVISION. 2005. *World Population Prospects. The 2004 Revision. Volume I: Comprehensive Tables*. New York: UN. (United Nations World Population Estimates and Projections)
- VISHNEVSKY, A. and VOLKOV, A. (eds). 1983. *Vosproizvodstvo naseleniya v SSSR*. [Reproduction of the Population in the Soviet Union]. Moscow. (In Russian)
- ZELLOTH, H. 2003. *Country Monograph on Vocational Education and Training System and Structure and Public and Private Employment Services in Estonia*. Turin: ETF.

Figure A.1. Estonian formal education structure and the graduation certificates



Source: OECD Thematic Review 2007.

Up and Down We Wander: German Higher Education Facing the Demographic Challenge

Gösta GABRIEL, Thimo VON STUCKRAD and Johanna WITTE

Introduction

The German situation is special in international comparison in three major respects. First, Germany will be hit by regressive demographic developments much earlier and more strongly than other European states (OECD, 2007b). However, this does not happen in the same way and timing throughout Germany: In the majority of regions in the Eastern German *Länder*, a market slump of the younger age groups can already be identified, the so-called “post-unification slump” (*Nachwende-Knick*) (Berlin-Institut, 2005), as well as a lasting outward migration trend to the Western German *Länder*. As a consequence, the age structure is already becoming increasingly heterogeneous, implying massive adjustment pressure for all fields of the public sector, such as infrastructure, health, and education. These developments hit the Western German *Länder* with some delay: here – regional differences set aside – the sizes of the younger age groups still slightly increases up to the year 2010 (the so-called “baby-boom echo”). From then onwards, the decrease of young people already taking place in Eastern Germany will also start in the West, including the resulting shifts in the age structure.

Second, a major school reform will have repercussions on the higher education (HE) system. In the years between 2007 and 2016, the majority of German *Länder* will shorten secondary schooling up to the HE entrance qualification at the *Gymnasium*¹ from nine to eight years, thereby reducing

¹ The *Gymnasium* is the major – but not the only – type of secondary schooling preparing for higher education in Germany, leading to the classical and general higher education entrance qualification, the *Abitur*.

total schooling from thirteen to twelve years. As a consequence, double cohorts will leave schools in these *Länder* distributed over a period of seven years. The HE system as a whole will be faced with an increased demand over a period lasting at least until 2020. Considering the latently continuing, purely demographic demand decline, this politically induced demand boom constitutes a unique opportunity: the decreasing potential of academically trained working population (OECD, 2007b) could partly be balanced for a while through the politically induced increase of highly qualified young people. Unfortunately, this constellation currently tends to blur the sight of policy-makers in Germany for the more profound challenges imposed by demographic change. Only *Länder* which are affected already now or very soon by shifts in the age structure or a massive decrease of young people, such as Saxony, have recognised demography as a political issue cutting across sectors and are starting to adjust their system. National political responses to the real demographic challenges are not yet in sight, or where they exist, are not thematically and institutionally linked.

Third, Germany is special with respect to its political and institutional structure. The federal system assigns authority over education – including higher education – to the sixteen *Länder* (states). The federal government is left with very limited framework competence, which renders it structurally difficult to develop co-ordinated and nation-wide political answers to the demographic challenge.

This paper is organised in four major parts. In Part 1, the general demographic situation in Germany is presented and some numbers on the effect of migration, social background and gender on educational achievement are provided. Part 2 has two sections: after giving some background on the German HE system, the challenges posed to this system by both the 'long-run' demographically-induced and the 'short-run' politically-induced changes in demand for HE are analysed. Part 3 is devoted to the responses and measures of HE policy so far, which have been largely confined to dealing with the increase in student demand up to 2010. In part 4, conclusions are drawn and the remaining challenges are identified.

1. The Demographic Situation in Germany

Overall population trend. German society is faced with two incisive demographic developments. On the one hand, total population will decrease from eighty-two million today to less than sixty-nine million in 2050 – this is at least data forecast by the federal statistical office based on a set of conservative assumptions² (Statistisches Bundesamt, 2006a). On the other hand, there will be a drastic shift in the age structure, *i.e.*, the population is ageing dramatically (Table 1). In 2005, the percentage of the total population that was at least sixty-five years old stood at 19.3 per cent, in 2050 it will be thirty-three per cent (*ibid.*). This share of the population will increase even in absolute numbers, contrary to the overall population trend, namely from sixteen million in 2005 to nearly twenty-three million in 2050. During the same period, the share of people below the age of twenty will decrease from twenty per cent to just below fifteen per cent, and their absolute number will shrink drastically. A reduction from more than sixteen million young people below the age of twenty to only eleven million implies a slump of nearly forty per cent. The potential working-age population of twenty to sixty-four-year olds will decrease from just below sixty-one per cent to less than fifty-two per cent, *i.e.*, their absolute numbers will shrink from fifty million in the year 2005 to less than thirty-six million according to the estimate (*ibid.*). Combined with the dramatic shift in the age structure, the shrinking population becomes a gigantic challenge for the German society and economy.

Low birth rates, long life expectancy. The major reasons for this marked change are the low birth rate and the high life expectancy. The number of children per woman decreased further from the already low level of 1.45 in the year 1990 to only 1.34 children in 2004 (OECD, 2006a), which is markedly below the OECD average of 1.86 and 1.56, respectively (*ibid.*). And even the OECD averages still range below the level guaranteeing a stable population, namely about 2.1 children per woman. The fact that less children are born automatically leads to a higher weight of the elder

² The female birth rate is assumed to be 1.4 children. The life expectancy of a boy born in the year 2050 is assumed to be 83.5 years, for girls from the same cohort it is eighty-eight years. The annual net migration gain is estimated at 100,000.

population. This trend is strengthened further by the increasing life expectancy. In the former federal territory, the average life expectancy for men born between 1960 and 1962 was 66.9, for women it was 72.4 years. In the former German Democratic Republic (GDR), the life expectancy of the cohorts 1963 to 1964 was 68.3 years for men and 73.3 years for women. In the now united Germany, the men born between 2003 and 2005 can expect to live for 76.2 and women for 81.8 years, respectively (Destatis, 2006b).

Table 1. Change of population and age structure, 2005 to 2050

Age group	2005		2050	
	Absolute numbers (in million)	Share of population (per cent)	Absolute numbers (in million)	Share of population (per cent)
below 20-year olds	16,486	20.0	10,362	15.1
20-64 year olds	50,082	60.8	35,524	51.7
65-year olds and above	15,870	19.3	22,856	33.2
Total population	82,483	100	68,743	100

Source: Statistisches Bundesamt, 2006a.

Inward migration. Migration to Germany at current levels is not sufficient to stop the negative trend. The forecast of the statistical federal office is already based on the assumption of positive net migration of 100,000 people annually (Statistisches Bundesamt, 2006a), which implies 1.2 migrants per 1,000 inhabitants. The actual migration balance was 1.5 between 2001 and 2005, only slightly above this assumption. It was composed of 6.1 emigrants and 7.6 immigrants per 1,000 inhabitants. In 2005, in absolute numbers 483,600 people left the country and 579,300 immigrated (OECD, 2007a).

In 2006, more than fifteen million people with migration background lived in Germany, accounting for 18.6 per cent of total population (*Konsortium Bildungsberichterstattung*, 2006). About half (eight million people) of those are German citizens while the other half (7.4 million people) holds a foreign citizenship. German statistics list three groups of people with migration background: 5.5 million people who immigrated to Germany themselves (first generation migrants); 1.6 million people who didn't immigrate to Germany themselves but are children of parents that

immigrated (second generation migrants); 0.1 million people whose grandparents immigrated to Germany (third generation migrants).

Migration can only function as a solution if decisions on residence are not taken exclusively on social criteria (asylum), but also considering economic needs. The new immigration law passed in 2007 by the German parliament (Deutscher Bundestag, 2007a) acts as a barrier in this regard. It allows immigrants to work in Germany only if the gross annual salary yields Euro 80,000 or more. This automatically excludes foreigners who have completed their studies at a German higher education institution, as starting salaries even for highly qualified people rarely reach these heights. This leads to the paradoxical situation that Germany invests into the education of young people whom its labour markets need, but sends them home upon their successful graduation instead of keeping them. In this regard German immigration law needs urgent change.

Challenges for the welfare state. The shrinking and ageing population represents enormous challenges to the social security systems. Besides classical problem areas such as health and long-term care insurance, which automatically become more expensive with an ageing population, the pension insurance system represents a special problem. Other than in many countries it is not capital based, but funded from recurrent income (pay-as-you-go system). This means that the working population funds the pensions of the current generation of pensioners. As the group of pensioners increases permanently and the working-age population shrinks, the system automatically enters a demographically based disequilibrium. In response, first steps were taken in the last years to establish and promote private capital-based insurance as a voluntary add-on to the traditional system ("Riester-Rente").³ The statutory retirement age was increased from sixty-five to sixty-seven years (Deutscher Bundestag, 2007b). Whether these measures are adequate and sufficient remains disputed (see for example *Netzeitung*, 2007).

³ More information on the concrete design can be found at www.bmas.bund.de/BMAS/Navigation/Rente/Zusaetzliche-Altersvorsorge/privaten-altersvorsorge.html, retrieved 11 June 2007.

Consequences for education. Against the background of the problems described, it becomes clear that special efforts are required. In the future, less people must unfold the same or even more economic activity in order to cater for a greater number of elderly people. International trends such as globalisation and the shift towards the knowledge economy add to the challenge. The answer is “education, education, education”. It is education that determines the productivity of the economy and the international competitiveness of its companies, and thereby renders the social security systems robust in times of social change, contributing to social stability. If one looks at the political discourse in Germany, these insights are widespread, but they are only starting to be translated into concrete policies.

Successful investments in education require making optimal use of human potential, not leaving anyone behind. To achieve this, encompassing investments in the education system are needed and the system needs to be rendered fair and open. Nobody should be excluded from education and qualification for the labour market based on gender, age, social or cultural background. This holds true both for equity reasons and the sheer necessities of demographic change.

Educational situation of migrants. Having a migration background constitutes a systematic disadvantage. The test results of students with a migration background in numeracy and literacy according to the PISA study 2003 were markedly worse than those of the overall group (*Konsortium Bildungsberichterstattung*, 2006). What is particularly shocking is that achievements of the second generation of migrants have decreased compared to those of the first (*ibid.*).

Early streaming of students is a major feature of the German education system. Depending on achievements after primary school, students are assigned to three types of schooling: the ‘Hauptschule’ which was originally meant to be the major type of schooling but has degenerated into the least preferred option for the weakest students (regularly only up to grade 9), the ‘Realschule’ for students with average grades (up to grade 10), normally followed by vocational training or vocationally-oriented schooling which can open access to higher education, and the ‘Gymnasium’ (up to grade 12 or 13, soon only until grade 12 in all *Länder*) for the brightest students, opening up direct access to universities.

The distribution of students on these three types of schooling markedly depends on migration background. Across Germany, 16.6 per cent of students in grade nine are enrolled in a Hauptschule, 33.2 per cent at a *Gymnasium*. However, among students with a migration background in grade nine, 31.8 per cent are at a Hauptschule and only 24.6 per cent at a *Gymnasium*. Regarding vertical mobility, the “downward” mobility from *Gymnasium* to Realschule and from Realschule to Hauptschule is twice as high for migrants as for other students. Also, students with migration background have the highest share among those repeating grades or being subject to other deferrals in their course of studies, though this varies markedly among the sixteen German states, the *Länder* (*Konsortium Bildungsberichterstattung*, 2006). It is fatal that 19.7 per cent of male students with migration background leave school without any final certificate. For female migrants the share of 12.9 per cent is above average, too. The numbers for German males are 9.5 per cent and for German women 5.6 per cent, respectively (*ibid.*).

The problem of low participation rates in the education system is replicated in the age group of twenty-five- to thirty-five-year olds. In this group, 9.4 per cent of people with migration background do not possess any formal school-leaving certificate, while this is the case only for 1.6 per cent of people without migration background. Only 32.2 per cent possess a higher education entrance qualification, while 39.3 per cent without migration background do so. A total of 40.7 per cent has no vocational/professional certificate, while this holds only for 31.2 per cent of people without migration background (*ibid.*).

Looking at the specific migration constellation, only about one third of migrants below twenty-five years of age were not born in Germany. According to calculations of the Consortium for Educational Reporting (*ibid.*), 5.3 million people with migration background lived in Germany in 2005. In terms of numbers, migrants thus constitute by no means a marginal group, making up for 18.6 per cent of the German population.

Education by social background. The social background of a family, too, has decisive influence on a student’s educational career. Social segregation is often the consequence of the early streaming in the German education system (at the age of ten!) and the according institutional differentiation. The correlation between socio-economic background and

the type of schooling (OECD, 2004: 213 cc.) is particularly strong; within school types learning then takes places in relatively homogenous social groups. But even within school types, a strong correlation between social background and student achievements remains (*Konsortium Bildungsberichterstattung*, 2006).

Education by gender. As regards educational participation by gender, the general tendency in Germany is towards an evening out of differences. Up to the level of the first degree, there are even signs that female participation might soon surpass the one of males.

Regarding participation in primary and general secondary schools, there are no differences in male and female participation. As regards vocational/professional training, male participation is slightly higher with fifty-three per cent, at higher education institutions full gender balance has been achieved (*ibid.*).

If one differentiates more finely by types of school leaving certificates, disadvantages for the male participants become visible. While one 6.3 per cent of girls leave school without final certificate, this is the case for 10.3 per cent of boys. Also, it is a larger share of boys than of girls who reach only the lowest type of formal certificate, the *Hauptschulabschluss* (33.6 as compared to 22.5 per cent). Only 24.4 per cent of boys leave school with a general HE entrance qualification, while 32.3 per cent of girls achieve this highest level of secondary schooling.

Summary. Overall, there are clear signs of deficits in the German education system as regards inclusiveness and promotion of talent. Migrants, children from lower social backgrounds and boys partly perform significantly worse. If Germany wants to prepare adequately for the demographic change, it needs to start an education campaign that alleviates the above-mentioned problems. Germany can no longer afford this unfairness, also from an economic viewpoint. One important high-level political process is the recently initiated 'national integration plan' (Die Bundesregierung, 2007). This is a strategic initiative started by the federal government in 2007 bringing together a wide range of actors from all levels of the system to agree on common aims and concrete measures is a promising step in the right direction.

2. The Demographic Challenge for German Higher Education

2.1. *The German higher education system*

Before turning to the impact of these demographic developments on the German HE system, three aspects of this system shall be explained to give some context: the framework for HE policy making and its actors, the types of higher education institutions (HEIs) in the system and the degree structure which is currently under reform.⁴

2.1.1. The framework for higher education policy making and its actors

The federal system and state actors. An important condition for HE policy making in Germany is the federal system. The German constitution (Art. 75 Grundgesetz, GG) assigns the prime responsibility for HE to the sixteen *Länder* ('state') governments. Following a reform of federalism, in 2006 even the limited framework competence of the federal government that existed until recently has been abolished, with minor exceptions for the fields of access and recognition. As a consequence, also the former Federal Framework Act for HE (*Hochschulrahmengesetz*, henceforth 'Framework Act') that so far set the national framework for the sixteen *Länder* Acts for HE (*Landeshochschulgesetze*) or other forms of legal provision, is about to be abolished in 2007 (according to a cabinet proposal that did not pass parliament until December 2007). To the very limited extent that the federal government still has a say in HE, this is exercised by the Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung, BMBF*); henceforth referred to as 'federal ministry'). At the *Länder* level, the assignment of the HE portfolio to the research, education or culture ministries varies.

In the field of HE – not research policy, where it continues to play a major role – the federal ministry's formal powers are now confined to administering the federal needs-based student funding scheme (*BAföG*), to

⁴ Parts of this section heavily draw on the published doctoral thesis of one of the authors (Witte, 2006).

which it contributes the bulk of funds, and internationally representing German HE jointly with the *Länder* (Art. 23 GG). The Federal Framework Act for Higher Education still determines the legal reality in German HE as its abolition is a recent initiative. But as it has no immediate applicability to HEIs and the *Länder* have specified the Framework Act in different ways when translating it regionally, there are effectively sixteen different HE Acts at *Länder* level which can be expected to further diverge in the time to come.

To achieve a certain degree of material coherence between the different *Länder's* (higher) education policies, their education ministers meet in the 'Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* of the Federal Republic of Germany' (*Kultusministerkonferenz*, KMK). While KMK decisions and guidelines have no formal legal significance, they reflect the minimum consensus between sixteen *Länder* and therefore tend to be highly influential. Normally, they are translated with no or only minor adjustments into *Länder* policies. The federal and *Länder* parliaments—while they formally need to pass changes to *Länder* HE acts, respectively—are thus practically not very important for policy formulation.

The abolition of the competencies of the federal government in HE – not in research policy and funding, where it remains the major actor – has been a highly disputed political move, which has been criticised by virtually all organisations in German HE policy. It was part of an overall negotiation package redistributing consequences between the federal and the *Länder* level and a sacrifice made by the federal government to disentangle competencies. The change is too recent to evaluate consequences, but what is visible already now is that in spite of the important legal change, the de facto responsibility of the federal government for issues of national interest – and HE definitely is such an issue – has not been abolished. The mindsets and routines of *Länder* actors are still such that they watch out for federal support when it comes to major financial challenges in HE. This is the case in spite of the fact that some of the federal funds for HE (particularly in the area of buildings, a formerly joint task) have been transferred to the *Länder* along with the legal change. At the same time, the *Länder* are very wary of federal interference with their authority. So it seems difficult for the *Länder* to fulfil in practice the responsibility they have called for. Also, the above makes clear that it is structurally difficult in German HE to reach national

consensus in questions of national relevance, given the scattered, layered and entangled distribution of competencies in this policy field.

While the sixteen *Länder* formally have the same competences in the field of HE, in practice a range of divides plays a role in policy formulation, such as the one between Western and Eastern German *Länder* (often referred to as 'old' and 'new'), the one between richer and poorer *Länder*, also in terms of funding of HE (among the richer *Länder* are Baden-Württemberg and Bavaria, among the poorer ones many in the Northern and Eastern parts of Germany), and the one between larger (such as North-Rhine Westphalia and again, Baden-Württemberg and Bavaria) and smaller *Länder* (notably the *Länder* which are in fact cities, such as Berlin, Hamburg, and Bremen, or those with only one university, such as Saarland). The redistribution of funds between these *Länder* is in part assured by a mechanism referred to as *Länderfinanzausgleich*, but there is no particular redistribution mechanism in place for HE. This means that intra-German student flows are not accounted for, each *Land* bears the institutional costs for the students that choose to study in its HEIs irrespective of where they come from. This is a major issue because some of the poorer and smaller *Länder*, such as Berlin, Hamburg and Bremen, are high net-importers of students. Also, intra-German student flows are a major issue in the demographic context due to regionally different developments in this area, as will be discussed in section 2.2. The ability of the sixteen *Länder* to develop joint actions in response to these challenges and imbalances is structurally limited by the above-described political set-up of the system.

Other actors in HE policy. Besides the state actors, a number of further important organisations play a role in German HE policy, including the interest representation of HEIs, students, and employers, and a number of major buffer organisations such as the German Academic Exchange Council (*Deutscher Akademischer Austauschdienst*, DAAD) and the accreditation council (*Akkreditierungsrat*). Here, only those two organisations which play a role in the further analysis are presented.

The German rector's conference (*Hochschulrektorenkonferenz*, HRK) stands out as the single organisation representing the interest of state and state-recognised universities, *Fachhochschulen* (the main form of non-university HE in Germany) and other HEIs in Germany at national level. It unites the vice chancellors (*Rektoren* or *Präsidenten*) of these HEIs. While the

formal role of the HRK is limited, it is the publicly recognised voice of HEIs in Germany. Its board maintains a regular dialogue with the KMK and the – concerning HE policy now largely “toothless” – Federal Ministry.

The *Wissenschaftsrat* (‘Science Council’, WR) needs to be mentioned as an important advisory body in HE policy. It brings together high-ranking representatives from academia with those from Federal and *Länder* governments and thus functions both as an “instrument of cooperative federalism” and as a “mediating body (...) between scientists and policymakers” (Wissenschaftsrat, 2004). The WR’s recommendations generally pave the way for major changes in the general direction of HE policy.

2.1.2. Types of HEIs

The German HE system is characterised by an institutional dichotomy between universities and *Fachhochschulen* (the major type of non-university HEI in Germany, abbreviated as FH). Of the 257 HRK member institutions, eighty-one are universities and 116 are *Fachhochschulen*. The sixty other HEIs consist of forty-four colleges of arts and music with university status, six teacher-training colleges in Baden-Württemberg, eight church-run and two other institutions. The *Fachhochschulen* were created in the late 1960s, mostly from existing engineering colleges or business academies (*Ingenieurhochschulen, höhere Wirtschaftsfachschulen*) to cater for increasing student demand through applied degree programmes. These were to be offered by a type of institution that was supposed to maintain close links with business and be staffed with lecturers that held doctorates and were also practically experienced. They have to teach more than university lecturers and are paid less.

However, the political plan to channel the majority of students into the FH sector did not work out for a variety of reasons. Instead, the university sector continuously expanded without adequate funding and organisational or curricular changes. It was falsely assumed that the high student numbers of the late 1970s and the 1980s were only transitory. As a consequence, universities soon turned into mass institutions with high drop-out rates. FH capacities in many subjects were so limited that stricter grade point averages (GPAs) were imposed as entrance prerequisites (*numerus clausus*) in the 1980s than in corresponding university programmes. Today, about

two thirds of students study in the university sector and only one third in *Fachhochschulen*.

The relationship between the two types of HEIs is far from clear. In official jargon, universities and *Fachhochschulen* have always been 'different, but on a par'; with universities focusing on basic and applied research and offering research-oriented degree programmes up to the doctoral level, and *Fachhochschulen* offering professional education to a level roughly located between Bachelor and Master's, as well as conducting applied research. This has changed with the Bologna Process; since 1998 *Fachhochschulen* are allowed to offer Master's degrees and increasingly make use of this possibility. It is today a widely-shared idea that the FH sector should be upgraded, permeability between the institutional types increased, vocational links of university education enhanced and the overcrowded universities unburdened.

The Bologna Process is seized by policy-makers in Germany as a major opportunity for bringing about these changes, but the system is still in a state of transition (Witte, 2005; Witte, Huisman and Van der Wende, 2008). Both the traditional role distribution and the distribution of students across institutional types prove hard to change at the speed that some would hope for. At the same time, the demographic challenges described in this article call for a new approach to this issue, as the needed extension of the system can hardly be tackled in the traditional structures (Buch et al., 2006, p. 14).

2.1.3. Degree structure

As part of the Bologna Process, the German degree structure is currently in a state of transition from a binary system (Scott, 2005, pp. 32-43, Teichler, 1988 for a more sophisticated discussion of this characterisation) with long first degrees at both institutional types to an integrated two-cycle system for both institutional types.

Traditionally, German universities awarded three main types of degrees leading directly to the Master's level: *Diplom*, *Magister*, and *Staatsexamen* ('state exam'). *Fachhochschulen* awarded only one degree, the *Diplom* (FH),

roughly located between the Bachelor and the Master's level⁵. Traditionally, it was uncommon in Germany to return to university for a degree other than the doctorate once graduated. Consequently, the continuing-education sector at postgraduate level is not very developed. Apart from various non-degree courses, only a limited number of postgraduate two-year programmes existed, often leading to a *Diplom* degree.

Under the new degree structure, both universities and *Fachhochschulen* can offer both Bachelor and Master's degrees. While the length is allowed to vary in most *Länder* between three and four years for the Bachelor and between one and two years for the Master's degree, most HEIs have so far opted for three-year Bachelor and two-year Master's programmes. Only in the FH sector and at universities in engineering, Bachelor programmes of three and a half years (and Master's programmes of one and half years in consequence, adding up to the total maximum of five years) are pervasive. It is generally agreed and assumed that by 2010, the entire system will have made the transition to the Bachelor-Master's structure, but to date only 12.5 per cent of students are studying in the new structure⁶, while forty-eight per cent of programmes are already offered in the Bachelor or Master's form⁷ (HRK, 2007). The system still grapples with many transition problems, one of the foremost being how to fulfil the political expectations to improve study conditions and reduce drop-out significantly without having extra funding available. As the transition implies an increase in the total time to the Master's level from four and a half to five years at universities, and many *Fachhochschulen* introduce Master's degrees as well, this alone creates pressure on budgets.

The coincidence of the transition to the tiered degree structure and the demand fluctuations induced by the demographic and political changes increases reform pressure on the HE system (Witte and von Stuckrad, 2007).

⁵ The accretion 'FH' in brackets is meant to signal that it is not the same as a university *Diplom*.

⁶ Most recent numbers from the National Statistics Office are from Winter Semester 2005/2006.

⁷ In interpreting this comparatively high number, one has to take into account that at universities, each reformed *Diplom* or *Magister* programme normally yields at least one Bachelor and one Master's programme, which tends to inflate the picture.

2.1.4. Summary

All three described aspects of the German HE system – the political framework, the inherited role distribution and the degree structure – form a relevant part in the context in which the demographic challenge has to be tackled. The political framework makes concerted national action structurally difficult, the role distribution between universities and *Fachhochschulen* and particularly the distribution of students between them is unsuited for the future, and the coincidence of the reform of degree structure and an increase in student demand in the next years places huge demands on public budgets and the ability of all actors to respond flexibly.

2.2. *The demographic challenge*

In discussing the consequences of the demographic developments for the HE system, a notable difference between the general trends and those relevant for HE needs to be noted: while the overall trend is one of decline of potential student numbers, for the next fifteen years HEIs – particularly those in Western Germany – will be faced with one last wave of high demand from students in the traditional age groups entering HE. The complex challenges arising from this concomitance of contradictory trends are the subject of this part. First, the long-term declining demand is discussed, then expected the medium-term demand boom is presented.

2.2.1. Long-term declining demand

Overall, forecasts predict a marked decrease of the age group constituting the classical target group of HEIs, the fifteen- to twenty-five-year olds. From 9.6 million youth in the year 2005, numbers will probably go down to slightly below six million in 2050. Already in 2020, only 7.8 million people will be in the typical study age. Until 2020, this implies a decrease by eighteen per cent, until 2050 by thirty-eight per cent (Statistisches Bundesamt, 2006a).

The actual demand for HE however, is not only a result of the size of age cohorts. In addition the percentage of an age group acquiring an HE entrance qualification has a marked influence. The actual demand for HE then also depends on how many of those fulfilling the formal requirements

for entering HE want to enrol and how many opt for other paths, such as vocational or professional training.

In the year 2000, 37.2 per cent of the relevant age group acquired the study credential. Among those, seventy-eight per cent enrolled in HE until 2005. The nearly 290,000 new entrants in 2005 made up for 30.1 per cent of their age group. In the same year, 240,000 students completed their studies, amounting to 22.2 per cent of the relevant age cohort – the differences are due to drop out (Statistisches Bundesamt, 2007). These numbers illustrate that Germany is still away from the political aim that forty per cent of an age group should enrol in higher education (CDU, CSU, SPD, 2005, p, 37). At the same time, the high number of local *numerus clausus* (entry restrictions imposed by HEIs if demand exceeds supply) indicates that current supply is not even able to cater to current demand.

Along with stretching out to new target groups, HE supply needs to expanded. Decreasing student numbers are both undesirable and unlikely, even if the numbers of fifteen- to twenty-five-year olds should decrease. The long-term shrinking of the traditional client group for HE, both in absolute terms and as a share of the population, makes it more necessary than ever for higher education to tap those currently underused resources. Concretely: migration, social and gender background should not constitute obstacles to HE participation, and lifelong learning needs to become a regular task of HE. The challenge is to integrate as many people as possible into educational and productive processes. The following sections provide a snapshot of the current situation in these fields and the scope of the challenge.

Migration and higher education participation. Concerning transition rates from school to HE, there are clear differences between holders of a study credential with and without migration background. As shown in Part 1, young people with migration background are underrepresented among the group holding a HE entry qualification. However, they are more inclined to enter HE once they have achieved the necessary qualification. At least seventy-five per cent of those young people with migration background who have the entitlement decide to take up studies, while only seventy per cent of those without migration background do so (Konsortium Bildungsberichterstattung, 2006). This shows that negative selection according to migration background predominantly happens during

secondary school. However, HIS numbers indicate that problems continue at the level of HE, as suggested by especially low success rates of students with a migration background (Spiewak, 2007).

Social background and higher education participation. Educational opportunities and careers in Germany clearly depend on socio-economic background. Fifty-eight per cent of parents of those currently studying in Germany are themselves holders of an HE entrance qualification, and only fourteen per cent were enrolled in a *Hauptschule* (HIS, 2007a). Only thirteen per cent of students in the year 2006 indicated that their social background was „low”, thirty-eight per cent (HIS, 2007b) of students say to have a ‘high’ socio-economic background. Alarming, the group of students whose parents at least acquired the HE entrance qualification has been increasing rather than decreasing over time (ibid.). Fifty-one per cent of students have parents who reached a HE degree. This value has been increasing continuously since 1997, when it stood at thirty-seven per cent (ibid.). The correlation between educational careers of parents and children thus seems to have strengthened. This connection is particularly strong at universities where fifty-six per cent of students said that their parents held a HE degree. The distribution of educational achievement of parents at *Fachhochschulen* is much more balanced. Forty per cent of students’ parents hold a HE degree, twenty-five per cent a higher professional certificate (technician, vocational school, *Fachschule*) and thirty-three per cent a simple vocational certificate (vocational training, *Lehre*).

Looking at the composition of students by social background, a similar picture emerges. The group of students with a “high” social background has been increasing continuously since the end of the 1980s, while the share of students from “low” social backgrounds remained more or less constant (HIS 2007a: 136). The composition of students by social background is particularly unbalanced at universities: forty-two per cent of students come from the “high” socio-economic group, twenty-three per cent from elevated and middle groups and only eleven per cent from the lowest social group. At *Fachhochschulen*, the picture is more balanced, with only twenty-five per cent from the highest, twenty-six per cent from the elevated, thirty per cent from the middle and nineteen per cent from the lowest social group (HIS, 2007a). *Fachhochschulen* have thus proven to be more accessible to non-academic groups of society than universities.

Foreigners and higher education participation. The German HE system is highly attractive for international students. Among the two million students enrolled in the German HE system in 2006, 12.5 per cent were not German citizens (referred to as 'foreign students' – *Ausländische Studierende*), but only 9.5 per cent received their formal HE entrance qualification in other countries than Germany (referred to as 'educational foreigners' – *Bildungsausländer*) (Wissenschaft Weltoffen, 2007). The difference is through students with foreign citizenship who acquired their HE entrance qualification in Germany, such as some of those with migration background. In other words, "truly" international students accounted for 9.5 per cent of students in Germany. The main countries of origin of foreign students were China (eleven per cent), Turkey (nine per cent), Poland (6.1 per cent), Bulgaria (5.2 per cent), and the Russian Federation (4.8 per cent) (*ibid.*).

Overall, the share of international students is lower in Eastern than in Western Germany. In absolute numbers, there were about 190,000 international students (HIS, 2006). About three quarters studied towards their first degree, 12.5 per cent a second degree and seven per cent started their doctoral studies. Despite the high proportion of foreign students in the German system, they only accounted for 7.2 per cent of all graduates in 2005. This is a strong indicator for the assumption that foreign students mostly join the German HE system for a short to medium-term stay and leave before graduation. Partly this phenomenon can be explained by restrictive regulations on immigration and working permissions that be to be alleviated especially for highly trained employees (Seils, 2007).

The number of Germans studying abroad also reached a peak in 2004, yielding 69,000 (HIS, 2006).

Gender and higher education participation. Divergence by gender is particularly acute when analysing gender composition at the subject level. In the medical subjects such as human and veterinary medicine, the proportion of female students is particularly high (61.5 per cent and 83.7 per cent, respectively). It is high, too, in languages and cultural studies (69.9 per cent), while it is generally low in mathematics and sciences (36.5 per cent). Female participation is particularly low in engineering with only 20.3 per cent of students (Statistisches Bundesamt 2006: Table 18; all numbers from 2005).

While overall gender balance has been achieved up to the Master's level in Germany, this balance is lost beyond that level. Only 24.9 per cent of PhDs across all subjects are achieved by women, in engineering even 13.5 per cent only. And in spite of the high percentage of female students in languages and cultural studies, only forty-nine per cent of PhDs in this field are achieved by women. The gap widens further at the level of the Habilitation (traditionally needed in Germany to qualify for a professorial position) with only 25.1 per cent women. At the professor level, the gap is highest: only 14.6 per cent of professors are women (Statistisches Bundesamt, 2006: Table 18; all numbers from 2005).

Two general trends can thus be identified. First, access to education – including higher education – does not seem to diverge significantly by gender. On the other hand, a subject-specific analysis shows a clear gender bias between medicine, languages and cultural studies on the one and sciences and engineering on the one hand. Second, female participation strongly decreases with each additional qualification level from the Master's level onwards.

Lifelong learning and higher education participation. A look at graduate vocational training or tertiary training courses (referred to as 'further education', *Weiterbildung*) in Germany shows that participation is below the OECD average for the twenty-five to sixty-four-year olds. In the year 2003, only twenty-four per cent of this age group made use of such offers, as compared to an OECD average of thirty-two per cent. The number of 650 hours spent on average in further education during working life is only slightly lower than the OECD average of 669, though. An analysis by employment status of participants in further education reveals a bigger gap: while employed people in Germany spend an average of 263 hours in further education, it is 320 hours in OECD average (OECD 2006b: 385 cc). A recent study commissioned by the German government showed that German HEIs are not well positioned in the lifelong learning market for a range of reasons, including legal obstacles and wrong incentive structures (Hanft and Knust, 2007).

The consequences of the described situation for HE can be summarised as follows:

- Less traditional students: If there are less young people, there is less potential demand in the classical target group for HE of nineteen to twenty-four-year olds;
- Educational participation: The fewer young people are available for HE, the more important it becomes to mobilise all those who have the potential for an academic degree;
- Permeability: This also means that students who unfold their potential only beyond the foreseen selection thresholds should have still an option for entering HE;
- Foreigners: If a society does not bring forth sufficient academics, its HE system must be able to attract and integrate talented foreigners;
- Gender: In order to make full use of education potential, it is important that gender biases in fields of study that are in high demand on the labour market and where there are excess capacities at HEIs, such as in engineering and the sciences, are eliminated;
- Increasing interest in adult students: 'Further education' becomes an issue in a much wider sense than has been so far the case in the HE policy discourse in Germany, it becomes an important task and market for HEIs;
- In all these areas, much remains to be done in Germany, but the following phenomenon currently attracts most political attention away from these challenges.

2.2.2. Medium-term demand boom

Different from the decreasing long-run trend, forecasts show a drastic increase of young people with HE entrance qualifications in the next few years. According to calculations of the KMK, their number will increase from nearly 400,000 in 2005 to more than 490,000 in 2013 (KMK, 2007a) (Table 2). This is an increase by twenty-four per cent in only eight years.

Table 2. Forecast of students with HE study credential ("Hochschulzugangsberechtigte"), by Länder

	BW	BY	BE	BB	HB	HH	HE	MV	NI	NW	RP	SL	SN	ST	SH	TH	D
2005	53,595	46,690	16,740	14,344	3,365	7,784	28,860	8,072	36,963	103,543	16,842	5,386	20,647	11,897	11,450	12,526	398,704
2006	55,300	47,800	17,700	15,450	3,550	7,900	30,610	8,670	36,400	108,900	17,660	5,940	21,000	11,730	12,150	13,000	413,760
2007	57,400	50,400	18,000	15,650	3,730	8,410	31,490	8,170	39,600	113,700	19,280	5,970	20,900	19,630	12,880	12,800	438,010
2008	60,000	52,500	17,900	15,550	3,940	8,720	32,110	15,200	40,300	117,900	20,210	6,060	20,900	10,660	13,400	12,400	447,750
2009	61,600	54,700	17,900	15,550	3,740	8,530	32,660	7,180	41,900	119,800	20,930	9,130	18,000	9,650	14,530	10,300	446,100
2010	63,500	56,500	16,400	13,650	3,940	13,130	33,260	5,340	44,000	121,300	21,960	6,390	13,900	7,200	14,940	7,900	443,310
2011	64,500	90,600	14,900	10,650	3,940	8,380	33,360	4,640	69,800	119,700	21,630	6,190	11,700	6,020	14,840	6,790	487,640
2012	86,900	58,700	22,200	13,250	5,140	7,940	35,450	3,960	45,500	119,900	21,530	5,980	11,500	5,530	14,640	6,160	464,280
2013	67,300	58,200	14,500	8,850	3,940	8,030	41,250	3,800	45,200	176,500	21,430	5,960	12,200	4,980	14,540	5,840	492,520
2014	63,100	58,300	14,700	8,850	3,940	8,140	39,310	4,600	45,500	119,500	21,260	5,860	12,600	5,170	14,540	6,100	431,470
2015	63,300	59,700	15,200	9,350	3,940	8,340	33,200	5,040	46,400	121,600	21,580	5,970	13,500	5,400	14,760	6,710	433,990
2016	62,800	58,800	15,800	9,550	3,840	8,230	32,230	5,410	45,800	118,100	22,560	5,550	14,400	5,640	23,070	7,140	438,920
2017	62,100	58,200	17,500	10,450	3,840	8,110	31,770	5,250	44,600	115,800	22,140	5,450	14,600	5,860	15,270	6,970	427,910
2018	61,900	58,500	16,700	10,550	3,840	8,010	31,310	5,400	43,800	114,700	21,430	5,340	14,900	5,870	15,150	7,090	424,490
2019	60,900	57,500	15,800	10,350	3,840	7,890	30,690	5,430	42,700	115,700	20,950	5,030	15,000	5,980	14,840	7,100	419,700
2020	58,400	56,000	15,700	10,150	3,740	7,790	30,420	5,350	41,200	110,500	20,840	5,020	14,900	5,890	14,320	7,100	407,320

Key for abbreviations: BW = Baden-Württemberg, BY= Bavaria, BE= Berlin, BB = Brandenburg, HB = Bremen, HH = Hamburg, HE = Hesse, MV = Mecklenburg-Western Pomerania, NI = Lower Saxony, NW = North Rhine-Westphalia, RP = Rhineland-Palatinate, SL = Saarland, SN = Saxony, ST = Saxony-Anhalt, SH = Schleswig-Holstein, TH= Thuringia, D = Germany.

Source: KMK, 2007a.

New calculations from the Centre for Higher Education Development (CHE) which are based on conservative assumptions¹ show what this boom will imply for HEIs nationwide: from 2007 to 2020, there will be an additional 910,000 applicants for HE as compared to the average over the period from 2000 to 2004. The annual numbers of applicants (only counting those who have acquired their HE entrance qualification in Germany) will increase from 300,000 in the year 2005 to nearly 360,000 in the year 2013, the expected peak of the phase of high student demand (Statistisches Bundesamt, 2007; Gabriel and von Stuckrad, 2007).

Two-fold reason for medium-term increase in student demand. This marked increase has two main reasons.

- First, the children of the “baby boomers” (the last high-birth cohorts) leave secondary schools and want to enrol in HE at least at common transition rates, a truly demographic effect.
- Second, several *Länder* are moving from thirteen years of schooling up to the *Abitur* – the school-leaving certificate of the *Gymnasium* – to twelve years. Distributed over a period of seven years between 2007 and 2016, this will lead to double cohorts of graduates leaving secondary schools with the *Abitur* (Table 3)².

¹ The transition rate between secondary school and HE from the year 2020 is extrapolated, also taking into account the deferred take up of HE due to military service, vocational training and voluntary social service (*Freiwilliges Soziales Jahr*). Also, intra-German mobility rates between the *Länder* from the year 2005 are extrapolated. Potential applicants having acquired their HE entrance qualification abroad are not included, i.e. they are treated as if their absolute numbers would remain constant. Stronger participation rates in the education system or other normative assumptions (that could be turned into reality by targeted political measures) are thus not included in the model.

² As many potential applicants do not acquire their HE entrance qualification via the classical path, but for example via other types of secondary education, transition years after vocational training and/or evening schools, the double *Abitur* cohorts do not translate into a doubling of potential applicants. Also, students often do not enrol in HE in the year in which they have acquired their study credential. This is because there is obligatory military service for young males in Germany. Also, even holders of the *Abitur* sometimes prefer to first complete vocational training before commencing their studies (see footnote 8). This is particularly the case for students at *Fachhochschulen*, as witnessed by the high average age of new entrants at *Fachhochschulen* of 22.6 years. Also at universities, the average age of new entrants is comparatively high, though, yielding 21.2 years (Statistisches Bundesamt, 2006c). Nevertheless, the school reform will have effect upon the demand for HE.

Table 3. The double *Abitur* cohorts

2007	Saxony-Anhalt
2008	Mecklenburg-Western Pomerania
2009	Saarland
2010	Hamburg
2011	Bavaria, Lower Saxony
2012	Baden-Württemberg, Berlin, Brandenburg, Bremen
2013	Hesse, North Rhine-Westphalia
2014	Hesse
2016	Schleswig-Holstein

Source: Statistisches Bundesamt, 2006c.

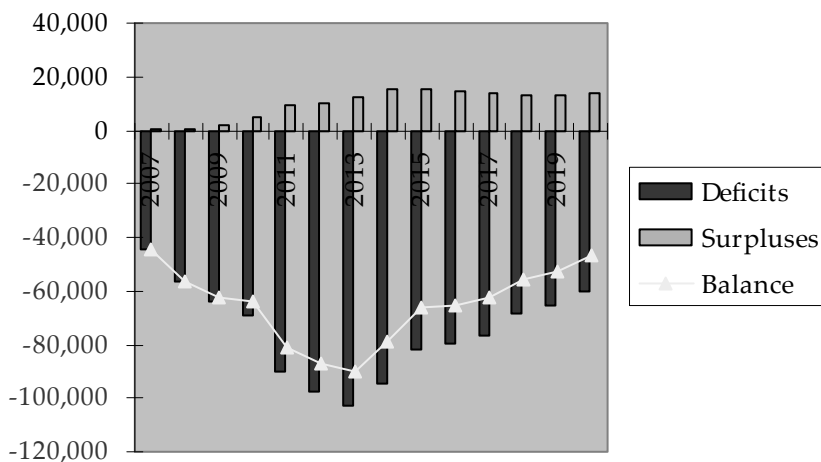
It can thus be expected that the combination of demographic developments and the political measure of a shortening of schooling to twelve years will lead to an increase in student demand in the years until 2020 and beyond. The number of graduates with HE entrance qualifications after 2020 can only be estimated. A higher participation rate in schools leading to formal HE entrance qualifications would enlarge the pool of potential applicants for HE institutions. For Germany as a whole, nearly 90,000 extra applicants can be expected in the year 2013 alone as compared to the average over the years 2000 to 2004 (Gabriel and von Stuckrad, 2007). This demand increase constitutes the dominant trend for the country as a whole.

East-West dimension. At the same time, a more detailed analysis reveals that developments are markedly different in the Eastern German *Länder* (referred to a “new” *Länder* in Germany) including Berlin. In the year 2015, an excess capacity of about 16,000 study places can be expected in these *Länder* as compared to the average numbers of new entrants between 2000 and 2004³. Overall, the demand deficit adds up to nearly 140,000 potential new entrants up to the year 2020.

³ These numbers are calculated by extrapolating average student numbers between 2000 and 2006 in the different *Länder*, as there is no information on capacity as such. The other assumptions are the same as in footnote 8, *i.e.*, constant transition rates, foreign students not taken into account, deferred take up accounted for, etc.

In the Western German – or ‘old’ – *Länder* (excluding Berlin), the number of additional applicants will increase to more than 100,000 in the year 2013, yielding a total of 1,050,000 additional applicants until 2020 (Figure 1).

Figure 1. Deficits and surpluses of study capacities, 2007 to 2020



Source: Gabriel and von Stuckrad, 2007.

Summing up the extrapolated deficits in the Eastern and the surpluses in the Western German *Länder*, the net excess demand will yield 910,000 additional applicants over the period from 2007 to 2020 (Gabriel and von Stuckrad, 2007). Given the markedly different developments and the federal structure conditioning HE policy, the analysis of student demand has to be differentiated by *Länder*.

Intra-German student mobility. In addition, student mobility within Germany, *i.e.*, between the *Länder*, has to be taken into account (see Annex, Tables 4 – 6). In the year 2005, 31.7 per cent of young people started their studies in another *Land* than the one in which they acquired their study credential (KMK 2007b). With 79.9 per cent of new entrants with a HE entrance qualification from their own territory, North Rhine-Westphalia is the *Land* with the lowest outward mobility, followed from

the South-German *Länder* Bavaria (75.4 per cent), and Baden-Württemberg (74.2 per cent). The two city states Hamburg (35.0 per cent) and Bremen (39.6 per cent) have the lowest share of students from their own territory. This is because they have many HEIs compared to their population size and therefore attract many of their students from beyond their 'borders'. These numbers show that student flows between *Länder* have a marked influence on student demand. Currently, student mobility is particularly high between neighbouring *Länder*.

Considering the expected excess capacities in Eastern Germany, from a national perspective it would make sense that students increasingly move from the West to the East in order to help Western German HEIs cope with the increased student demand. The contrary is currently the case: The Eastern *Länder* are net exporters (!) of students to the West. While only about 8,300 students from the Western *Länder* (including Berlin) began their studies at an Eastern German HEI, 14,900 new entrants moved into the opposite direction, yielding a negative balance of 6,600 new entrants for Eastern Germany.

This negative net migration is due to several reasons. On the one hand, the academic regional labour markets in the Western *Länder* offer better employment opportunities than those in Eastern Germany, which is faced with high structural unemployment. This aspect can only become relevant during studies with a view to possibilities for student jobs, and the transition to employment upon the completion of studies. Also, Eastern German *Fachhochschulen* have clearly focused their programme offer on engineering, which is in low demand with women. And it is especially young women who leave Eastern Germany in order to take up their studies in the West (Dohmen, 2007).

The special situation in Eastern Germany. Thus, the HE systems of the Eastern German *Länder* are confronted with a twofold challenge: decreasing traditional client age groups for HE from 2009 onwards at the latest, and continued negative net migration to Western Germany. The difficult financial situation in most of these *Länder* in connection with the recent strengthening of their competences in HE renders it obvious for them to reduce their study capacities significantly in response. In the current system they have no incentives to act according to national interest (except for the incentives generated by the "higher education

act", see below). From a national perspective, such orientation is irrational given the massive increase in national student demand from 2010 onwards and the long-term commitments involved in building up HE capacity.

Two *Länder* case studies. Two case studies shall be used to illustrate how much the situation of HEIs can differ between the respective *Länder*. The South-German *Land* Baden-Wurttemberg is chosen as a typical representative of the 'old', Saxony as a typical example of the 'new' *Länder*.

Case study Baden-Wurttemberg

In Baden-Wurttemberg, the number of students entitled to enter HE will increase from 57,400 in the year 2007 to 86,900 in the year 2012 (KMK 2007a), an increase by 51.4 per cent. The especially high increase is caused by the double *Abitur* cohort in this year. For Baden-Wurttemberg, this development implies that its own HEIs will be confronted with higher demand for years to come. According to CHE calculations, the demand peak will only be reached in the year 2013, when an expected additional 21,200 new applicants will want to enter HE as compared to the average numbers between 2000 and 2004, an increase of 61.4 per cent (Gabriel and von Stuckrad, 2007).⁴ The dimension of the challenge becomes even more vivid when looking at student numbers.

Intra-German student mobility is already accounted for in these numbers, assuming constant rates as compared to today. This student mobility is not very high in the case of Baden-Wurttemberg. About three quarters of holders of a HE entrance qualification stay in their *Land*. Notable outward mobility only takes place to Bavaria (8.9 per cent), North Rhine-Westphalia (four per cent) and Hesse (3.7 per cent). Overall, inward and outward mobility are balanced (Table 4). Therefore, unless student mobility changes, the pressure on HEIs in Baden-Wurttemberg is largely independent from developments in other *Länder*.

⁴ These numbers are based the assumptions explained in footnote 8.

Case study Saxony

As in all new *Länder*, the number of young people with a HE entry qualification will shrink in Saxony, in this case from 20,900 in the year 2007 to 11,500 in the year 2012 (KMK 2007a). This is a decrease by forty-five per cent. Schooling time up to the *Abitur* does already take twelve years in Saxony, so there will be no double *Abitur* cohort.

According to CHE calculations, the programme supply of the Saxonian HEIs will be consistently confronted with a lower demand than was the case on average in the period from 2000 to 2004 (Gabriel and von Stuckrad, 2007)⁵. The bottom will be reached in 2014, when HEIs can expect nearly 5,800 new entrants less, a decrease of thirty-six per cent as compared to the average of the period from 2000 to 2004. Over the entire period from 2007 to 2020, 53,900 study places become free in Saxony.

Looking at intra-German student mobility, only sixty-three per cent of first-year students come from Saxony's own territory. Further relatively large groups come from Thuringia (7.9 per cent) and Saxonia-Anhalt (7.4 per cent) (Table 5), two other Eastern German *Länder* prone to a negative demographic trend. These incoming students thus cannot compensate for the negative demographic trend in Saxony. Five per cent of Saxonian credential holders move to the Northern neighbour Saxonia-Anhalt and six per cent to the Southern neighbours Bavaria and Thuringia. While the group of Saxonians in Saxonia-Anhalt is relatively strong with nearly eleven per cent, it is negligible in Bavaria with only two per cent of all students there (Table 6).

⁵ The assumptions are the same as those described in footnote 8.

Table 4. Intra-German mobility matrix of higher education entrants 2005, absolute numbers

	Land in which student chooses to study			Land in which HE entrance qualification was awarded																TH	Abroad	n. a.
	Total	BW	BY	BE ¹⁾	BB	HB	HH	HE	MV	NI	NW	RP	SL	SN	ST	SH						
Total	290,192	38,257	37,883	12,631	9,278	2,496	6,172	22,260	5,850	25,878	65,439	13,389	3,901	15,403	8,871	8,266	9,730	3,316	1,172			
Baden-Wuerttemberg	38,201	28,361	2,069	293	269	80	152	1,337	125	724	1,406	1,599	201	318	197	247	305	515	3			
Bavaria	41,629	3,386	31,375	328	275	41	141	902	129	745	1,216	362	86	878	237	250	776	501	1			
Berlin ²⁾	14,488	596	436	7,577	2,216	64	126	243	465	485	668	94	28	374	385	164	230	337	-			
Brandenburg	5,751	101	69	1,750	2,674	10	27	58	134	101	128	16	7	320	177	43	77	59	-			
Bremen	4,154	75	61	63	47	1,452	98	64	74	1,637	271	24	2	21	38	137	32	58	-			
Hamburg	9,951	311	310	170	155	107	3,945	193	331	1,100	619	89	24	124	114	1,234	88	194	843			
Hesse	24,881	1,422	998	293	245	66	116	15,102	135	1,341	1,981	1,230	129	345	289	222	710	247	10			
Mecklenburg-Western Pomeran	5,230	97	41	341	625	23	95	42	2,975	239	136	29	3	156	129	180	88	31	-			
Lower Saxony	21,333	348	278	221	342	315	503	575	329	13,797	2,200	125	13	243	682	753	372	211	26			
North-Rhine Westphalia	68,163	1,535	1,043	613	418	203	326	1,359	254	3,572	54,457	1,585	186	438	316	522	342	706	288			
Rhineland-Palatinate	14,637	1,180	298	85	84	30	44	1,789	38	301	1,204	7,767	1,285	122	60	99	112	139	-			
Saarland	2,780	167	56	24	16	3	12	50	5	48	110	278	1,906	17	6	18	13	51	-			
Saxony	16,317	286	357	363	1,067	25	74	207	268	296	340	70	10	10,250	1,201	82	1,296	125	-			
Saxony-Anhalt	7,410	106	132	190	408	10	25	70	104	414	157	39	5	786	4,434	53	424	52	1			
Schleswig-Holstein	7,118	102	83	109	142	58	452	82	388	880	316	33	7	69	79	4,214	56	48	-			
Thuringia	8,149	184	277	211	295	9	36	187	96	198	230	49	9	942	527	48	4,809	42	-			

¹⁾ Award of the HE entrance qualification in Berlin (West) and (East); ²⁾ Numbers for Berlin (West) and (East).

Source: KMK, 2007b.

Table 5. Intra-German mobility matrix of higher education entrants 2005, "import matrix"

Land in which student chooses to study	Land in which HE entrance qualification was awarded																		
	Total	BW	BY	BE ¹⁾	BB	HB	HH	HE	MV	NI	NW	RP	SL	SN	ST	SH	TH	Abroad	na.
Total	100	13.2	13.1	4.4	3.2	0.9	2.1	7.7	2.0	8.9	22.6	4.6	1.3	5.3	3.1	2.8	3.4	1.1	0.4
Baden-Wuerttemberg	100	74.2	5.4	0.8	0.7	0.2	0.4	3.5	0.3	1.9	3.7	4.2	0.5	0.8	0.5	0.6	0.8	1.3	0.0
Bavaria	100	8.1	75.4	0.8	0.7	0.1	0.3	2.2	0.3	1.8	2.9	0.9	0.2	2.1	0.6	0.6	1.9	1.2	0.0
Berlin ²⁾	100	4.1	3.0	52.3	15.3	0.4	0.9	1.7	3.2	3.3	4.6	0.6	0.2	2.6	2.7	1.1	1.6	2.3	-
Brandenburg	100	1.8	1.2	30.4	46.5	0.2	0.5	1.0	2.3	1.8	2.2	0.3	0.1	5.6	3.1	0.7	1.3	1.0	-
Bremen	100	1.8	1.5	1.5	1.1	35.0	2.4	1.5	1.8	39.4	6.5	0.6	0.0	0.5	0.9	3.3	0.8	1.4	-
Hamburg	100	3.1	3.1	1.7	1.6	1.1	39.6	1.9	3.3	11.1	6.2	0.9	0.2	1.2	1.1	12.4	0.9	1.9	8.5
Hesse	100	5.7	4.0	1.2	1.0	0.3	0.5	60.7	0.5	5.4	8.0	4.9	0.5	1.4	1.2	0.9	2.9	1.0	0.0
Mecklenburg-Western Pomeran	100	1.9	0.8	6.5	12.0	0.4	1.8	0.8	56.9	4.6	2.6	0.6	0.1	3.0	2.5	3.4	1.7	0.6	-
Lower Saxony	100	1.6	1.3	1.0	1.6	1.5	2.4	2.7	1.5	64.7	10.3	0.6	0.1	1.1	3.2	3.5	1.7	1.0	0.1
North-Rhine Westphalia	100	2.3	1.5	0.9	0.6	0.3	0.5	2.0	0.4	5.2	79.9	2.3	0.3	0.6	0.5	0.8	0.5	1.0	0.4
Rhineland-Palatinate	100	8.1	2.0	0.6	0.6	0.2	0.3	12.2	0.3	2.1	8.2	53.1	8.8	0.8	0.4	0.7	0.8	0.9	-
Saarland	100	6.0	2.0	0.9	0.6	0.1	0.4	1.8	0.2	1.7	4.0	10.0	68.6	0.6	0.2	0.6	0.5	1.8	-
Saxony	100	1.8	2.2	2.2	2.2	6.5	0.2	0.5	1.3	1.6	1.8	2.1	0.4	0.1	62.8	7.4	0.5	7.9	0.8
Saxony-Anhalt	100	1.4	1.8	2.6	5.5	0.1	0.3	0.9	1.4	5.6	2.1	0.5	0.1	10.6	59.8	0.7	5.7	0.7	0.0
Schleswig-Holstein	100	1.4	1.2	1.5	2.0	0.8	6.4	1.2	5.5	12.4	4.4	0.5	0.1	1.0	1.1	59.2	0.8	0.7	-
Thuringia	100	2.3	3.4	2.6	3.6	0.1	0.4	2.3	1.2	2.4	2.8	0.6	0.1	11.6	6.5	0.6	59.0	0.5	-

¹⁾ Award of the HE entrance qualification in Berlin (West) and (East); ²⁾ Numbers for Berlin (West) and (East).

Source: KMK, 2007b.

Table 6. Intra-German mobility matrix of higher education entrants 2005, "export matrix"

Land in which student chooses to study	Land in which HE entrance qualification was awarded																
	Total	BW	BY	BE ¹⁾	BB	HB	HH	HE	MV	NI	NW	RP	SL	SN	ST	SH	TH
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Baden-Wuerttemberg	13.2	74.1	5.5	2.3	2.9	3.2	2.5	6.0	2.1	2.8	2.1	11.9	5.2	2.1	2.2	3.0	3.1
Bavaria	14.3	8.9	82.8	2.6	3.0	1.6	2.3	4.1	2.2	2.9	1.9	2.7	2.2	5.7	2.7	3.0	8.0
Berlin ²⁾	5.0	1.6	1.2	60.0	23.9	2.6	2.0	1.1	7.9	1.9	1.0	0.7	0.7	2.4	4.3	2.0	2.4
Brandenburg	2.0	0.3	0.2	13.9	28.8	0.4	0.4	0.3	2.3	0.4	0.2	0.1	0.2	2.1	2.0	0.5	0.8
Bremen	1.4	0.2	0.2	0.5	0.5	58.2	1.6	0.3	1.3	6.3	0.4	0.2	0.1	0.1	0.4	1.7	0.3
Hamburg	3.4	0.8	0.8	1.3	1.7	4.3	63.9	0.9	5.7	4.3	0.9	0.7	0.6	0.8	1.3	14.9	0.9
Hesse	8.6	3.7	2.6	2.3	2.6	2.6	1.9	67.8	2.3	5.2	3.0	9.2	3.3	2.2	3.3	2.7	7.3
Mecklenburg-Western Pomeran	1.8	0.3	0.1	2.7	6.7	0.9	1.5	0.2	50.9	0.9	0.2	0.2	0.1	1.0	1.5	2.2	0.9
Lower Saxony	7.4	0.9	0.7	1.7	3.7	12.6	8.1	2.6	5.6	53.3	3.4	0.9	0.3	1.6	7.7	9.1	3.8
North-Rhine Westphalia	23.5	4.0	2.8	4.9	4.5	8.1	5.3	6.1	4.3	13.8	83.2	11.8	4.8	2.8	3.6	6.3	3.5
Rhineland-Palatinate	5.0	3.1	0.8	0.7	0.9	1.2	0.7	8.0	0.6	1.2	1.8	58.0	32.9	0.8	0.7	1.2	1.2
Saarland	1.0	0.4	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.2	2.1	48.9	0.1	0.1	0.2	0.1
Saxony	5.6	0.7	0.9	2.9	11.5	1.0	1.2	0.9	4.6	1.1	0.5	0.5	0.3	66.5	13.5	1.0	13.3
Saxony-Anhalt	2.6	0.3	0.3	1.5	4.4	0.4	0.4	0.3	1.8	1.6	0.2	0.3	0.1	5.1	50.0	0.6	4.4
Schleswig-Holstein	2.5	0.3	0.2	0.9	1.5	2.3	7.3	0.4	6.6	3.4	0.5	0.2	0.2	0.4	0.9	51.0	0.6
Thuringia	2.8	0.5	0.7	1.7	3.2	0.4	0.6	0.8	1.6	0.8	0.4	0.4	0.2	6.1	5.9	0.6	49.4

¹⁾ Award of the HE entrance qualification in Berlin (West) and (East); ²⁾ Numbers for Berlin (West) and (East).

Source: KMK, 2007b.

Table 7. Forecast for Baden-Württemberg

Year	Forecast of students with a HE entrance qualification ¹⁾	Forecast of additional entrants into HE as compared to average numbers 2000-2004 ²⁾	Increase as compared to average numbers 2000-2004 (in per cent)
2007	57,400	8,190	23.7
2008	60,000	9,922	28.7
2009	61,600	11,460	33.1
2010	63,500	12,708	36.7
2011	64,500	14,485	41.9
2012	86,900	19,836	57.4
2013	67,300	21,238	61.4
2014	63,100	16,713	48.3
2015	63,300	14,901	43.1
2016	62,800	14,615	42.3
2017	62,100	13,565	39.2
2018	61,900	12,964	37.5
2019	60,900	12,514	36.2
2020	58,400	11,501	33.3

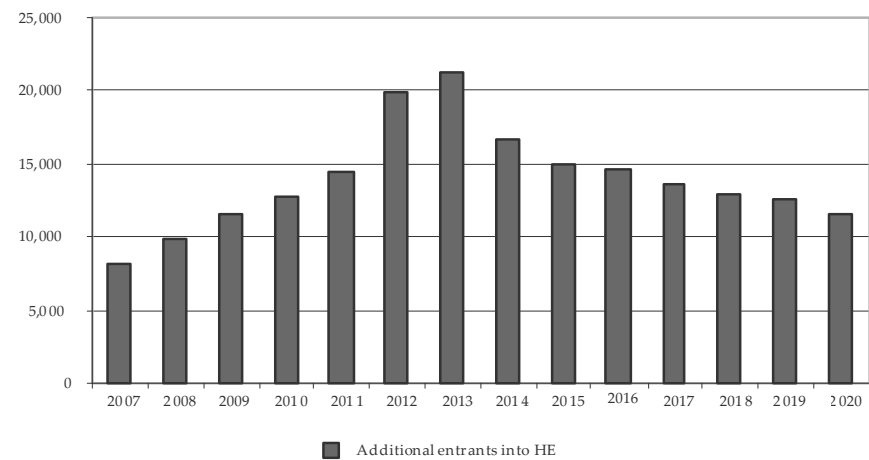
Sources: ¹⁾ KMK, 2007a ; ²⁾ CHE calculations.

Table 8. Forecast for Saxony

Year	Forecast of students with a HE entrance qualification ¹⁾	Forecast of additional entrants into HE as compared to average numbers 2000-2004 ²⁾	Increase as compared to average numbers 2000-2004 (in per cent)
2007	20,900	-233	-1.4
2008	20,900	-68	-0.4
2009	18,000	-922	-5.7
2010	13,900	-2,569	-15.9
2011	11,700	-4,089	-25.2
2012	11,500	-4,942	-30.5
2013	12,200	-5,467	-33.7
2014	12,600	-5,760	-35.5
2015	13,500	-5,645	-34.8
2016	14,400	-5,233	-32.3
2017	14,600	-4,936	-30.5
2018	14,900	-4,768	-29.4
2019	15,000	-4,636	-28.6
2020	14,900	-4,634	-28.6

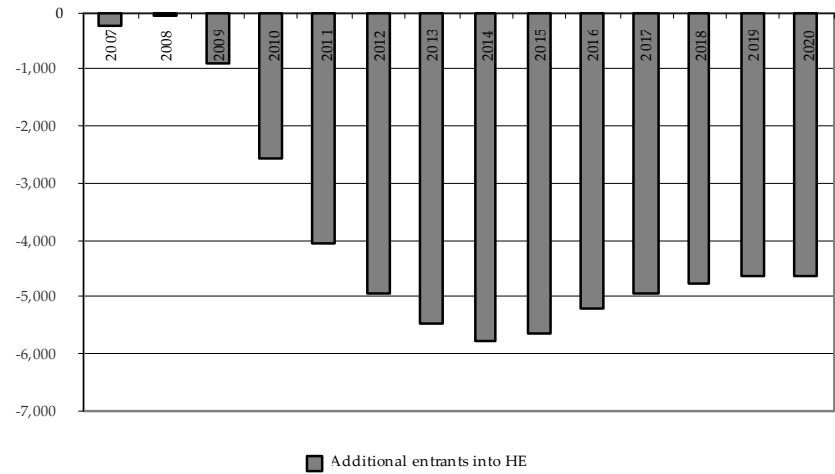
Sources: ¹⁾ KMK, 2007a ; ²⁾ CHE calculations.

Figure 2. Forecast for Baden-Wurttemberg



Source: CHE calculations. Additional entrants into HE as compared to average numbers 2000-2004.

Figure 3. Forecast for Saxony



Source: CHE calculations. Additional entrants into HE as compared to average numbers 2000-2004.

2.2.3. Summary

Overall, the demographic challenge facing the German HE system is both acute and complex. Answers need to be found for the period of high student demand facing HEIs in the “old” *Länder* at least until 2020, but also for the slump taking place in the classical client group of HE in the “new” *Länder* already. In the medium run, the entire country will then be confronted with the shrinking and ageing of its population. It is therefore untenable that participation in HE is clearly biased by migration, social background and gender, and participation in lifelong learning is underdeveloped. Against this background, the high student demand with its peaks in the next decade is a unique chance for Germany, a probably last opportunity qualify huge numbers of young, well-educated people with the traditional HE entrance qualifications in the ways German HEIs are used to – but it should not let us forget that urgent action is needed to prepare Germany and its HEIs for demographic change. This will soon require much more profound changes in the HE system not only in terms of scale, but in terms of views and practices.

3. The Political Answer

Against this background, it is worrying that the response of national HE policy is so far nearly exclusively concentrated on dealing with the overall increase in student demand up to 2010, at most up to 2020, and the uneven distribution of this increase between Eastern and Western German *Länder*. Given the federal structure of German HE policy, arriving at a national response to this part of the challenge at all was not self-evident and required concerted efforts and good will from all parties.

This part presents the major measures taken so far. Given the above, the bulk of this part is on the political answer to the medium-term demand boom. Before however, the existing responses to the long-term issues shall at least be scanned.

3.1. Addressing the long-term declining demand

As has been stated above, the main potential for counter-balancing the long-term decrease in the age groups that constitute the traditional clients of HE is to increase the share of young people entering HE by overcoming existing restrictions due to migration and social background or gender, and by establishing lifelong learning as one of the major tasks of HEIs. This section provides examples of measures taken in this area without aiming to provide a full account.

A couple of overarching initiatives have recently been taken by the federal government to bundle efforts related to demographic change and education, a national qualification initiative ('Nationale Qualifizierungsoffensive') focusing on the emerging shortage of qualified experts in engineering and science a national integration plan ('Nationaler Integrationsplan') focusing on the educational achievement of migrants, and an initiative focussed directly on demographic change and lifelong learning ('Erfahrung ist Zukunft'). All three largely work through soft tools such as organising round tables, conferences and bringing actors to agree on voluntary commitments and statements of intent as the federal government has only weak formal competence in the field. While these initiatives are still in the infancy, they are first steps towards a strategic, holistic approach to the challenges. At least the public discourse on issues related to demographic change, education and integration has notably changed in the course of 2007; the issues start being noticed and acknowledged by policy-makers, notably by Chancellor Angela Merkel (Merkel, 2007). The measures taken in the context of these initiatives are presented in more detail below.

Migration. The entitlements granting access to HE are regulated by law in Germany, and these legal provisions were traditionally considered as main means for guaranteeing equal opportunity. As HEIs were not generally allowed to select students in most fields of study until very recently, outright access discrimination was not an issue and the structural discrimination created by the education system was not widely recognised. As has become clear from Parts 1 and 2, the main educational obstacles for migrants lie in the school system, out of reach for HE policy. These receive increased attention in Germany in the context of the PISA results, but have been discussed more in equity terms than as an issue of common interest.

This is currently starting to change: in July 2007 Chancellor Angela Merkel invited to a national integration conference, where a national integration plan (Nationaler Integrationsplan) was passed that united 400 commitments and measures of a wide range of public and private actors at local, *Länder* and federal level under the umbrella of shared goals (Die Bundesregierung, 2007). Many of these measures relate to education; it is however yet too early to assess to what degree the voluntary commitments will make a difference.

Also, the targeted support of talented migrants has recently entered the focus of a range of foundations in Germany. Since five years, the Hertie foundation has supported the school career of talented youth with a migration background with money and counselling. The Vodafone foundation provides funding for students with a migration background at private universities (*Vodafone Chancen*). With earmarked financial support from the federation, the foundations supporting students with outstanding talent (*Begabtenförderungswerke*) have discovered migrants and their children as a target group and are reaching out to them with special marketing measures. The national integration plan presented above might contribute to more co-ordinated and increased efforts in this field (Spiewak, 2007).

Social background. What has been said about the discrimination of migrants similarly holds true for social background: as selection upon entry to HE did not play a major role until recently, direct discrimination according to social background was not an issue. Disadvantages were more indirect, the main barrier lying in the low percentage of students from low social backgrounds reaching the HE entrance qualification. Currently increased efforts to change this are undertaken by the 'Education Action Council' (*Aktionsrat Bildung*), focusing on improved permeability of the school system (VBW, 2007).

In November 2007, Chancellor Angela Merkel invited the heads (*Ministerpräsidenten*) of the *Länder* to an education summit (*Bildungsgipfel*) which shall take place in 2008 and shall focus on the emerging scarcity of experts in the fields of engineering, information technology and science. This invitation is part of the national qualification initiative announced after a cabinet conclave in summer 2007 in Meseburg. It is a response to increasing worries in the government on low student numbers and high drop-out rates in international comparison, as well as the high number of

youth without formal school-leaving certificate. The aim of the initiative is to get more young people to enrol in HE and reduce drop-out rates. At the same time, HEIs shall open up for qualified professionals without the classical formal HE entrance qualifications. Towards this end, the federal education minister shall collaborate with other federal ministries and with the *Länder* ministries in charge of HE (WUW, 2007). The initiative is highly dependent on the goodwill of all participants given the poor formal competences of the federal government in the field, but the support of the Chancellor is a strong signal.

At the level of HE, income-dependent student funding for the costs of living (*BAföG*) has traditionally been considered a major instrument to offset disadvantages due to social background. It is disputed whether the low participation rates of young people from lower social classes are in spite of *BAföG* or because it is too low. Currently the potentially negative effect of the introduction of moderate tuition in several *Länder* is being discussed, but it is yet too early to assess the effects.

Gender. Efforts to increase the share of women in high-level academic positions exist at all levels; national, *Länder* and institutional. The federal ministry for education and research (*BMBF*) runs a range of projects in this area (*BMBF*, 2007a). However these efforts often fail due to the lower share of women reaching the necessary qualification levels to apply for professorships, and their often weaker networks. More recently the focus has therefore extended to include facilitating the compatibility of family and work. For example, the *Hertie Foundation* has developed an institutional audit on family-friendliness of HEIs, analysing teaching and working conditions in this respect (*Hertie-Stiftung*, 2007). CHE undertakes a project titled “family in higher education institutions” jointly with the Bosch Foundation and the federal ministry for traffic (*Bundesministerium für Verkehr, Bau und Stadtentwicklung*) in which eight HEIs will be supported their ‘good practice’ in the field for a period of two years. In another project, CHE seeks to support the *Land Brandenburg* in developing family friendliness as a competitive advantage of its HEIs and research institutions.

In the course of the transition to a Bachelor and Master’s degree structure, it is currently being monitored whether the introduction of a short first degree will discourage women from continuing to the Master’s level, which could threaten the gender balance already reached at this level.

Lifelong learning. Vocational and professional training for people already holding an academic or vocational or professional qualification (referred to as 'further education', *Weiterbildung* in Germany) is to a large extent organised outside of the HE system in Germany, HEIs are underrepresented in this market. Reasons are the funding structures, inadequate regulatory provision and mental barriers such as low reputation for academics engaged in this field (Hanft and Knust, 2007). This is somewhat at odds with the fact that further education was mentioned as one of the core functions of HEIs in the Higher Education Framework Act and is included in most if not all *Länder* Acts on HE.

The transition to the Bachelor-Master's structure has improved the conditions for lifelong learning as HEIs are starting to develop so-called 'further education Master's programmes' (*i.e.*, Master's programmes for graduates with job experience) and the gap between vocational qualifications and the first academic degree is now smaller, improving the scope for co-operation, bridging courses, upgrading, etc.

The German federal government and the Federal Ministry of Education and Research (BMBF) have launched an initiative for facilitating access to lifelong learning. A national website with the title "experience means future" has already been published to bundle and promote activities in this field (www.erfahrung-ist-zukunft.de). The initiative's goal is to support vocational training courses, especially for young migrants, and the development of innovative learning structures in companies. Included is a plan to pay an income-contingent public bonus of up to Euro 154 to those attending vocational training courses if they make the same investment (German Federal Government, 2007). Such public support for 'educational saving' (*Bildungssparen*) will improve incentives on the demand side (BMBF 2007b).

On the supply side, the use of the ECTS system and its links with funding could improve incentives for HEIs to engage in lifelong learning activities as this might ease funding for non-degree qualifications or parts of them. In the context of a pilot project with the *Land* Saxony on an integrated response of the HE system to the demographic decline, CHE develops according proposals.

A range of activities and initiatives have thus been launched in the education and training system to address demographic change. The federal

government initiatives on lifelong learning, integration and qualification are encouraging steps towards a more strategic and holistic approach to the challenges. However at the current stage, these initiatives largely depend on voluntary, non-binding commitments and bring together existing measures under a loose common roof. What is missing to date is an encompassing, strategic and funded national plan with clear targets, binding commitments and an evaluation and follow-up of results. The national integration plan displays promising progress on the target side, but overall the national picture is still best characterised by a complicated set of ad-hoc short term measures supported by public – and some private – funds.

3.2. Addressing the medium-term demand boom

This section presents the political measures taken in response to the medium-term increase in student demand, starting with the main one, the 'Higher Education Pact' 2020. Three other groups of measures are then reported: marketing measures mainly taken by *Länder* and HEIs in Eastern Germany, reforms of capacity law which are indirectly related to the increase in student demand, and adjustments of teaching duties of academic staff. For each of the measures, a short assessment is provided.

3.2.1. Higher Education Pact 2020

The 'higher education pact' (*Hochschulpakt*) 2020's teaching part¹ is the first HE policy measure with direct participation of the federation after the reform of federalism. It can be considered as testimony of the continued responsibility of the federal government for HE in spite of very low formal competencies, and was only possible as all *Länder* agreed to it. The HE pact is an immediate answer to the increase of young people with a HE entrance qualification in the Western German *Länder* and the already starting decline in demand in the Eastern German *Länder*. It is the most important policy measure in this area.

¹ A second part of the pact on research involves the move to full-cost funding (including overhead) by the federal state of projects supported by the German Research Council (DFG).

The pact is structured in two phases, the first of which covers the period 2007 to 2010. For this period, Euro 1.13 Billion are made available until 2010, half of which – Euro 565 million – are provided by the federation. The proceeding is differentiated threefold to account for the different situation of different *Länder*.

- (1) The large Western *Länder* (Bavaria, Baden-Württemberg, Rhineland-Palatinate, Saarland, Hesse, Lower Saxony, and North Rhine-Westphalia) have made commitments to accept an additional 91,370 new entrants into their HE systems until 2010. This equals about twenty-two per cent of the new entrants of 2005. It is assumed that these additional entrants will stay in the system for an average of four years, which corresponds to a three-year Bachelor programme and fifty per cent transition to two-year Master's programmes. The pact calculates Euro 22,000 per student over the course of studies, irrespective of the chosen programme(s), *i.e.*, Euro 5,500 per year. These costs are to be covered in equal parts by the federation and the respective *Land* (*the Länder are of course free to provide additional funding per student beyond that and some, like Bavaria, do so*). The federation pays the funds upfront to the respective *Länder* according to their capacity planning. In the year 2010 latest, the additional student numbers reached in practice shall be checked. This means that for each additional first year student starting in the period 2007 to 2010, the federation pays Euro 2,750 per year (a quarter of the federal share of 11,000) upon good faith over a period of four years. The discrepancy between the funds paid upfront and the funds *Länder* are entitled to based on actual numbers of first-year students must either be paid back later by the *Länder* or will be charged against the federal funds provided in the second phase of the higher education pact starting from 2011 onwards.
- (2) To account for the decrease in student demand already taking place, the Eastern *Länder* (Saxony, Saxony-Anhalt, Thuringia, Brandenburg, Mecklenburg-Western Pomerania) receive a certain share of the funds provided by the federation for keeping constant their capacity – otherwise they would reduce their capacities significantly even before the start of the actual demand boom in the West. Overall,

fifteen per cent of the 565 million federal funds are granted to the Eastern German *Länder*; these are distributed among them according to tax income and population size (the so-called, *Königsteiner Schlüssel*). Taking into account the shrinking numbers of young people with a HE entrance qualification in the Eastern *Länder*, they have to attract an increasing part of their first-year students from the West. If the Eastern *Länder* do not manage to keep their capacities constant until 2010, they have to pay back Euro 8,525 per student below the 2005 level. Here too, it is planned to charge this money against the funds provided by the federation under the pact's second phase.

- (3) In the third line of the pact, the city states receive some funding through a combination of the two modes. Bremen, Hamburg and Berlin commit themselves to keep their numbers of new entrants constant as compared to 2005². In return, they receive 3.5 per cent (Bremen and Hamburg) and four per cent (Berlin) of the total funding provided by the federation. In addition, the city states receive Euro 2,750 per year for each additional student above the 2005 level, for a period of four years.

Compared to the scale of the challenge presented in the last part, the Higher Education Pact 2020 appears to be undersized in two ways. First, the agreed student numbers are not sufficient to cater to the great numbers of additional applicants (Berthold et al. 2006: 40 cc.). Even assuming unchanged transition rates from school to HE and without the aspired increase in the share of an age group holding an academic degree, at least 228,000 additional applicants can be expected until 2010 (Gabriel and von Stuckrad, 2007).

Second, Euro 22,000 per student is too little. The amount is roughly based on average teaching costs per students, but does not take into account buildings and has been calculated by excluding the expensive medical subjects. The idea not to invest in medical education at least proportionally

² An exception is Berlin: here, an annual minimum number of new entrants of 19,500 were agreed until 2010. This is slightly above the 2005 numbers.

with the other subjects seems inadequate given the increasing need for medical care resulting from demographic change. Moreover, the amount of Euro 22,000 per student is paid irrespectively of the actual subject mix chosen by new entrants. This is likely to create wrong incentives for *Länder* and HEIs to invest in “cheap” subject areas – which would run completely counter to the political consensus that additional graduates are needed most in the expensive sciences and in engineering (Reinberg and Hummel, 2004). North Rhine Westphalia at least differentiates into two cluster prizes when distributing the funds to HEIs (IDW, 2007a), Bavaria and Baden-Württemberg make available additional resources beyond their duties according to the pact (StMWFK, 2007; MWK, 2007).

The incentives are problematic in further respects. The Western *Länder* do have an incentive to accept more students into HE, but the incentive has been reduced by the ex ante subtraction of funds for the Eastern *Länder* and the city states. Also, the Western *Länder* have committed themselves to bearing half of the burden, but want to do so largely through regrouping, not through additional funds. The envisaged possibility to charge payback against additional funds in the second phase of the pact further reduces incentives for the *Länder* to make real efforts.

At the same time, it is these generous settlement options which ensure the political consensus to continue the pact from 2010 to 2020, after the first phase. Neither *Länder* nor HEIs have to fear that they have to pay back the additional federal funds. Also, the federation has announced more, possibly higher additional funds, making the continued support of the federation for the institutional funding of HEIs likely.

A further positive element is that, for the first time, a form of demand-oriented institutional funding for HE has been implemented across *Länder* and with federal support. While imperfect, it constitutes an important innovation as funding of HE in Germany so far largely took place through personnel funding and thus was supply-oriented. The demand orientation of HE funding is urgently needed for the second phase of the pact at least until 2020, as the really strong ‘double cohorts’ are still to come and the high demand is expected to last far beyond 2020. It is in the national interest to educate these cohorts academically to fulfil the labour market demand for academics.

3.2.2. Marketing measures

Against the background of the declining demand for HE in the Eastern *Länder* (Part 2.2), they have started special marketing measures both to keep their own secondary school leavers 'in the country' and to attract students from Western Germany. An advantage they can make use of is their good infrastructure, a result of the recent investments into Eastern German HEIs after unification. Also, their conditions for teaching and learning are mostly judged favourably by students in national rankings (Hachmeister and Hennings, 2007). Finally, the low cost of living and the absence of student fees are a clear advantage. There are plans to coordinate these marketing activities across *Länder*, however no concrete agreements have been reached so far. At a CHE conference in December 2007, good practice in the field was presented and rewarded (CHE, 2007).

3.2.3. Reforms of capacity law

Currently reforms are underway in nearly all German *Länder* to adjust the modes of capacity planning to the requirements of the new Bachelor-Master's degree structure. These reforms have not been initiated because of the demographic challenge, but have implications for the system's ability to cope with the demographic developments and shall therefore be presented in this context. The main linkage is that both the transition to the new degree structure and the increase in student demand put pressure on the system's capacities, and compete for scarce funding.

In a similar situation of huge strain on HE capacities in the year 1972, at the beginning of an important 'massification wave', the German constitutional court made a judgement which laid the basis for the current capacity law (*Kapazitätsverordnung*). At the time, the constitutional court argued that in times of excess demand, applicants could not simply be denied access to HE, as HE was the sole path to certain professions and the free choice of a profession was guaranteed in the German constitution. Therefore, 'objective', fair and nationally consistent criteria had to be defined on the basis of which a HEI could reasonably argue to be "full". For this purpose, so-called "curricular norm values" (*Curricularnormwerte*) were determined for each subject, nationally standardising teacher-student ratios across programmes. Given tight budgets, these values were set at the lowest possible level in some subjects, particularly in the humanities and social

sciences where it was argued that additional students did not matter in large lectures. Unfortunately, these curricular norm values developed a normative benchmark function in the years to come, to that the underfunding of HE was cemented. As the regulation was based upon a constitutional court judgement, it proved very difficult to reform. In practice, it prevented improvements in the quality of teaching and learning as the strict linkage between personnel and student numbers rendered the system inflexible and supply-oriented.

The introduction of the Bachelor-Master's structure in Germany was linked to the political ambition and hope of students and academics that teacher-student ratios and the quality of the learning experience for students would be improved and drop-out rates reduced. Concretely, this meant that when the new degrees were introduced, many HEIs tried to negotiate new 'curricular norm values' enshrining improved teacher-student ratios as compared to the old system. However, given the largely indirect funding of German HE through personnel employed by the state, improved teacher-student ratios nearly automatically mean a reduction of capacity. Further strain is placed on the system by the fact that Bachelor and Master's degree together, if studied in sequence, take more time than reaching the Diplom or Magister in the traditional system (five years instead of four and a half). The introduction of Bachelor and Master's degrees thus implies a tendency for a reduction of enrolment, which the *Länder* try to counterbalance by political guidelines. However, the inherent tensions between the aims to keep at least constant the number of study places, improve teacher-student ratios in the first degree and offer attractive Master's programmes are hard to solve. On top of that comes the increase in student demand, which puts additional strain on budgets. Merely keeping capacities constant – which is difficult enough – is not sufficient.

The sixteen *Länder* currently grapple with these issues in very concrete terms. Most of them are planning to introduce certain "bandwidths" into the curricular norm values. Some also implement these "bandwidth models" (*Bandbreitenmodelle*) already in order to give HEIs more leeway in curricular planning. At the same time, these reforms have so far remained within the framework of the inherited understanding of German capacity law; an "agreement model" (*Vereinbarungsmodell*) which would establish a new logic of capacity planning is only seriously being envisaged by few

Länder. From a steering perspective, many can imagine that a combination of student or graduate-based funding with agreements on student or graduate numbers could replace the current capacity law. So the capacity law is currently being made more flexible. However, to enable more far-reaching reforms, an updated fundamental judgement of the constitutional court seems necessary.

Scarcity of funding is another limiting condition of these reform efforts: more latitude for HEIs in favour of higher quality of degree programmes is highly desirable, however in times of high student demand it enters into a pointed goal conflict with the aim to offer sufficient supply of study places. This points to the actual problem behind the capacity law: as a legal construct it hides the financial implications and decisions that ultimately stand behind regulations such as 'curricular norm values'. By blurring cost per student, the current capacity law is – in spite of the new flexibilities – unsuited to account for changes and especially for the medium-term increases in student demand. The increasing prevalence of access restrictions by which HEIs are trying to safeguard programme quality in times of high demand provides empirical evidence for this (HRK, 2007, pp. 15).

The competencies of the *Länder* in HE are emphasised by the new deviations from a common national capacity regulation, but the new models stay within the traditional logic. The possibilities for setting national HE policy goals such as increasing the percentage of graduates among the population remain limited. Moreover, the new flexibilities do not systematically improve teacher-student ratios, which is however needed if the political aims to improve success rates and reduce actual time to degree shall be reached (for a detailed analysis of these issues (Witte and von Stuckrad, 2007 a, b).

3.2.4. Adjustments of teaching duties

Under the conditions of the existing capacity law, the *Länder* have legal possibilities to deal with the medium-term increases in study demand. In particular, they can increase the teaching duties of academic staff in different categories, which are laid down in so-called "teaching duty regulations" (*Lehrverpflichtungsverordnungen*) by each *Land*. If this happens, more new entrants can be catered to with the same personnel resources, although this tends to reduce both the attention that can be devoted to each

single student and the time available for research. Until recently, the teaching duty regulations were standardised nationally through a KMK agreement, but now this incrementally falls apart, as more and more *Länder* implement their own solutions. For example, in Bavaria and North-Rhine Westphalia teaching duties of professors were increased from eight to nine hours per week (Universität Erlangen, 2006; Universität Wuppertal, 2007).

At universities, there is currently no legally established academic personnel category with a focus on teaching (except for some rudiments of previous reforms). Against this background, the Wissenschaftsrat (2007) has recommended to newly introduce a 'teaching professorship' (*Lehrprofessur*). Faced with increasing demand for HE, several *Länder* currently consider the introduction of so-called lecturer positions as well as of 'teaching professorships' (which are however very different from the function of the lecturer in England). Only Baden-Württemberg has so far presented concrete plans (Landesregierung Baden-Württemberg, 2007).

A further possibility for the *Länder* to deal with increasing student demand is to fill vacant professorial positions earlier (*vorgezogene Neubesetzung*) or to fill positions that will soon become vacant twice (*Doppelbesetzung*). Given the tight financial situation in most *Länder* and the widespread use of state personnel plans (*Stellenplänen*) these measures are only used to a limited degree. Some *Länder*, such as Rhineland-Palatinate, consider introducing or extending the position of a "senior professor", so that retired professors can continue to teach.

In the context of current efforts to render academic personnel structures more flexible, in some *Länder* it has become possible to introduce 'teaching duty accounts' (*Deputatskonten*), allowing to trade higher teaching load in a certain period against a lower load later. Also, the new performance-oriented pay scale for professors (*W-Besoldung*) makes it possible to agree upon additional teaching duties with professors in the context of job negotiations (*Berufungsverhandlungen*) and to reward them accordingly. However, these measures are restricted by the 'teaching duty regulations' which are still in place at *Länder* level and regulate maximum teaching loads.

Overall, these measures create some leeway, but are not sufficient to do justice to the increased teaching intensity of the Bachelor and Master's programmes, the general efforts at increasing the quality of student learning

in the context of the Bologna Process, and the increased student numbers during the next years. In particular, they risk coming at the cost of reduced research activity (see also Witte and von Stuckrad, 2007a).

3.2.5. Conclusions

A similar assessment holds for the ensemble of the described political measures, both those addressing the medium and the long-term challenges. While it can be judged as a success that a contribution of the federation to the institutional funding of HE has been achieved under the difficult conditions of German federalism, the efforts are not sufficient to cope with the expected increase in student demand.

Furthermore, the one-sided focus on the medium-run increase of applicants for HE in the Western German *Länder* is problematic. Only a small part of this increase is demographic in nature (namely until 2010), from then on it is induced by the political decision to shorten secondary schooling at the *Gymnasium* and by future higher percentages of age groups achieving the HE entrance qualification. Faced with the challenge to cater to higher student numbers, policy loses sight of the regressive demographic developments in the relevant age groups. Considering the increasing need for highly qualified academics, it is right to make efforts to make use of the temporarily increased demand for HE. But from 2020 onwards, student demand will decrease in all *Länder* due to considerably smaller age groups and cohorts – as already today in the Eastern part of Germany. While there is no reliable data basis, student demand can be expected to fall back to the average of the years 2000 to 2004 in the second half of the 2020s. In Germany too, scarcity of academic specialists can be already observed in some fields such as engineering.

Therefore, the focus on the medium-run increase in student demand has to be complemented today already by measures to increase participation of underrepresented groups in (higher) education. Regarding general strategies to cope with demographic change, the contribution of HE plays only a subordinate role so far. Funding additional student places is predominantly discussed as a cost burden at *Länder* level, not as a necessary and beneficial investment that is urgently needed to cope with demographic change. HEIs in the Eastern *Länder* which are already

confronted with shrinking demand are only starting to develop marketing strategies (IDW, 2007b).

It is encouraging to see that the federal government has taken some initiatives in 2007 to address the broader issues related to education and demographic change in the context of a 'national integration plan' and a 'national qualification initiative'. Given the weak formal competences of the federal government in this field however, these initiatives are greatly dependent on voluntary participation of a wide range of actors and it yet remains to be seen whether they will achieve much beyond the current declarations of good intent. So far the support for educational saving (*Bildungssparen*) to support lifelong learning of employees through modest amounts of public money remains one of the few concrete measures taken.

4. Conclusions and Recommendations

This part starts by recapitulating and summarising the major findings from the last parts (4.1), before making some suggestions on the way ahead (4.2).

4.1. Main findings

In the former parts, the demographic situation in Germany was presented and analysed both in general and with respect to the HE system. It became clear that Germany and its HE system are faced with simultaneous, asymmetric demographic developments.

In the Western *Länder*, relatively strong age cohorts (the co-called 'baby boom echo') will lead to increased numbers of young people entitled to enter HE until 2010 (Berlin-Institut 2005). Furthermore, a majority of German *Länder* will shorten school time at the *Gymnasium* from nine to eight years between 2007 and 2016, bringing down total school years from thirteen to twelve. This will create double cohorts achieving a HE entrance qualification and create a high level of demand for HE in the Western *Länder* for a period beyond 2020 due to the delayed take-up of HE (Statistisches Bundesamt, 2007: Table 13). The Western *Länder* can therefore expect a period of high student demand caused by the conjunction of demographic and politically induced effects.

The double cohorts tend to hide the actual demographic trend: Already from 2010 onwards, in many Western German *Länder* the size of the age cohorts constituting the classical client groups for HE will be decreasing. The Western *Länder* therefore need differentiated strategies based on careful regional analysis of the actual interplay of demographic and political effects. Abstract recipes will not work. HEIs must be enabled to analyse their problems and develop strategies how to react. CHE is currently developing tools to help them in doing so, such as a detailed 'demography atlas' specifying demand conditions at the regional level³.

In the Eastern German *Länder*, demographic developments are already visible today leading to a massive slump in demand for HE from the classical age groups. The shortening of schooling planned in some Eastern German *Länder*⁴ – Saxony-Anhalt, Mecklenburg-Western Pomerania and Brandenburg – as well (Table 3) will not counter-balance this effect. Moreover, not only are the numbers of young people achieving a HE entrance qualification shrinking, the situation is made more acute by their outward migration.

Overall, the asymmetric challenges in Eastern and Western Germany require complex answers. HE systems in the West need to set incentives for HEIs to accept additional students in order to make use of the potential. HEIs in Eastern Germany need to render their free capacities attractive for students especially from the Western *Länder*. Furthermore HEIs from all over Germany need to prepare and implement strategies for attracting new target groups and tapping the regional potential of students. Such strategies will be different depending on institutional profile, traditional client groups, etc.

The political and institutional responses so far are not sufficient in our view to solve the manifold and regionally differentiated problems. The focus of the major programmes in HE policy is on the medium-term increase in student demand. The federal government has recently started

³ CHE (2007). 'Datenatlas', retrieved 11 November 2007 from www.che.de/cms/?getObject=465&getName=Demographischer+Wandel+und+Hochschulsystem&getLang=de

⁴ Berlin is not traditionally regarded as part of the Eastern German *Länder*. Being an attractive city state, its demographic situation is different. In the Eastern German *Länder* Thuringia and Saxony, time to *Abitur* at the *Gymnasium* is already eight years only.

initiatives for bringing together actors from all levels of the system to address broad challenges related to education, demographic change and migration (national qualification initiative, national integration plan), but these are still in their infancies and the HE policies discussed in this context are not integrated with activities such as the 'pact for higher education' focusing on the medium term. It is to be hoped that the projects addressing the looming decrease in traditional client groups for HE most of which are to date small-scale, scattered and weakly targeted will soon receive more political attention and be integrated into more strategic national efforts (Part 3).

4.2. *The way ahead*

The German HE system is faced with changing demographic, economic, political and social conditions. It needs to become more dynamic, differentiated and flexible in response to similar processes in nearly all social subsystems. Adjusting the HE system to these changed conditions is a central political task cutting across sectors, raising education, fiscal, and regulatory and tax policy questions. Given the perspective of this study, focus is put on the requirements for HE policy and management.

- Germany needs a more responsive HE system that makes more effective use of intellectual potential independent of social background. This is required both from an equity and an economic perspective (European Council, 2000);
- The national responsibility of the federal level for research and study finance (*BAföG*) needs to be complemented by institutional structures of co-operation and co-funding for HE. While the federation does not have an independent right to fund HE, it is allowed to contribute if all *Länder* agree (Article 91b, Section 1 GG). This possibility should be used in order to change HE funding towards a demand-driven, competitive system that sets incentives for high-quality teaching. More funds need to be made available from more sources to provide HE at adequate scale and quality. The 'Higher Education Pact 2020' is a first important step into this direction, but sets only weak and possibly deficient incentives (Berthold et al., 2006);

- In the future, German HEIs will not be able to count any more on sufficient demand for the programmes they offer – depending on regionally differentiated trends. They need to enhance their profile depending on the composition of their client groups and their catchment areas. Especially HEIs in regions hit by massive demand slump will soon be threatened by closure. The one-sided orientation of the 'Higher Education Pact 2020' on the politically-induced demand boom in the West increases pressure on those HEIs whose traditional catchment area is already faced with demographic decline and which are not attractive for Western German students for internal or external reasons. The German HEIs need the analytical tools to determine their 'demographic profile'⁵ and the financial means and necessary autonomy to develop and implement adequate strategies;
- Such measures can be implemented through strategic marketing concepts highlighting an institution's strengths. However, HEIs in regions with similar structural conditions also need to cooperate to avoid detrimental competition;
- The focus on the primarily Western German boom in student demand covers the effects of demographic change. Also Western German HEIs need to prepare for decreasing demand from their traditional client groups today already;
- Both the decrease of classical demand for HE and the differentiation of this demand require new and more specific programme supply. Graduate professional/vocational training and academic education for students with vocational background need to be pulled out of their marginal existence and to be established as normal and major part of HE. Underrepresented groups need to be prepared for HE and be supported adequately;
- The under-representation of women starting from the PhD level needs to be overcome. This requires targeted support and the

⁵ See Footnote 15.

systematic reduction of barriers, including mental barriers that are often subject-specific. Increasing the share of women in high-level academic positions and, increasing their share at all levels in sciences and engineering, and facilitating the compatibility of family and work need to become strategic HE management tasks, but also require continued political support;

- The key to tapping new potential target groups for HE lies in the pre-school and school system. Permeability needs to be increased at all levels and a culture of targeted and personal support needs to replace the predominant culture of selection. Students with migration background need special attention in this respect, particularly when it comes to addressing language and cultural barriers.

References

- BAYERISCHES STAATSMINISTERIUM FÜR WISSENSCHAFT, FORSCHUNG UND KUNST. 2007. *Ausbau der Hochschulen in Bayern* [Extension of Higher Education Institutions in Bavaria]. München: StMWFK. (In German)
www.stmwfk.bayern.de/hs_ausbau.html (Accessed 7 December 2007)
- BERLIN-INSTITUT. 2005. *Newsletter*, September 2005.
www.berlin-institut.org/newsletter_16september05.htm (Accessed 11 July 2007)
- BERTHOLD, C., GÖSTA, G., HÜNING, L. and VON STUCKRAD, T. 2006. *Hochschulpakt steht bis 2010 – Die gefundene Lösung lässt Fragen offen* [Higher Education Pact Agreed until 2010 – Solution Found Leaves Many Questions Open]. Gütersloh: Centre for Higher Education Development. (Position Paper) (In German)
www.che.de/downloads/CHE_Stellungnahme_Hochschulpakt1106.pdf (Accessed 5 July 2007)
- BUCH, F., HENER, Y. and VON STUCKRAD, T. 2006: *Prognose der Studienkapazitätsüberschüsse und -defizite in den Bundesländern bis zum Jahr 2020*. [Prognosis of Study Capacity Excess Supply and Deficits in the Länder Up to the Year 2020]. Gütersloh: Centre for Higher Education Development (Working Paper 77) (In German)
www.che.de/downloads/Prognose_Studienkapazitaet_AP77.pdf (Accessed 30 October 2007)
- DIE BUNDESREGIERUNG. 2007. *Nationaler Integrationsplan*. [National Integration Plan]. www.bundesregierung.de/Content/DE/Publikation/

IB/Anlagen/ib-flyer-nip-englisch-barrierefrei,property=publicationFile.pdf
(Accessed 9 December 2007)

CHE. 2007. *CHE-Tagung am 6. Dezember in Berlin: "Ja, wo laufen sie denn hin?" – Hochschulen werben um Studierende*. [CHE Conference "Where Are They Actually Running?", 6 December, Berlin, Germany]. Gütersloh: Centre for Higher Education Development (News Release). (In German)
www.che-concept.de/cms (Accessed 7 December 2007)

CHRISTICH DEMOKRATISCHE UNION DEUTSCHLANDS, CHRISTIAN SOCIAL UNION and SOCIAL DEMOCRATIC PARTY. 2005. *Gemeinsam für Deutschland mit Mut und Menschlichkeit – Koalitionsvertrag zwischen CDU, CSU und SPD*. [Together for Germany with Courage and Humanity – Coalition Treaty between CDU, CSU and SPD] (In German)
www.cdu.de/doc/pdf/05_11_11_Koalitionsvertrag.pdf. (Accessed 2 July 2007)

DOHMEN, D. 2007. *Perspektiven für den Hochschulraum Ost – Zusammenfassende Thesen eines Projekts im Auftrag des Bundesministeriums für Verkehr, Bau und Stadtentwicklung* [Perspectives for the Higher Education Area East – Executive Summary of a Project Commissioned by the Federal Ministry for Traffic, Construction and City Development]. Köln/Berlin: Forschungsinstitut für Bildungs- und Sozialökonomie (FiBS-Forum 35) (In German)
www.fibs.eu/de/sites/_wgData/Forum_035.pdf (Accessed 30 June 2007)

EUROPEAN COUNCIL. 2000. *Schlussfolgerungen des Vorsitzes zum Europäischen Rat in Lissabon* [Conclusions of the Chairing of the European Council in Lisbon], 23-24 March 2000, Lisbon. (In German)
www.bmwa.gv.at/NR/rdonlyres/2327D88E-1ED4-4CAE-9C7C-B67053C66DBC/0/
SchlussfLissabon2000.pdf (Accessed 28 January 2007)

GABRIEL, G. and VON STUCKRAD, T. 2007. *Die Zukunft vor den Toren: Aktualisierte Berechnung der Studienanfängerzahlen bis 2020* [The Future at the Gates: Updated Calculation of Prospective Student Numbers until 2020]. (Working Paper 100). Gütersloh: Centre for Higher Education Development. (In German)

GERMANY. BUNDESMINISTERIUM FÜR BILDUNG UND FORSCHUNG. 2007a. *Frauen in Bildung und Forschung*. [Women in Education and Research] (In German) www.bmbf.de/de/474.php (Accessed 12 July 2007)

----- 2007b. *Weiterbildungssparen: Modelle für neue Finanzierungswege*. [Saving for Lifelong Learning: Models for New Funding Instruments] (In German)
www.bmbf.de/de/7342.php (Accessed 11 July 2007)

GERMANY. DEUTSCHER BUNDESTAG. 2007a. *Gesetz zur Umsetzung aufenthalts- und asylrechtlicher Richtlinien der Europäischen Union*. [Act on the Implementation of European Union Guidelines Regarding Asylum and

Stay] (In German)

<http://dip.bundestag.de/btd/16/050/1605065.pdf> (Accessed 18 June 2007)

-----, 2007b. *Koalition bereitet Weg für Rente mit 67*. [Coalition Prepares Model for Pension at Age of 67] (In German)

www.bundestag.de/aktuell/hib/2007/2007_060/01.html (Accessed 15 March 2007)

GERMANY. BUNDESREGIERUNG. 2007. *Lernen im Lebenslauf –*

Bundesregierung will Teilnahme an Lebenslangem Lernen steigern. [Lifelong Learning – Federal Government Wants to Increase Participation] (In German)

www.erfahrung-ist-zukunft.de/nn_104272/Webs/EiZ/Content/DE/Pressemitteilungen/20070613-weiterbildungssparen.html (Accessed 7 December 2007)

HACHMEISTER, C.-D. and HENNINGS, M. 2007. *Indikator im Blickpunkt: Die Ausstattung der Hochschulen aus Sicht der Studierenden im*

Bundesländervergleich [The Financial Situation of HEIs from a Student Perspective Compared between the *Länder*]. Gütersloh: Centre for Higher Education Development. (In German)

www.chc.de/downloads/Indikator_Ausstattung.pdf (Accessed 7 December 2007)

HANFT, A. and KNUST, M. (eds). 2007. *Internationale Vergleichsstudie zur Struktur und Organisation der Weiterbildung an Hochschulen* [International Comparative Study on Structure and Organisation of Lifelong Learning at Higher Education Institutions]. Oldenburg: Carl-von-Ossietzky-Universität Oldenburg. (In German)

HERTIE-STIFTUNG. 2007. *Projekt Beruf und Familie*. [Project „Job and Family”] (In German)

www.beruf-und-familie.de/index.php?c=audit.hsaudit (Accessed 11 July 2007)

HOCHSCHULINFORMATIONSSYSTEM (HIS). 2006. *Wissenschaft weltoffen*. [Research Open to the World] (In German)

www.wissenschaft-weltoffen.de (Accessed 28 June 2007)

-----, 2007a. *Wirtschaftliche und soziale Situation der Studierenden im Jahre 2006* [Economic and Social Situation of Students in the Year 2006].

(Sozialerhebung des Deutschen Studentenwerks, 18) . Hannover: Hochschulinformationssystem. (In German)

www.sozialerhebung.de/results_18/kap/Soz18_Hauptbericht_internet.pdf (Accessed 24 June 2007)

-----, 2007b. *Wirtschaftliche und soziale Situation der Studierenden im Jahre 2006 – Fragebogen* [Economic and Social Situation of Students in the Year 2006: Questionnaire]. Hannover: Hochschulinformationssystem. (In German)

www.sozialerhebung.de/soz16_17/docs/FB_BI.pdf (Accessed 11 July 2007)

HOCHSCHULREKTORENCONFERENZ (HRK). 2007. *Statistische Daten zur Einführung von Bachelor- und Masterstudiengängen – Sommersemester 2007* [Statistical Data on the Introduction of Bachelor and Master's Programmes – Summer Semester 2007]. Statistiken zur Hochschulpolitik 1/2007. Bonn: Hochschulrektorenkonferenz. (In German)
www.hrk-bologna.de/bologna/de/download/dateien/HRK_StatistikBA_MA_SoSe2007_final.pdf (Accessed 30 June 2007)

DAS INSTITUT DER WIRTSCHAFTSPRÜFER IN DEUTSCHLAND. 2007a. *450 Millionen Euro für 26.000 zusätzliche Studierende an den NRW-Hochschulen* [450 million Euro for 26,000 Additional Students at Higher Education Institutions in North Rhine Westphalia] IDW-press release 12 June 2007. Informationsdienst Wissenschaft. (In German)
<http://idw-online.de/pages/de/news213375> (Accessed 26 June 2007)

-----, 2007b. Hochschulmarketing in Ostdeutschland [Higher Education Marketing in Eastern Germany]. IDW-press release 7 May 2007. (Informationsdienst Wissenschaft)
<http://idw-online.de/pages/de/news207698> (Accessed 29 June 2007)

KONSORTIUM BILDUNGSBERICHTERSTATTUNG. 2006. *Bildung in Deutschland – ein indikatorengestützter Bericht mit einer Analyse zu Bildung und Migration*. [Education in Germany – An Indicator-Based Report with an Analysis on Education and Migration]. Bielefeld: W. Bertelsmann-Verlag. (In German)
www.bildungsbericht.de/daten/gesamtbericht.pdf (Accessed 4 June 2007)

LANDESREGIERUNG BADEN-WÜRTTEMBERG. 2007. *Erstes Gesetz zur Umsetzung der Föderalismusreform im Hochschulbereich (EHFRUG)*. [First Act on the Implementation of the Federalism Reform in Higher Education]. Stuttgart: Landesregierung Baden-Württemberg. (In German)
http://mwk.baden-wuerttemberg.de/fileadmin/pdf/gesetze/Hochschulreform/Anhoerungsentwurf_EHFRUG.pdf (Accessed 24 June 2007)

MERKEL, A. 2007. *Rede beim internationalen Symposium „Integration durch Bildung“*. [Speech at the International Symposium „Integration Through Education“], 16 October 2007, Berlin, Germany. (In German)
www.bundesregierung.de/Content/DE/Rede/2007/10/2007-10-16-rede-bkin-symposium-integration-durch-bildung.html (accessed 17 October 2007)

Merkel lädt Ministerpräsidenten zum “Bildungsgipfel” [Merkel Invites Heads of Länder to „Education Summit“]. *Wirtschaft und Weiterbildung, Das Magazin für Führung, Personalentwicklung und E-Learning*. (In German)
www.wuw-magazin.de/SID21.WN8GIUdO30E/newsPrint (Accessed 28 November 2007)

MWK. 2007. *Hochschule 2012: Ministerium für Wissenschaft, Forschung und Kunst Baden-Württemberg*. [Higher Education 2012: Ministry for Higher

Education, Research and Arts Baden Wurttemberg] (In German)
http://mwk.baden-wuerttemberg.de/themen/hochschulen/hochschule_2012/
 (Accessed 8 December 2007)

OECD. 2004. *Lernen für die Welt von morgen – Erste Ergebnisse von PISA 2003*. [Learning for the World of Tomorrow – First Results of PISA 2003]. Paris: OECD. (In German)

-----, 2006a. OECD Factbook 2006 – Economic, Environmental and Social Statistics. Paris: OECD.

-----, 2006b. *Education at a Glance – OECD Indicators 2006*. Paris: OECD.

-----, 2007a. *International Migration Outlook 2007*. Paris: OECD.

-----, 2007b. *OECD Employment Outlook 2007*. Paris: OECD.

REINBERG, A. and HUMMEL, M. 2004. Fachkräftemangel bedroht Wettbewerbsfähigkeit der deutschen Wirtschaft. (Scarcity of Experts Threatens Competitiveness of German Economy) in: *Bundeszentrale für politische Bildung 2004: Aus Politik und Zeitgeschichte*, pp. 3-11. (In German)
www.bpb.de/files/MTP0H4.pdf (Accessed 24 June 2007)

Die Rente mit 70 wird kommen [Pensions with 70 Will Come]. Press release 23 January 2007. *Netzeitung*. (In German)
www.netzeitung.de/arbeitsundberuf/507428.html (Accessed 30 January 2007)

SCOTT, P. 2005. *The Meanings of Mass Higher Education*. Buckingham: SRHE and Open University Press.

SEILS, C. 2007. *Ende der Abschreckung* [End of Deterrence] *Die Zeit*, 3 July 2007. (In German)
www.zeit.de/online/2007/27/einwanderung-fachkraefte?from=rss (Accessed 3 November 2007)

SPIEWAK, M. 2007. Die klugen Migranten: Deutschland entdeckt eine neue Studienelite. Doch viele Einwandererkinder brechen ihr Studium ab. Es fehlt an Förderung [The Clever Migrants: Germany Discovers a New Group of Elite Students. But Many Children of Migrants Drop Out of Studies]. *Die Zeit*, 28, 5 July 2007. (In German)

STATISTISCHES BUNDESAMT. 2006a. *Bevölkerung Deutschlands bis 2050 – Ergebnisse der 11. koordinierten Bevölkerungsvorausberechnung* [German Population until 2050 – Results of the 11th Co-ordinated Population Forecast]. Wiesbaden: Federal Statistics Office. (In German)
<https://www-ec.destatis.de/csp/shop/sfg/bpm.html.cms.cBroker.cls?cmspath=struktur,vollanzeige.csp&ID=1019440> (Accessed 20 March 2007)

-----, 2006b. *Periodensterbetafeln – Allgemeine und abgekürzte Sterbetafeln* [Life Tables – General and Summarised Life Tables]. Wiesbaden: Federal

- Statistics Office. (In German)
<https://www-ec.destatis.de/csp/shop/sfg/bpm.html.cms.cBroker.cls?cmspath=struktur,vollanzeige.csp&ID=1019334> (Accessed 27 May 2007)
- , 2006c. *Studierende an Hochschulen Wintersemester 2005/2006*. [Students at Higher Education Institutions Winter Semester 2005/2006]. Wiesbaden: Federal Statistics Office. (In German)
<https://www-ec.destatis.de/csp/shop/sfg/bpm.html.cms.cBroker.cls?cmspath=struktur,vollanzeige.csp&ID=1019191> (Accessed 12 April 2007)
- , 2007. *Nichtmonetäre hochschulstatistische Kennzahlen 1980-2005* [Non-Monetary Statistical Higher Education Indicators]. Wiesbaden: Federal Statistics Office. (In German)
<https://www-ec.destatis.de/csp/shop/sfg/bpm.html.cms.cBroker.cls?cmspath=struktur,vollanzeige.csp&ID=1019663> (Accessed 30 May 2007)
- TEICHLER, U. 1988. *Changing Patterns of the Higher Education System: The Experience of Three Decades*. London: Jessica Kingsley.
- UNIVERSITÄT ERLANGEN (Germany). 2006. *Anpassung der Lehrdeputate an bayerischen Universitäten*. (Adaptation of Teaching Duties at Bavarian Universities) (In German)
www.uni-erlangen.de/universitaet/organisation/verwaltung/zuv/personal/abteilung/handbuch_pers/lehrverpflichtung/index.html (Accessed 11 July 2007)
- UNIVERSITÄT WUPPERTAL (Germany). 2007. *Anpassung der Lehrdeputate an Universitäten in Nordrhein-Westfalen*. (Adaptation of Teaching Duties at Universities in North-Rhine Westphalia). (In German)
www.prwiss.uni-wuppertal.de/Personalrat/Aktuelles/Lehrverpflichtung.html (Accessed 11 July 2007)
- VBW. 2007. *Aktionsrat Bildung – Jahresgutachten 2007*. (Action Council – Annual Report 2007). München: – Vereinigung der Bayerischen Wirtschaft. (In German)
www.aktionsrat-bildung.de/fileadmin/Dokumente/Bildungsgerechtigkeit_Jahresgutachten_2007_-_Aktionsrat_Bildung.pdf (Accessed 11 July 2007)
- WISSENSCHAFT WELTOFFEN. 2007. *Daten und fakten zur internationalität von studium und forschung* [Data and Facts on Internationalisation of Teaching and Research]. Online Statistics. (In German)
www.wissenschaft-weltoffen.de (Accessed 13 November 2007)
- WISSENSCHAFTSRAT. 2004. *The Wissenschaftsrat: Organisation, Structure and Methods*. (In German)
www.wissenschaftsrat.de/wr_engl.htm#ORGA (Accessed 22 April 2007)

- , 2007. *Empfehlungen zu einer lehrorientierten Reform der Personalstruktur an Universitäten*. [Recommendations on a Teaching-Oriented Reform of the Personnel Structure at Universities]. Berlin: Wissenschaftsrat. (In German) www.wissenschaftsrat.de/texte/7721-07.pdf (Accessed 26 June 2007)
- WITTE, J. 2005. *Machen Bachelor und Master die Trennung in Uni und FH obsolet?* [Do Bachelor and Master's Render the Separation into University and Fachhochschule Obsolete?] In: C. Cremer-Renz and H. Donner (eds). *Die innovative Hochschule – Aspekte und Standpunkte*. Bielefeld: UniversitätsVerlag, pp. 181-195. (In German)
- , 2006. *Change of Degrees and Degrees of Change: Adaptations of European Higher Education Systems in the Context of the Bologna Process* [Doctoral Thesis]. Enschede: CHEPS / Twente University.
- WITTE, J., HUISMAN, J. and VAN DER WENDE, M. 2008 (forthcoming). *Blurring Boundaries: How the Bologna Changes the Relationship Between University and Non-University Higher Education in Germany, the Netherlands and France*. *Studies in Higher Education* 33(4).
- WITTE, J. and VON STUCKRAD, T. 2007. *Kapazitätsplanung in gestuften Studienstrukturen*. Gütersloh: CHE Centre for Higher Education Development. *Working Paper No 89* (In German) www.che.de/downloads/Kapazitaetsplanung_in_gestuften_Studienstrukturen_AP89.pdf (Accessed 30 May 2007) .
- , 2007b. *Quality, Capacity and the Two Cycles: German Higher Education Facing Difficult Trade-offs*. [Paper presented at the] Society for Research into Higher Education (SRHE) Annual Conference 2007 “Reshaping Higher Education”, 11-13 December 2007, Brighton, Sussex.
- ZENTRALSTELLE FÜR AUSLÄNDISCHES BILDUNGSWESEN (Germany). 2007a. *Vorausberechnung der Schüler- und Absolventenzahlen 2005 bis 2020* [Prognosis of Students and Graduates 2005-2020]. Bonn: Secretariate of the Kultusministerkonferenz. (Statistische Veröffentlichung der Kultusministerkonferenz 182) (In German) www.kmk.org/statist/schulprognosetext.pdf (Accessed 10 December 2007).
- , 2007b. *Die Mobilität der Studienanfänger und Studierenden*. [Mobility of Entrants into HE and Students]. (Statistische Veröffentlichung der Kultusministerkonferenz 183). Bonn: Secretariate of the Kultusminister-konferenz. (In German) www.kmk.org/statist/Dok_183.pdf (Accessed 10 December 2007).

Demographics and Higher Education in Italy

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Introduction

In this article we show how the demographic situation will affect the higher education system in Italy, both in terms of student numbers and the impact on academic staff. We first provide a detailed description of the current state of higher education in Italy, using the most recent data, and make a further in-depth analysis of the reforms that have taken place from 1999 onwards. Next, we make a series of projections for the student numbers and academic staff based on the best available demographic trends. In the last part we provide a review of current higher education policies, which are derived from the aim of meeting the goals set out by the Bologna process. We conclude by highlighting critical aspects of Italian higher education and some recommendations.

1. The Italian Higher Education System

1.1. The past expansion and the recent reform of Italian higher education

Since the reform of the fascist regime in the 1930s, Italian tertiary education can be fully identified with universities, forming a unitary system of higher education (Recchi, 2007). In 1969, stimulated by mounting student revolts, the Parliament approved a two-article law which gave full access to all kinds of university programmes for individuals holding any kind of secondary-school diploma (*"maturità"*, the upper-secondary level school-leaving certificate, conferred after completion of a five-year programme). However, Italian universities remained what they had always been: academic institutions offering only one kind of degree (*laurea*) after four-five years programmes, with equal validity established by law wherever it is attained (Recchi, 2007). With the reform of 1969 "the door was open but the

house remained the same", implying over-crowding both physically and symbolically. Universities had to face expansion without adequate improvements in facilities or without any rearrangement of the teaching role. The change was by many labelled as a transition from an "elite" to a "mass university". The widely recognized pathologies of that new system were first of all that students' progress toward their degree became slower. This change was simply due to the fact that students had no obligation to attend classes and were entitled the right to postpone exams indefinitely (e.g., in 1998, the year previous the last reform, only 11.6 per cent obtained their degree within the scheduled time; ISTAT, 2001a, p. 15). While none of the programmes last longer than four to five years, the average duration of tertiary education for students who graduated was about eight years. The ever expanding number of students completing university behind schedule greatly outpaced the overall expansion of the student population. The other consequence of the expansion was a rather dramatic increase in the number of university drop-outs. Between 1970 and 1985, two thirds of enrolled students left the university without obtaining a degree (De Francesco, 1988, p. 206). There are indications that students coming from less privileged background were over-represented in the group of university drop-outs. By comparing the completion rates (*i.e.*, obtaining university degree) of university students from what is termed the "licei", where upper class offspring are over-represented, with students from vocational professional schools, it turns out that 53.7 per cent of the former completed their degrees whereas only 20.1 per cent of those from vocational schools did so (ISTAT 2001a, 15). Though there might be selection effects behind these results, the indications are fairly clear.

Between 1960 and 1968 the number of university students increased by ninety-nine per cent and that of graduates by 108 per cent. Between 1969, immediately after the opening of the universities, and 1977, the number of university students and graduates continued to grow but at a slower pace of eighty-one and sixty-four per cent respectively (De Francesco, 1988, p. 202). These figures also indicate that during the 1970s enrolments outnumbered degrees, reflecting a soaring transition rate from secondary to tertiary level education, but, at the same time, a lower productivity of the higher education system.

Despite widespread and recurrent arguments deploring the inefficiency and inequality of higher education in Italy, a full-fledged reform was not adopted until 1999. The reform of 1999 proposed an alignment of the Italian higher education system towards other EU systems, reducing the time needed to attain an university degree. It also unites a solid cultural-methodological preparation with highly professional training. The main elements of the reform follow the “European Model” outlined by the Bologna Process from 1999. The aim of the Bologna process was to create an area of European Higher Education by 2010, in which students can choose from a wide and transparent range of high quality courses and benefit from smooth recognition procedures. This reform distinguishes three levels of post-secondary education (the so-called “3+2” model plus doctorate): 1) basic three-year courses, 2) followed by two-year specialization degrees and 3) by three-year PhD programmes. The reform project was anticipated by two innovations, the first being post-graduate studies (mainly PhD programmes) legally established in 1980, and three-year post-secondary vocational programmes (*diploma di laurea*, a first university degree) introduced in 1990, although with modest success (only twelve per cent of individuals entering tertiary education chose this stage in 2000: ISTAT 2001b, p. 10).

The main objective of the latest set of educational policies was to produce a stronger vertical differentiation in higher education, which is in line with other EU systems (Capano, 2002). The reformed system is expected to assist weaker students in obtaining at least first-level post-secondary degrees, which are easier to complete than the former *laurea*, simply because they can be obtained by attending shorter programmes. Though few degrees from the old system still exist, specialised degrees requiring a longer preparation are in place. These degrees are equipollent to the second-level specialization degree and include architecture, construction engineering, pharmacy, dentistry, veterinary science and medicine.

Although no new alternative institutions were created, universities were encouraged to define and specify the contents of their programmes, thereby increasing horizontal differentiation and competition among universities and degrees. In particular, universities are given the autonomy to decide which of its entry-level courses (*i.e.*, three-year programmes) set as vocationally oriented as opposed to being more academically oriented. Despite the rhetoric about “university autonomy,” some major

organizational aspects remain firmly constrained by state guidelines. In particular the basic curriculum of programmes and the overall amount of tuition fees remains under central state control, all of which being linked to available funds. At the level of post-graduate studies, the “traditional” courses (postgraduate school, PhD programme) at present are combined alongside with university master of first and second level, that are accessible to those with both the first and second level degree.

1.2. The current situation of the Italian tertiary education

1.2.1. Transition rates to university, matriculations and enrolment

Currently the Italian university system is composed of eighty-six universities, of which sixty are public and twenty-six private (including five universities specialised in on-line education), with a total of 8,508 courses (data¹ on 2006/2007 Academic year; MIUR, 2007). Four years after the reform, the courses of the “new” system constitute the majority. Besides the “traditional” courses, 5,913 new courses have been introduced. These are 3,565 courses of first-level degrees, 2,168 courses of the second-level degrees and 180 courses related to the single cycle specialization degree. The majority of the courses related to the old system is certainly coming to an end. In the academic year of 2004/2005 only sixty-eight courses remained with enrolled students (ISTAT, 2007).

In 2004 almost fifteen per cent of the population aged twenty-five to thirty-four had graduated from higher education, which is double the amount compared to the fifty-five to sixty-four age class (ISTAT, 2007). However, by the end of the twentieth century, the expansion of higher education in Italy halted. Population data indicate that the transition rate to tertiary education dropped from 74.3 per cent in 1992 to 64.5 per cent in 1999 (ISTAT, 2003). In 2005 the transition rate from high school to higher education resurged, reaching seventy-one per cent (MIUR, 2006).

¹ From 1993-94 Academic year the production and publication of statistical data on education, of any level, were gradually transferred from ISTAT (National Statistical Office) to what is currently called MIUR, that stands for Ministry of Education, University and Research (from now on simply MIUR).

Interestingly, the rate is considerably higher for women than for men (almost seventy-seven per cent against almost sixty-five per cent). In the academic year 2006/2007, 327,268 students were entering Italian higher education for the first time (www.miur.it). Fifty-five per cent of these students were women (Table 1). Compared to many other countries, young Italians have a quite high propensity of entering higher education. In 2003, for example, the net entry rate to higher education was the highest in Europe (fifty-four per cent), except for Finland where the entry rate was seventy-three per cent. It is of interest to note that the Italian entry rate was higher than countries such as France (thirty-nine per cent), Japan (forty-two per cent) and United Kingdom (forty-eight per cent) (MIUR, 2006).

Table 1. Recent trends of freshmen in Italian universities (1997/1998 – 2006/2007)

Years	Freshmen	Variation percentage of compared to the previous year	Percentage of females
1997/1998	299,831	0.8	54.9
1998/1999	278,939	-7.0	55.6
1999/2000	278,379	-0.2	54.9
2000/2001	284,142	2.1	55.2
2001/2002	319,264	12.4	55.1
2002/2003	330,802	3.6	54.7
2003/2004	336,724	1.8	54.8
2004/2005	331,893	-1.4	55.2
2005/2006	329,891	-0.6	56.0
2006/2007*	327,268	-0.8	56.0

*data at 30 November 2006.

Source: MIUR, 2006.

As the numbers of student is one of the most important sources of income to universities, most of them respond positively to increases in demand, with the consequence of over-crowding university facilities. This is reinforced by the fact that, in Italy, the non-academic tertiary educational system is still not much developed and the universities respond to almost all the increasing requests of young students to proceed with their studies.

Within this strategy, it is also generally expected that a large number of students will eventually drop-out and not complete their degrees. Thus, the high entry rates are not mirrored by high completion rates.

However, the trend over the last decade has been somewhat varied. In the previous academic year the number of entrants fell slightly (decreased by

0.8 per cent). Between 1998 and 2000, the matriculations decreased by seven per cent (from almost 300,000 to more than 278,000) then rising by 12.4 per cent in the academic year of 2001/2002 (319,264). It is widely claimed that this increase was the result of the new reform in which the number of new courses was increased. After this year, the entry rates remained more stable. Available data from the academic year of 2004/2005 shows that for a significant proportion of students the transition from upper secondary to university level is not an easy one and the process is certainly not automatic. The data show that 63.9 per cent of first-year students are aged nineteen years or younger (which is the scheduled age for completing secondary school), 16.7 per cent are between twenty and twenty-one years of age and 19.4 per cent are twenty-two years or older. Matriculation rates by age² (Table 2) confirm that the likelihood of entering university is highest immediately after the students attained their diploma from secondary school (31.8 per cent). However, the matriculation rates are noticeably high for older ages as well. In fact, the matriculation rate for those aged twenty-two years and over is 9.9 per cent. This is a new phenomenon in Italian higher education and is closely linked to the reform of 1999, which involved a renewal and broadening of available degree courses. The new system provides in this sense greater flexibility, *i.e.*, those not enrolling immediately after secondary education, still have a good chance to do so at a later age.

Table 2. Net matriculation rate by age (2000/2001 – 2004/2005)

Years	Total	Age 18 and less	Age 19	Age 20	Age 21	Age 22 and more
2000/2001	43.0	3.9	25.1	5.7	2.1	6.2
2001/2002	49.2	3.9	27.3	6.4	2.7	8.9
2002/2003	52.3	4.1	28.7	6.6	2.6	10.3
2003/2004	54.6	4.2	30.6	6.5	2.4	10.9
2004/2005	54.7	4.0	31.8	6.7	2.4	9.9

Source: MIUR, 2006.

As for secondary school attainment, data shows that out of those enrolling to higher education, 30.9 per cent holds the certificate of technical upper secondary school (*istituto tecnico*), 29.9 per cent holds a diploma from

² The net rate of matriculation is the rate between first-year students of a certain age and the total cohort of that age, regardless if they have secondary school diploma or not.

a secondary school with an emphasis on sciences (*liceo scientifico*) whereas 11.8 per cent holds a diploma from a secondary school with an emphasis on humanities (*liceo classico*). The remaining students obtained an upper secondary diploma from either vocational (6.5 per cent), linguistics (6.1 per cent), professional training (5.7 per cent) or other types (9.1 per cent).

In the academic year 2004/2005, the courses which registered the highest number of matriculations were those of economics and statistics (13.1 per cent), social and political sciences (12.3 per cent), law (twelve per cent), followed by engineering (10.2 per cent), literature (8.6 per cent) and medicine (8.5 per cent) (Table 3). In the previous year matriculations rose most in the area of chemistry and pharmacology (+11.3 per cent) and agricultural studies (+4.8 per cent) while physics and natural sciences, the areas of geology and biology, as well as literature, faced significant decrease (respectively: -13.1 per cent, -5.4 per cent, -4.9 per cent and -4.7 per cent).

Table 3. Freshmen by faculty area (2004/2005)

Faculty area	Numbers	Percentage	Variation of percentage compared to the previous year	Percentage of female
Agricultural	7,978	2.4	4.8	40.0
Architecture	15,779	4.8	-2.0	48.7
Chemical-pharmaceutical	13,922	4.2	11.3	62.2
Defence and security	407	0.1	-28.0	13.0
Economic-statistics	43,351	13.1	-4.1	46.1
Exercise physiology	4,681	1.4	-13.1	33.7
Geo-biological	17,307	5.2	-4.9	60.7
Law	39,744	12.0	2.4	56.9
Engineering	33,846	10.2	-2.9	18.0
Education	17,731	5.3	-3.3	89.0
Classical studies	28,401	8.6	-4.7	66.1
Linguistics	18,731	5.6	-0.2	81.6
Medicine	28,153	8.5	2.6	65.0
Social-politics	40,927	12.3	-3.7	59.8
Psychology	10,548	3.2	2.0	75.0
Scientific	10,387	3.1	-5.4	22.7
Total	331,893	100.0	-1.5	55.2

Source: MIUR, 2006.

Some fields of study are still characterised by strong gender biases. There is a clear over-representation in women in liberal arts, particularly in the faculty of linguistics and related subjects and psychology, where the

proportion of women is respectively eighty-nine per cent, 81.6 per cent and seventy-five per cent. In contrast, women are under-represented in the sector of defence and security (thirteen per cent), in engineering (eighteen per cent), in the natural sciences (22.7 per cent) and exercise physiology (33.7 per cent). Whereas the low proportion of female students in mathematics and natural sciences, as well as other technical oriented degrees, has been a European wide concern, it is interesting to see that in Italy the number of female first-year students in these subjects increased from 13.9 per cent to 15.4 per cent in the period 1998/1999 – 2004/2005.

In the academic year 2005/2006 the population of university students amounted to 1,823,886, of which fifty-six per cent are women (Table 4). Over the last decade, bar the status quo years of 1997/1998 and 2000/2001, the trend of university enrolment has been positive. The proportion of female students enrolled is continuously growing. The sectors of female presence (enrolled female students) are obviously almost the same of female students entering the system for the first time (compare Table 3 with Table 5).

Table 4. Trend of students enrolled by gender (1995/1996 – 2005/2006)

Years	Numbers	Variation of percentage compared to the previous year	Percentage female
1995/1996	1,661,815	2.3	51.9
1996/1997	1,685,883	1.4	52.7
1997/1998	1,672,280	-0.8	53.1
1998/1999	1,674,186	0.1	54.2
1999/2000	1,676,702	0.2	54.7
2000/2001	1,673,960	-0.2	55.4
2001/2002	1,688,804	0.9	55.9
2002/2003	1,722,457	2.0	56.0
2003/2004	1,768,295	2.7	55.9
2004/2005	1,820,221	2.9	56.1
2005/2006	1,823,886	0.2	56.0

Source: MIUR, 2006.

The age distribution of enrolment is as follows: 14.2 per cent are less than twenty years old, 35.1 per cent are aged between twenty to twenty-two years, 22.6 per cent between twenty-three to twenty-five years, 13.6 per cent

between twenty-six to twenty-nine and 14.5 per cent are older than thirty years of age (Table 6).

Table 5. Students enrolled by faculty area and gender

Faculty area	Numbers	Percentage	Variation of percentage compared to the previous year	Percentage of females
Agriculture	43,446	2.4	0.6	44.0
Architecture	94,615	5.2	-3.8	48.6
Chemical-pharmaceutical	62,619	3.4	-5.4	63.5
Classical studies	169,334	9.3	1.6	68.8
Defence and security	1,804	0.1	-17.2	12.8
Economic-statistic	225,483	12.4	3.1	47.5
Engineering	213,303	11.7	1.1	17.8
Exercise physiology	22,561	1.2	-3.6	37.7
Geo-biological	81,909	4.5	-2.4	61.7
Law	241,388	13.3	2.5	59.3
Linguistic	94,963	5.2	0.7	84.3
Medicine	136,755	7.5	-5.3	63.3
Psychology	67,281	3.7	-1.8	80.7
Scientific	55,124	3.0	-1.2	26.6
Social-politics	213,810	11.7	-1.7	60.5
Teacher training Education	95,826	5.3	-2.2	90.6
Total	1,820,221	100.0	2.1	56.1

Source: MIUR, 2006.

Table 6. University enrolment by age (2004/2005)

Age	Per cent out of total students	Per cent out of total population of that age class
Below 19	2.6	8.3
19	11.6	35.3
20	12.3	36.8
21	11.9	34.8
22	10.9	30.4
23	9.5	26.1
24	7.4	19.9
25	5.7	14.7
26-29	13.6	6.3
30-34	7.3	2.9
Above 34	7.2	2.3

Source: MIUR, 2006.

1.2.2. Student drop-out rates

Reducing the number of students dropping out from the university system (thereby not completing their degree) was considered as one of the most important aims of the Lisbon Strategy. This objective is monitored by a drop-out index which is defined as the number of individuals aged between eighteen and twenty-four years with lower secondary school certificate, which are recorded as having dropped-out of the educational system. According to data from ISTAT (2007), the Italian overall drop-out rate in 2006 was 20.3 per cent. This rate, which has been almost unvaried over the last years, is considerably higher among male students (Table 7). The drop out rate for men is twenty-four per cent against seventeen per cent for women. Drop-out rates are also higher in the areas of geology and biology and in the natural sciences. The overall drop-out amounts almost to 900,000 individuals. Worryingly for Italy, the overall figure is six percentage points higher than the average of the EU-25. Compared to other EU member states, Italy has the fourth worst drop-out rate, with only Spain, Portugal and Malta having worse scores.

Table 7. Matriculation and drop-out rate one year after university enrolment (1998/1999 – 2003/2004)

Academic year	Freshmen	Drop out rate (per cent)		
		Male	Female	Total
1998/1999	278,939	23.8	19.3	21.3
1999/2000	278,384	24.8	18.6	21.4
2000/2001	284,142	21.9	17.2	19.3
2001/2002	319,264	22.9	18.2	20.3
2002/2003	330,802	22.5	16.5	19.2
2003/2004	338,036	24.8	17.5	20.8

Source: www.miur.it.

1.2.3. Completing tertiary education

The framework for analysing the changes to the educational system that followed the reform of 1999 is based on both MIUR data and an *ad hoc* survey carried out by AlmaLaurea University Consortium. As already noted in par. 2.1, Italy is currently in a phase of transition from the “old” to the “new” university system. In the reformed system, there are two main types of university degrees. The first-level degree consists of three years of

courses (post-reform) and the second-level degree (specialization degree post-reform), the latter being obtainable with further two years of study following the first level. There are then specific specialization degrees with a single cycle of four to five years study (post-reform), all of which are coordinated at European level. The “traditional” university degrees (pre-reform) are coming to an end. According to MIUR data, there has been a constant increase in the number of graduates, which is of course not unexpected given increasing student numbers. Because of the reform in 1999, the number of graduates in 2002 increased by seventeen per cent from the previous year. Over the last five years, the annual number of graduates rose from 175,000 to almost 300,000 (Table 8).

Table 8. Graduation by gender (1995/2005)

Years	Number	Variation of percentage compared to the previous year	Female graduates (in per cent)
1995	112,608	7.1	53.7
1996	124,457	10.5	54.3
1997	131,987	6.1	55.3
1998	140,126	6.2	55.5
1999	152,341	8.7	55.8
2000	161,484	6.0	55.8
2001	175,386	8.6	56.4
2002	205,235	17.0	56.1
2003	234,672	14.3	56.0
2004	268,821	14.6	57.5
2005	301,298	12.1	57.2

Source: MIUR, 2006.

The graduation rate grew from 18.6 graduates per 100 people at age twenty-five in 2000 to 37.9 in 2004. In 2006 the post-reform graduates of the first-level exceeded for the first time the “traditional” graduates pre-reform (52.9 per cent against 34.8 per cent) while the single cycle specialized graduates constituted altogether 12.3 per cent (Table 9). The graduates of the post-reform can be distinguished by the “pure” post-reformers, *i.e.*, those belonging to a post-reform degree-course since the very first enrolment, and the “hybrids”, which are those completing a post-reform degree-course but having started the university in a pre-reform degree-course. After five years from the time the reform came into force, the “pure”

graduates represent 80.7 per cent of the first-level degrees and 70.3 per cent of the second-level specialized degrees. In the single cycle course, on the other hand, the “hybrid” graduates – transited from the old to the new system – are clearly prevalent (eighty-seven per cent).

Table 9. Degree students by typology of course (2006)

Typology of course	Numbers	Percentage
First-level graduates (post-reform)	97,990	52.9
Second-level graduates (post-reform)	17,057	9.2
Specialized graduates – single cycle course (post-reform)	5,750	3.1
Graduates pre-reform	64,564	34.8
TOTAL	185,361	100.0

Source: AlmaLaurea Universities Consortium, 2007.

As already been observed for matriculation and enrolment rates, the number of women obtaining a degree is higher than that of men. Whereas 53.7 per cent of the graduates were women a decade ago, they constitute 57.2 per cent today. In 2004, the number of students graduating under the new reformed system was more than 92,000. More than half of these students came from the old system. In other words, these students started in the old system, but given the introduction of the new and shorter three year degrees, many of them transferred and completed under the new system. Consequently, the proportion of students graduating before age twenty-five constitutes a substantial increase over what was common in the past (forty-six per cent in 2004 against 26.6 per cent in 2001).

Considering the distribution of degrees completed by subject of study, we see that by 2005 the highest proportion of graduates were those studying economics and statistic (15.5 per cent), followed by engineering (12.7 per cent), social and political sciences (eleven per cent) and law (10.7 per cent). The lowest proportions were in defence and security (0.7 per cent), physics (1.1 per cent) and agriculture (2.1 per cent). Of course, these low levels of degree completion are largely driven by the fact that fewer students enrol in these course in the first place. As for women, the distribution of graduates follows largely that of enrolment: ninety-two per cent of the graduates in teacher training were women and 88.8 per cent in linguistics. Not unexpected, the lowest number of female graduates are found in engineering and in defence and security (18.9 and 2.7 per cent

respectively, as proportion of the total graduates). Defence and security studies are attended mainly by military personnel, which explain the very low proportion of women graduating in this discipline. In the natural sciences, Italy scores somewhat lower than the EU average. The number for Italy is 22.3 per cent against 24.4 per cent of the EU-25 (MIUR, 2006).

The annual AlmaLaurea University Consortium report (various years)³ provides further interesting information about graduates in Italy. The Report considers forty-one of the forty-nine universities associated to the project⁴ and analyses a sample of 185,361 graduates. The research covers over sixty-four per cent of the Italian university system and it is statistical representative at national level for natural sciences, gender and geographical repartition (North, Centre and South Italy). The 2006 Report confirms a clear prevalence of female graduates. Women represent 59.8 per cent of the total (against 58.4 per cent in 2001). The majority of the graduates holds either a secondary school scientific certificate (36.4 per cent) or in humanities (seventeen per cent), while 26.6 per cent attended a technical secondary school. The socio-economic status of the sample is quite heterogeneous. Considering the socio-economic status of the parents, it turns out that thirty-one per cent of the respondents come from white collar background, 23.2 per cent from the upper middle class, 21.8 per cent from blue collars and 20.1 per cent from the lower-middle class⁵.

In 2006 almost fifty per cent of the graduates were aged twenty-three to twenty-six years old, whereas almost one third (32.8 per cent) was over twenty-seven. The mean age was 27.1 years, which is almost one year less

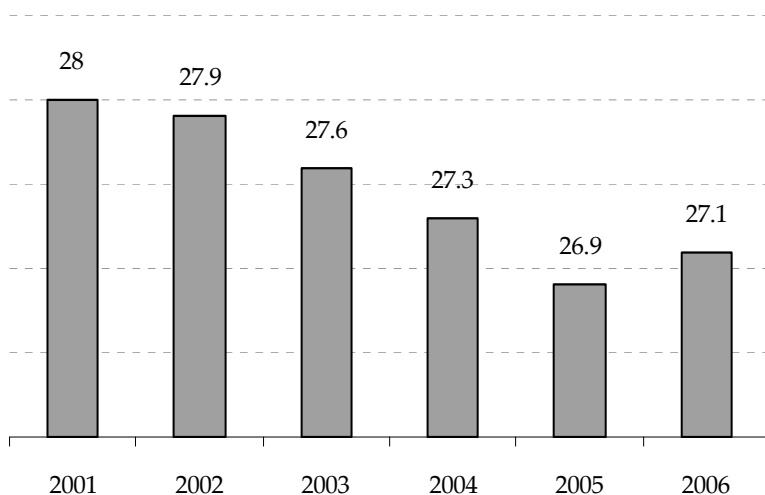
³ The report is available on the website www.almalaurea.it/universita/profilo/profilo2006.

⁴ The universities involved in the survey are: Bari, Basilicata, Bologna, Bolzano, Cagliari, Calabria, Camerino, Cassino, Catania, Catanzaro, Chieti and Pescara, Ferrara, Firenze, Foggia, Genova, Lecce, Messina, Milano IULM, Modena and Reggio Emilia, Molise, Padova, Parma, Perugia, Piemonte Orientale, Reggio Calabria, Roma Campus Bio-Medico, Roma La Sapienza, Roma LUMSA, Roma Tre, Salerno, Sassari, Siena, Torino, Torino Politecnico, Trento, Trieste, Udine, Venezia Ca' Foscari, Venezia IUAV, Verona and Viterbo Tuscia. The research utilized both the documentation from administrative offices of the 41 universities associated and data derived from questionnaire created by AlmaLaurea.

⁵ For the identification of the social class of the respondents, we refer to the model of Cobalti and Schizzerotto (1994).

than five years earlier (Figure 1). Over the time period considered there were several positive improvements. The number of students graduating within the designated time-schedule tripled (from 10.2 per cent in 2001 to 34.3 per cent in 2006) while those classified as “behind schedules” graduating two years or more later than the scheduled time, decreased from 52.8 per cent to 28.3 per cent. The mean duration of the time “behind schedule” dropped from 2.9 to 1.9 years (Figure 2). This trend is confirmed also by the index of behind schedule at the degree level⁶. Overall, graduates in 2001 accumulated a delay corresponding to almost seventy per cent of the entire duration of the course attended whereas in 2006 it declined to forty-nine per cent. The Report also points out that 75.1 per cent of the graduates worked during their studies whereas 8.8 per cent were recorded to work full time whilst attending university. The proportion of students having studied abroad during their degree programme in Italy was 10.3 per cent (6.4 per cent participating to the Erasmus or other EU programmes).

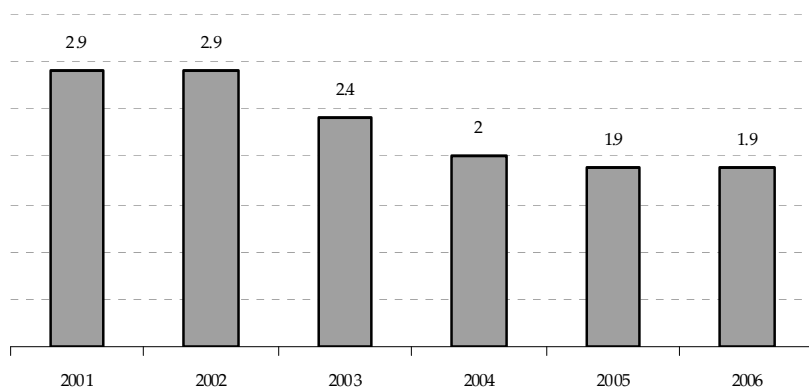
Figure 1. Trend in age at degree



Source: AlmaLaurea Universities Consortium, 2007.

⁶ The index of delay is relative to the legal duration of the degree course.

Figure 2. Trend in average delay at degree



Source: AlmaLaurea Universities Consortium, 2007.

1.3. A low mobility and a faint – but rising – “brain gain”

The Italian university system is characterised by low international mobility. In other words, the number of students deciding either to go abroad, or international students deciding to come to an Italian university, is rather small (Avveduto and Brandi, 2004; Akers, 2005; Brandi, 2006). The out-mobility is about two for every 100 university students, and is below the EU-25 average, though greater than in Spain (1.5 per cent) and in the United Kingdom (1.3 per cent). As we will show in the next part of this work on effects of demographic shift, the increasing the number of foreign students is particularly important for the Italian tertiary education. As it stands, the number of foreign students (as a proportion of the total Italian student mass) is much lower in Italy than in other OCSE countries, where the average is 6.4 per cent. In stark contrast to Italy, the number of enrolled foreign students in United Kingdom, Germany and France are ten per cent of the total (MIUR, 2006).

In the academic year 2005/2006 the matriculation of new foreign students was 9,113, which is eight per cent of the total, whereas the total currently enrolled are 41,589 (24,357 women), which is 2.3 per cent of total university students (Table 10). In other words, the presence of foreign students has begun to increase by the end of nineties. In fact, over the last

five years the increase constitutes about 66 per cent. The highest proportions of foreign students are found in medicine (about fifteen per cent of total matriculations and seventeen per cent of total enrolment, economics (respectively eighteen and fifteen per cent), classical studies (twelve per cent and eighteen per cent) and engineering (nine per cent and ten).

Table 10. Freshmen and enrolments of foreign students (1998/1999 – 2005/2006)

Years	Freshmen		Enrolments	
	Total	Percentage of foreigners among freshmen	Total	Percentage of foreigners among enrolments
1998/1999	4,738	1.5	23,088	1.4
1999/2000	4,564	1.6	23,666	1.4
2000/2001	5,509	1.9	25,769	1.5
2001/2002	5,554	1.7	25,977	1.5
2002/2003	7,168	2.2	31,343	1.8
2003/2004	8,191	2.4	35,299	1.9
2004/2005	8,758	2.6	38,298	2.1
2005/2006	9,113	2.8	41,589	2.3

Source: MIUR, 2006.

Most of the foreign students are EU-Europeans (almost seventy per cent). Albanian students are the most numerous of the non-EU at around fifty-seven per cent, followed by Asians (eleven per cent) and Africans (9.7 per cent). Greek students are most numerous of the EU students at forty-seven per cent. Among the Asian students the most prevalent are Israelis, Chinese, Iranians, and Lebanese. Among the African students Cameroonians and Moroccans are most prevalent. The proportion of students from Latin America is rather small at seven per cent, the majority of them coming from Peru. Very few students are from North America or Oceania (Table 11).

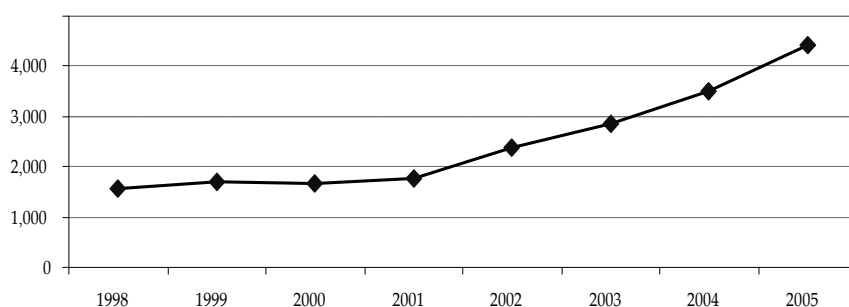
In 2005 4,438 foreign students graduated (Figure 3), which was 1.5 per cent of the total (MIUR data). This is more than the double of the number in 2001, which was as low as 1,785 students (Figure 3). In the academic year of 2005/06, 1,664 foreign students (of which 921 were women) obtained a post-graduation certificate in Italy (less than one third coming from EU countries). The foreigners enrolled in post-graduation courses are 4,994 (of which 2,663 are women), 1,126 coming from European Union.

Table 11. Freshmen and enrolments of foreign students by country of origin and area (2005/2006)

Area	Freshmen		Enrolments	
	Numbers	Per cent	Numbers	Per cent
<i>Europe (Total)</i>	5,907	64.8	28,985	69.7
UE-25	1,551	17.0	10,587	25.5
Greece	262	16.9	5,020	47.4
Germany	315	20.3	1,381	13.0
Poland	307	19.8	1,172	11.1
Other European countries (Total)	4,356	47.8	18,398	44.2
Albania	2,284	52.4	10,543	57.3
Romania	550	12.6	1,630	8.9
Croatia	213	4.9	1,164	6.3
<i>Africa (Total)</i>	932	10.2	4,036	9.7
Cameroon	172	18.5	1,305	32.3
Morocco	210	22.5	773	19.2
<i>North America (Total)</i>	192	2.1	754	1.8
USA	50	26.0	240	31.8
Canada	42	21.9	131	17.4
<i>South America (Total)</i>	767	8.4	2,811	6.8
Peru	313	40.8	940	33.4
Brazil	141	18.4	560	19.9
<i>Asia (Total)</i>	1,298	14.2	4,742	11.4
Iran	247	19.0	801	16.9
Israel	195	15.0	985	20.8
China	350	27.0	811	17.1
Lebanon	113	8.7	550	11.6
<i>Oceania</i>	9	0.1	66	0.2
<i>Total</i>	9,113	100.0	41,589	100.0

Source: www.miur.it.

Figure 3. Number of degrees of foreigners (1998-2005)

Source: www.miur.it.

1.4. *The post-graduation formation and the Italian “brain drain”*

After a period of continued expansion, the number of students in post-graduate degree courses (*i.e.*, Master's, schools of specialisation, doctorates and other post-graduation formation) reached a total of 149,976 students (2004-2005 data).

Also single cycle schools of specialisation experienced a surge in student numbers, and over the last five years the number increased by ninety-three per cent which constitutes an increase of 74,000 students. The increase was particularly noticeable among women in medicine (sixty-six per cent). Psychology saw the strongest increase of female students of eighty-five per cent. Out of the increase, forty-seven per cent of students attend a medicine degree-course and thirty-six per cent an education training one. In 2004/2005, 27,839 students obtained a specialization diploma. The age of the graduating students in these disciplines is higher than the average: one quarter of them completed the degree in their twenties, forty-one per cent between the age of thirty and thirty-four, but more than one third completed after the age of thirty-four.

The Italian doctorate programmes (*i.e.*, Italian PhD) have seen tremendous increase in student numbers over the last few years. The number of first year PhD students increased by 155.3 per cent. This constitutes 4,865 students in 2000/2001 and 12,421 students in 2004/2005. Over the same period the total number of PhD students raised from 21,128 to 37,520. Over the five year period, the number of PhD students completing their studies increased from 4,077 to 8,466, which is an increase of 107.6 per cent (Table 12). Fifteen per cent of doctorate students are in the sector of medicine and nine per cent in the biological sciences. Women constitute about a half of PhD students, but are more numerous in the classical studies. Only a minority completed the PhD below age thirty. Three quarter of the PhD students completed after age thirty, and one quarter after age thirty-four.

Table 12. PhD students and PhD holders (2000/2001 – 2004/2005)

Years	PhD Students		PhD holders		
	Numbers	Variation per cent compared to the previous year	N	Variation per cent compared to the previous year	per cent female
2000/2001	21,128	-	4,077	-	50,6
2001/2002	26,304	24.5	4,015	-1.5	51,6
2002/2003	29,944	13.8	4,254	6.0	51,5
2003/2004	37,906	26.6	6,353	49.3	50,8
2004/2005	37,520	-1.1	8,466	33.3	51,5

Source: MIUR, 2006.

First level Masters (which is possible after the first degree) and the second level Masters (which is possible after the specialisation degree) constitute a total of 26,000 enrolments (MIUR, 2006), over passed those of pre-reform courses.

Whereas it is difficult to quantify the number of post-graduate Italian students attending PhD or other kind of post-graduate courses abroad, a recent survey conducted by CENSIS in 2002 showed that more than sixty per cent of the Italian scientific researchers or academics interviewed attended PhD courses abroad. Interestingly, they do so despite the fact that most of them already got a degree in Italy. The survey also highlighted that many of the Italian students abroad attend a PhD degree-course at the same time as they work in science and/or academia.

This emigration of postgraduate students or individuals with postgraduate classification degrees represents what is often termed the Italian “brain drain” (Morano-Foadi and Foadi, 2003; Saint-Paul, 2004). This is a phenomenon that is potentially relevant to individuals with tertiary education but seems to be particularly relevant for the scientific research sector (Di Giorgio, 2003). In fact, seven per cent of individuals holding a degree emigrated in 2000 (Docquier and Marfouk, 2006). This is lower than other Southern European countries (nine per cent) and is also lower than Northern Europe (14.3 per cent), but other OECD data (www.oecd.org) estimate that around 300,000 Italians with tertiary education are working abroad, making up 12.2 per cent of all Italian graduates. Out of these, between 40,000 and 50,000 are working in research and development

(Beltrame, 2007). In general this amounts to a significant proportion reflecting a real Italian “brain drain”.

2. The Impact of Demographic Shift

2.1. The Italian demographic situation

From a demographic point of view, Italy is one of the oldest countries in the world. Recent estimates reveal a clear tendency of progressive ageing mainly due to the continued rise in life expectancy and a persistent low fertility. The propensity of childbearing is only increasing slightly. By January 2006, individuals aged sixty-five and over accounted for twenty per cent of the population (up from seventeen per cent back in 1996), whilst minors accounted only for seventeen per cent. Young people aged fourteen and less make up fourteen per cent of the population, whereas the working-age population (aged fifteen to sixty-four) amounted to two third of the total. While the mean age of the population is almost forty-three years, the ratio between the non-working age generation (minors under fourteen years of age and older people aged sixty-five and over) and the working-age one (fifteen to sixty-four years of age) is fifty-one per cent. This process of ageing population is generating a dramatic decrease in the working-age population and obviously an increase the elderly population – people who generally are in greater need of health and personal support.

About decreasing mortality trends, it is worth to remind that by 1900 the life expectancy at birth in Italy was still forty-two for both men and women. By 2003, life expectancy at birth stood at eighty years (eighty-three for women and seventy-seven for men), which is almost two years higher than the OECD average (OECD, 2006). During this period the average increase in life expectancy per year was 0.35 and 0.40 for men and women, respectively. However, the increase was more pronounced before 1950 than the period afterwards. In fact, in the fifty-year period from 1900 to 1950, the average increase was 0.51 for women and 0.48 for men. The infant mortality rate has fallen greatly over past decades. It stood at 4.1 deaths per 1,000 live births in 2004, which is lower than the OECD average (5.7 deaths). Nonetheless, the increasing life expectancy since the 1960s is mainly a result

of a reduction in the general mortality at older ages, especially deaths from cardiovascular diseases and neoplasms have reduced mortality rates (ISTAT, 1997).

As for current fertility levels, Italy has one of the lowest fertility levels in the world: the average number of children per woman in 2004 was 1.33 with even lower in some regions (ISTAT data). After the Second World War the decline in period total fertility rate (PTFR) was halted and increased sharply between the mid-1950s and mid-1960s (the so-called “baby boom”). The rise in PTFR in the middle of the 1960s was a result of earlier procreation following a shift to earlier nuptiality. After the mid-1960s the phenomenon was reversed and there was a constant reduction in fertility partly driven by a lengthening delay in nuptiality and the onset of childbearing (*i.e.*, timing of first birth). According to the period rates, however, the recent decline in PTFR seems to have stagnated and a slight surge in fertility level has been observed. The increase is especially evident in the northern regions, experiencing a rise in PTFR from 1.23 to 1.32 children per woman over the last three years, whereas in the Southern regions it has remained more stable around 1.35 (AAVV, 2007). Both *behavioural* and *structural* changes have been claimed as important drivers behind these trends.

The first line of thought is based on behavioural considerations and suggests that this increase in the period fertility measures can be attributed to variation in the birth calendar across cohorts. Young and recent cohorts have shown a marked postponement of the onset of childbearing, whereby the age at first birth is clearly postponed to later ages. In this sense, it could be that these cohorts are facing a “catching-up” effect because of the delayed fertility. Moreover, quantitative and qualitative surveys suggest that the desire to have children remains almost unaltered even in younger generations and also among women with strong career aspirations who have invested considerably in their education.

The second argument takes a more structural approach in explaining these trends, and argues that international migration is of key importance. The increased number of newborn children in Italy can be also a consequence of massive immigrant flow from countries characterized by high fertility levels. The presence of foreign immigrants throughout the country, especially in the central and northern regions, undoubtedly contributed to the increase in overall fertility. The percentage of births of

foreign parents out of the total number of births has been rising from 1.7 per cent in 1995 to a staggering 9.4 per cent (52,000 of births) in 2005. The impact of foreign residents' reproductive behaviour is even more pervasive considering the number of births in mixed couples (foreign mother and Italian father, or vice versa). Available data until 2004 show that the percentage of births with at least one foreign parent reached twelve per cent (AAVV, 2007).

Currently Italy is among the twenty nations with the highest number of immigrants. It has however a long history of emigration but a very short experience of *immigration*. Mass emigration started with the Italian unification. During the period from 1861 to 1976 over twenty-six million Italians emigrated, mainly due to slow and unfavourable developments of the Italian economy. Emigration declined sharply in the period from 1970 to 1980. The role of past emigration of current population ageing is nevertheless not relevant. Then Italy changed its status from being a net sender to become a net receiver of immigrants, the large majority coming from developing countries and Eastern Europe. From the mid-1990s the Italian governments promoted policies of reception which can be termed "open but controlled" (Marsili, 2006). The aim was to balance the declining population in the productive-reproductive ages. In quantitative terms, in the decade 1993-2003 approximately 2,170,000 individuals, for the greatest part foreign citizens, entered the country and successfully obtained a residence permit. However, a contemporary regularization programme revealed that millions of individuals have entered and stayed in Italy for years without being issued a residence permit. They were able to do so in spite of extended and reinforced border controls, development and implementation of stringent rules, and high penalties on hiring illegal or semi-legal employees. To give an example, three "amnesties" were implemented by the Italian government between 1996 and 2002, where the last one regularized almost 700,000 irregular migrants. In 2006, the migratory trend exceeded 230,000 units, equal to 3.9 per 1,000 inhabitants (Marsili, 2007).

The increasing proportion of elderly individuals draws attention to the peculiar characteristic of the Italian labour market. Since 1970 there has been a decrease in the labour market participation of elderly people due to the short-run policy strategy of early retirement and seniority pension. From 1980 to 1997 the number of employees aged more than fifty-five years

decreased by twenty per cent, whilst the numbers of individuals over fifty-five increased by twenty per cent. The consequences of this paradoxical process are straight-forward: currently there are twenty-two million pensioners in Italy compared to twenty-one million employees. The Italian employment rate for those aged fifty-five and over is 42.7 per cent for men and 20.8 per cent for women while the same rates for EU-15 member states were 53.1 per cent and 35.4 per cent respectively (Eurostat, 2007).

Given the specific issues regarding Italian higher education, it is also important to take into account the more general picture of Italian demographic situation. The expected strong increase in the proportion of the elderly, particularly the oldest old (aged over eighty), and the parallel decline in the proportion of the working-age population may not only hamper economic growth but may also compromise the financial viability of social security systems. The direction of future demographic developments may depend strongly on whether or not the system undergoes the necessary reforms needed to react to the ongoing population changes (Torri and Vignoli, 2007). Therefore, policies aimed at mitigation of the negative causes and consequences of population ageing are highly desired. Apart from the indispensable reform of the social security system, an increase in fertility and female employment could undoubtedly bring satisfying results, significantly helping the current situation. The key problem that remains solving however, is how one can best achieve a higher sustainable fertility rate that can be combined, and is commensurable, with higher employment rates among women. As it stands, these two processes appear to stand in a natural contradiction to each other in Italy. This issue is indisputably crucial for formulation and implementation of the policies at the national level.

2.3. The future demographic trends

We use contemporary demographic projections made by the National Statistical Office – ISTAT⁷ (Marsili, 2007). They assume a moderate increase

⁷ These projections are based on the well-known cohort-component method and its implementation is made in three steps. The first is to make a forward projection of the population in each age group at the beginning of the relevant time intervals. This will produce an estimate of the number of individuals still alive. At the second step, the number

of levels of fertility up to the European average. The increase is attributed to the catching-up effect of postponed fertility and to a lesser extent, the increasing number of female immigrants. The underlying assumption is consistent with convergence to European levels whereby the average number of children per women rises from 1.35 to 1.57 and a mean age at birth increasing from 30.9 to thirty-three in 2050, and an increasing net migration, with a net annual inflow of 175,000 migrants. They also assume that life expectancy at birth for men will rise from 78.3 to 84.5 years (6.2 additional years) and for women, from 84.0 to 89.5 (5.5 additional years)⁸.

Finally, predicted migration is possibly the most complex demographic parameter. In national demographic projections, migrations are generally treated as subordinate compared to fertility and mortality. However, migration has a crucial role in determining population structure by age and sex at the national level. Furthermore, with the presence of a natural decrease in the population, the importance of the migratory component as a factor in demographic development has markedly increased – its demographic relevance can be understood by considering its role in balancing the decline of the economically productive population in developed countries. ISTAT assumes in their projections a net annual inflow of 175,000 migrants.

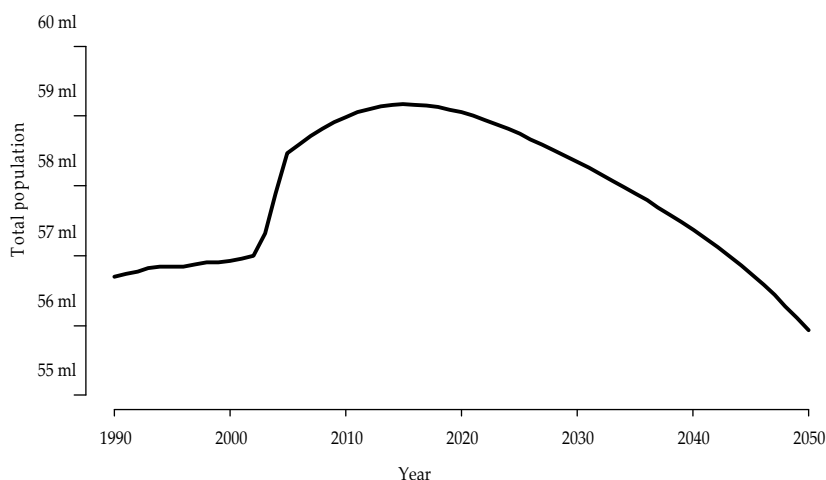
The combination of these hypotheses results in a gradual increase of the resident population (Figure 4) from 58.7 million in 2006 to 60.1 million in 2025, but after 2025, a slow and progressive decline will bring the population

of male and female births over the time interval, as well as the number of survivors to the beginning of the next interval is computed. Finally the number of immigrants is added and number of emigrants is subtracted in each age group for the relevant interval. The ISTAT procedure assumes a persistent numeric reduction at all ages.

⁸ The assumption made here depends on the hypothesis of whether one can impose a certain fixed upper limit to life expectancy. This question has not yet received an unequivocal answer. Oeppen and Vaupel (2002) argue that population experts have repeatedly been mistaken when making claims about upper limits of life expectancy. The apparent levelling off of life expectancy in various countries seems to be an artefact of laggards catching up and leaders falling behind. If it is true that current life expectancy is close to a maximum, one would expect that new records as regard life expectation should be slowing. However, the records of expected life follow a remarkably linear pattern. In fact, using computed records since 1840 shows that the life expectancy increases on average by three months per year. Hence, it is natural to suppose that also future Italian mortality will necessarily decrease.

down to reach a level of 58.8 million in 2050. The projection of births and deaths (Figure 5) pretty much excludes the possibility of a population recovery driven by any natural trends. Quite on the contrary, the projections give a negative effect appearing already from 2007 (-22,000) which will strengthen further. By 2014, the net change is depicted at -100,000 thousand units and by 2050, the projection displays approximately 470,000 births and over 790,000 deaths.

Figure 4. Italian population development, 1990-2050 (in thousand)

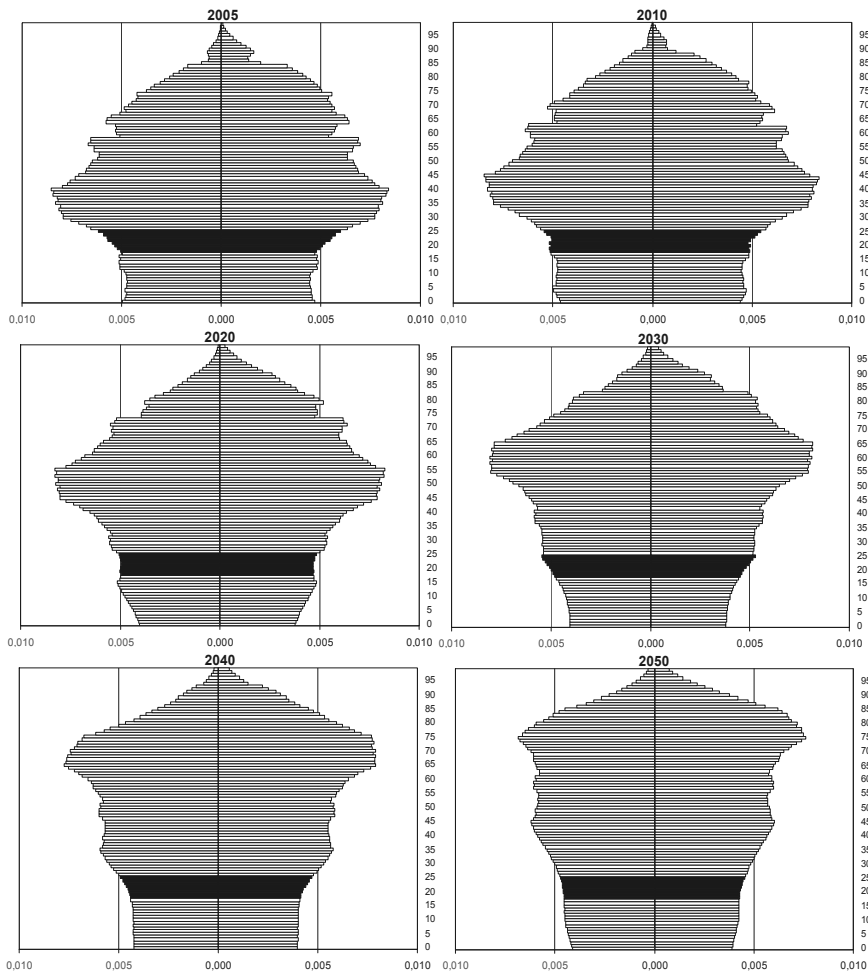


Source: Own elaboration on ISTAT data, www.demo.istat.it.

It is clear therefore that the natural component represents the driving force behind Italian population change. It is very likely that the Italian population will decline in the future, and that population ageing is inevitable. In the long run, the current level of net migration provides neither a solution for the population decline nor does it represent a way to achieve a re-equilibrium of the Italian age structure (Table 12). In 2050, the demographic picture will be made up of 33.6 per cent of people aged sixty-five and over, and only 12.6 per cent of young individuals aged fourteen and less. As regards the working-age population, the 38.9 million level of 2006, will drop to 38.2 million in 2020. A second phase will be characterised

by a more sustained decline, leading to a loss of another 6.5 million. The practical implication is that the working-age population will contract from 66.7 per cent of the overall population in 2005, to 53.8 per cent. These individuals will have to sustain 19.7 million people aged sixty-five and over and 7.4 million of teenagers aged fourteen and less (Marsili, 2007).

Figure 5. Age pyramids of Italian population development, 2005-2050. Highlighted age classes (18-25) identify higher education potential population



Source: Own elaboration on ISTAT data, www.demo.istat.it.

2.3. The impact on tertiary education level

2.3.1. The pure impact of demographic trends

The future development of tertiary education following recent demographic shifts remains a key issue. How will tertiary education adopt to the recent demographic changes? Likewise, what can we say about possible effects of the educational expansion and reforms on demographic development in Italy?

In order to answer to those questions we need to disaggregate the population projections for specific population sub-groups. If the characteristics of interest vary over the life course in a regular way, the best solution is to simply project the population by age and sex and then applying to it the age patterns which is representative of the characteristics we are interested in (Preston et al., 2001). In this analysis we derive from the Italian population projection as provided by ISTAT⁹:

- the projected number of people attending the tertiary level of education;
- the projected number of people entering (after formal enrolment) the tertiary level of education;
- the projected number of people completing the tertiary level of education. In other words, we assume a constant rate of entering, attending, and completing tertiary education by age and sex for the next fifteen years and apply those rates to the projected population. As a result we obtain the projected sub-groups of tertiary level population.

The projection algorithm excludes the higher open age classes since it is difficult and rather arbitrary how one should distribute this group into the population age structure. As a result the projected total numbers of populations attending, entering, and completing tertiary education are

⁹ www.demo.istat.it.

somewhat lower than the figures presented in the previous section. Tables 13, 14 and 15 display respectively the projected female, male, and whole population attending the tertiary level. Despite the sustainable assumptions alongside the national population projection – *i.e.*, return of fertility at European average levels and an increasing net migration – the demographic change appears clear showing a progressive reduction in the attending population. In other words, given population projections, the prediction is that fewer individuals will attend tertiary education.

Female population attending tertiary education will decrease from 903,155 (2005) to 818,030 (2010), and decline further to 796,864 (2015), and finally to 775,450 (2020). The male population attending tertiary education follow a quite similar pattern: 683,316 (2005), 619,642 (2010), 604,906 (2015), and 590,379 (2020). Overall the prediction is that the population attending tertiary education will decline by around 221,000 students, which represents a decrease of 16.1 per cent of the whole attending population. This contraction involves all the age groups.

The projected populations entering tertiary education from the years starting at 2005 until 2020 are presented in Table 16. Again, the driving force is represented by the lowest-low fertility experienced in the recent past. Numerically, the population entering tertiary education will decrease by 1,988 units in the period 2005-2010, another 15,488 units between 2010-2020 and 6,888 units between 2015-2020.

In order to account for the university dropouts, we made further projections for the population completing tertiary education distinguishing between levels of post-secondary education: 1) basic three-year course (Table 17) or 2) followed two-year specialization degree (Table 18). The numbers of individuals completing the three-year course of post-secondary education decrease over time: 242,035 (2005), 212,424 (2010), 202,699 (2015), and 197,157 (2020). On the whole the contraction make up 44,878 students, which corresponds to a decrease of 22.8 per cent of students completing “first level” tertiary education in the next fifteen years. As for the number of individuals completing the two-year specialization degree, the figures are: 7,739 (2005); 6,850 (2010); 6,590 (2015); and 6,482 (2020). Here the overall reduction consist of around 1,257 students, which is a decrease of 19.4 per cent of “second level” tertiary education in the next fifteen years.

Table 13. Projected attending female population (after formal enrollment) 2005-2020, Italy

AGE	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
19	40,242	38,745	38,318	39,661	39,382	39,985	39,700	39,865	38,443	37,595	37,261	37,497	37,412	37,574	38,158	38,618
20	121,946	120,097	115,656	114,390	118,374	117,547	119,336	118,492	118,980	114,762	112,249	111,256	111,958	111,705	112,187	113,917
21	132,210	129,489	127,541	122,860	121,525	125,726	124,853	126,740	125,850	126,365	121,919	119,270	118,224	118,964	118,697	119,206
22	130,874	126,243	123,668	121,825	117,393	116,131	120,107	119,282	121,068	120,226	120,714	116,505	113,998	113,009	113,709	113,456
23	112,218	111,255	107,356	105,189	103,637	99,906	98,843	102,192	101,497	103,001	102,293	102,703	99,160	97,049	96,216	96,806
24	101,035	99,237	98,395	94,982	93,084	91,726	88,460	87,530	90,462	89,854	91,171	90,551	90,911	87,809	85,962	85,232
25	77,203	74,623	73,309	72,693	70,198	68,811	67,818	65,431	64,751	66,894	66,450	67,413	66,960	67,223	64,956	63,605
26	56,689	53,913	52,129	51,220	50,794	49,069	48,109	47,423	45,772	45,301	46,784	46,477	47,143	46,830	47,012	45,444
27	42,666	41,289	39,285	37,997	37,341	37,033	35,787	35,094	34,598	33,406	33,067	34,137	33,916	34,397	34,171	34,302
28	35,129	33,521	32,448	30,885	29,881	29,369	29,130	28,158	27,618	27,232	26,302	26,037	26,872	26,699	27,075	26,898
29	28,954	27,529	26,277	25,441	24,224	23,443	23,044	22,858	22,102	21,681	21,380	20,656	20,450	21,100	20,966	21,258
30	23,989	23,023	21,896	20,907	20,246	19,284	18,666	18,351	18,204	17,606	17,274	17,036	16,464	16,301	16,815	16,708
Total	903,155	878,964	856,278	838,050	826,079	818,030	813,853	811,416	809,345	803,923	796,864	789,538	783,468	778,660	775,924	775,450

Note: The projection algorithm excludes the higher open age classes. As a result the total number of population is lower than the previous figures and tables.

Table 14. Projected attending male population (after formal enrollment) 2005-2020, Italy

AGE	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
19	28,305	27,438	27,196	28,208	27,889	28,338	28,196	28,249	27,308	26,758	26,638	26,774	26,671	26,862	27,098	27,519
20	84,764	83,177	80,640	79,934	82,896	81,961	83,274	82,860	83,017	80,264	78,655	78,302	78,700	78,400	78,958	79,649
21	94,296	92,086	90,370	87,629	86,866	90,068	89,057	90,477	90,030	90,200	87,224	85,485	85,105	85,535	85,210	85,814
22	94,069	91,399	89,270	87,618	84,978	84,243	87,328	86,354	87,722	87,292	87,456	84,590	82,915	82,549	82,963	82,651
23	85,983	85,312	82,908	80,991	79,504	77,127	76,466	79,243	78,367	79,599	79,211	79,359	76,779	75,271	74,941	75,314
24	79,127	77,593	76,993	74,840	73,124	71,792	69,663	69,070	71,558	70,773	71,877	71,530	71,662	69,351	68,001	67,706
25	62,421	60,306	59,146	58,693	57,066	55,768	54,761	53,152	52,705	54,585	53,992	54,826	54,564	54,664	52,917	51,897
26	47,637	45,131	43,615	42,783	42,458	41,291	40,361	39,639	38,485	38,164	39,512	39,087	39,686	39,498	39,569	38,317
27	35,404	34,371	32,577	31,491	30,896	30,663	29,828	29,162	28,645	27,819	27,589	28,554	28,250	28,678	28,544	28,595
28	28,957	27,697	26,895	25,502	24,658	24,196	24,015	23,367	22,849	22,448	21,807	21,628	22,378	22,141	22,474	22,370
29	23,374	22,195	21,236	20,625	19,564	18,922	18,570	18,432	17,938	17,544	17,238	16,750	16,614	17,185	17,005	17,258
30	18,979	18,227	17,313	16,570	16,096	15,273	14,775	14,503	14,396	14,013	13,707	13,470	13,092	12,986	13,429	13,289
Total	683,316	664,932	648,159	634,884	625,995	619,642	616,294	614,508	613,020	609,459	604,906	600,355	596,416	593,120	591,109	590,379

Note: The projection algorithm excludes the higher open age classes. As a result, the total number of population is lower than the previous figures and tables.

Table 15. Projected attending total population (after formal enrollment) 2005-2020, Italy

AGE	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
19	68,547	66,182	65,514	67,869	67,270	68,323	67,896	68,114	65,751	64,354	63,899	64,271	64,083	64,436	65,255	66,138
20	206,710	203,274	196,296	194,324	201,270	199,507	202,611	201,352	201,997	195,026	190,904	189,559	190,658	190,104	191,144	193,566
21	226,506	221,575	217,911	210,488	208,391	215,793	213,910	217,217	215,880	216,566	209,144	204,756	203,329	204,499	203,908	205,020
22	224,943	217,643	212,938	209,443	202,371	200,374	207,434	205,636	208,791	207,518	208,170	201,095	196,914	195,558	196,672	196,107
23	198,201	196,567	190,265	186,180	183,141	177,033	175,309	181,434	179,863	182,600	181,504	182,062	175,939	172,320	171,157	172,121
24	180,162	176,831	175,387	169,822	166,208	163,518	158,123	156,601	162,019	160,627	163,048	162,081	162,573	157,160	153,963	152,938
25	139,624	134,929	132,456	131,386	127,264	124,579	122,580	118,583	117,456	121,479	120,442	122,239	121,524	121,887	117,873	115,502
26	104,326	99,044	95,743	94,004	93,252	90,360	88,470	87,062	84,257	83,465	86,297	85,564	86,829	86,327	86,581	83,760
27	78,070	75,660	71,862	69,488	68,237	67,696	65,615	64,256	63,243	61,225	60,656	62,692	62,166	63,075	62,714	62,898
28	64,086	61,219	59,343	56,387	54,539	53,566	53,145	51,525	50,467	49,680	48,109	47,665	49,250	48,841	49,549	49,268
29	52,328	49,724	47,513	46,066	43,788	42,364	41,614	41,290	40,039	39,225	38,618	37,406	37,064	38,285	37,971	38,516
30	42,968	41,250	39,209	37,476	36,342	34,557	33,441	32,854	32,600	31,619	30,981	30,506	29,555	29,287	30,244	29,998
Total	1,586,471	1,543,898	1,504,437	1,472,933	1,452,073	1,437,670	1,430,148	1,425,924	1,422,363	1,413,384	1,401,772	1,389,896	1,379,884	1,371,779	1,367,031	1,365,832

Note: The projection algorithm excludes the higher open age classes. As a result the total number of population is lower than the previous figures and tables.

Table 16. Projected entering total population 2005-2020, Italy

AGE	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
18	22,917	22,689	23,513	23,295	23,663	23,519	23,590	22,773	22,291	22,142	22,269	22,200	22,329	22,599	22,917	22,689
19	189,349	182,941	181,134	187,684	185,948	188,871	187,732	188,293	181,804	177,975	176,794	177,801	177,254	178,279	189,349	182,941
20	40,768	40,076	38,726	38,346	39,725	39,360	39,975	39,736	39,854	38,488	37,682	37,433	37,645	37,530	40,768	40,076
21	15,016	14,685	14,437	13,954	13,818	14,312	14,181	14,402	14,316	14,358	13,869	13,581	13,492	13,568	15,016	14,685
Total	268,050	260,391	257,811	263,279	263,154	266,062	265,478	265,204	258,265	252,964	250,614	251,015	250,719	251,976	268,050	260,391

Note: The projection algorithm excludes the higher open age classes. As a result the total number of population is lower than the previous figures and tables.

Table 17. Population completing tertiary education (basic three-year course), forecast 2005-2020, Italy

AGE	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
21	3,441	3,365	3,309	3,198	3,167	3,280	3,250	3,300	3,281	3,291	3,178	3,112	3,092	3,109	3,441	3,365
22	27,220	26,354	25,778	25,346	24,505	24,268	25,128	24,900	25,284	25,135	25,209	24,357	23,854	23,699	27,220	26,354
23	24,272	24,073	23,314	22,808	22,430	21,692	21,484	22,239	22,039	22,376	22,245	22,310	21,563	21,122	24,272	24,073
24	30,995	30,419	30,172	29,229	28,601	28,131	27,214	26,956	27,893	27,645	28,064	27,901	27,982	27,054	30,995	30,419
25	35,413	34,221	33,590	33,321	32,288	31,602	31,087	30,085	29,802	30,828	30,557	31,015	30,837	30,925	35,413	34,221
26	31,252	29,664	28,675	28,151	27,927	27,071	26,500	26,074	25,241	25,007	25,858	25,633	26,013	25,866	31,252	29,664
27	24,169	23,427	22,246	21,511	21,121	20,955	20,318	19,894	19,576	18,958	18,783	19,416	19,249	19,532	24,169	23,427
28	18,712	17,877	17,332	16,466	15,926	15,640	15,518	15,050	14,739	14,506	14,051	13,923	14,388	14,266	18,712	17,877
29	14,567	13,841	13,227	12,827	12,190	11,793	11,583	11,493	11,149	10,921	10,750	10,416	10,322	10,663	14,567	13,841
30	6,602	6,338	6,024	5,759	5,586	5,310	5,138	5,048	5,009	4,860	4,761	4,687	4,543	4,502	6,602	6,338
31	6,316	6,335	6,083	5,783	5,530	5,365	5,102	4,938	4,851	4,814	4,672	4,578	4,507	4,369	6,316	6,335
32	6,394	6,346	6,365	6,113	5,813	5,560	5,395	5,132	4,968	4,881	4,844	4,702	4,608	4,537	6,394	6,346
33	6,415	6,339	6,291	6,310	6,062	5,766	5,516	5,353	5,093	4,931	4,846	4,809	4,669	4,576	6,415	6,339
34	6,267	6,342	6,267	6,220	6,239	5,994	5,703	5,456	5,296	5,040	4,881	4,796	4,760	4,623	6,267	6,342
Total	242,035	234,941	228,673	223,041	217,384	212,424	208,935	205,916	204,222	203,191	202,699	201,656	200,386	198,842	242,035	234,941

Note: The forecasting algorithm excludes the higher open age classes. As a result the total number of population is lower than the previous figures and tables.

Table 18. Population completing tertiary education (two-year specialization degree), forecast 2005-2020, Italy

AGE	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
22	55	53	52	51	49	49	51	50	51	51	51	49	48	48	55	53
23	256	254	246	241	237	229	227	235	232	236	235	235	227	223	256	254
24	1,543	1,514	1,502	1,455	1,424	1,400	1,355	1,342	1,389	1,376	1,397	1,389	1,393	1,347	1,543	1,514
25	2,806	2,712	2,662	2,640	2,559	2,504	2,463	2,384	2,362	2,443	2,421	2,458	2,444	2,451	2,806	2,712
26	1,862	1,768	1,709	1,678	1,664	1,613	1,579	1,554	1,504	1,490	1,541	1,528	1,550	1,541	1,862	1,768
27	1,217	1,179	1,120	1,083	1,063	1,055	1,023	1,001	986	954	946	977	969	983	1,217	1,179
Total	7,739	7,480	7,290	7,147	6,996	6,850	6,697	6,566	6,523	6,550	6,590	6,636	6,631	6,592	7,739	7,480

Note: The forecasting algorithm excludes the higher open age classes. As a result the total number of population is lower than the previous figures and tables.

Table 19. Forecasted entering population (after formal enrollment) 2005-2020, under the hypothesis of an annual increase of 4.8 per cent, Italy

AGE	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
18	22,917	23,781	24,645	24,416	24,801	24,651	24,725	23,869	23,364	23,208	23,341	23,268	23,404	23,687	24,017	23,866
19	189,349	191,746	189,852	196,718	194,898	197,962	196,768	197,356	190,555	186,542	185,304	186,359	185,785	186,860	189,113	191,735
20	40,768	42,004	40,590	40,192	41,637	41,254	41,900	41,648	41,772	40,340	39,495	39,235	39,457	39,336	39,563	40,037
21	15,016	15,392	15,132	14,626	14,483	15,001	14,864	15,095	15,005	15,049	14,537	14,234	14,141	14,221	14,178	14,259
Total	268,050	272,924	270,220	275,952	275,821	278,868	278,256	277,969	270,696	265,140	262,677	263,097	262,787	264,105	266,870	269,896

Note: The projection algorithm excludes the higher open age classes. As a result the total number of population is lower than the previous figures and tables.

2.3.2. The case of an increasing rate of entering higher education

Here, we consider future developments of tertiary education in the case where the rate of entering higher education is assumed to increase. This is particularly interesting since the trend in the entry rate into tertiary level of education was progressively increasing in the last years. To take into consideration this aspect, we evaluate an alternative scenario of evolution. In particular we re-calculate the future population entering tertiary education under the hypothesis that the average annual increase equals the one experienced over the last five years. The results of this alternative simulation are presented in Table 17 and deserve special attention. Under this hypothesis, the *total* population entering tertiary education will increase by 1,846 students: 268,020 (2005), 278,868 (2010), 262,677 (2015), and 269,896 (2020). In particular, this alternative scenario displays an increase of 0.6 per cent of the whole population entering higher education, instead of a decrease of 3.9 per cent. The outcome of this simulation highlights the importance of considering specific policies which encourages university enrolment. In other words, a reduction of the population entering tertiary education is embedded in the contemporary demographic shift, but its effects can be mitigated through policies promoting higher numbers of students enrolling at university, thereby maintaining a slight increase in the overall entry rate.

2.3.3. Future foreign students

We have already showed that the future demographic development will necessarily imply an increasing number of immigrants. Therefore, their potential impact on tertiary level of education might be important. We pay here special attention to the future development of foreign individuals entering and attending the Italian higher education system. The percentage of foreign students formally enrolled in the Italian university system has been rising from 1.5 per cent in 1998/99 to 2.6 per cent in 2004/05. At the same time, the total number of foreign individuals entering into the Italian system has increased from 1.4 per cent in the academic year of 1998/99 to 2.1 per cent in 2004/05. Due to the low number of observations, we prefer to project the total number of foreign students directly. Assuming a constant mean annualised growth rate between the year 1998/1999 and 2004/2005,

we project the total foreign population entering and attending tertiary education forward to 2020. According to this projection the aggregate number of foreign student attending the Italian higher educational system will rise from 38,298 (2004/2005) to 113,280 (2019/2020), which represents an increase of sixty-six per cent. Moreover, the total number of foreign individuals entering the Italian university system will increase from 8,758 (2004/2005) to 32,669 (2019/2020), which represents an increase of seventy-three per cent.

In summary, we are facing two completely different population trends for tertiary education. The first concerns the native Italian population that is decreasing markedly. The second concerns the immigrant population, which is increasing in a marked manner. Combining these demographic changes in the evolution of the population entering, attending and completing the Italian higher education we face however, an overall decline. However, this decline is confined to the Italian resident population: the foreign population entering and attending the tertiary education will rise significantly.

2.4. The impact on academic staff: an impending “tsunami”

Italian academia currently consists of 62,000 staff with permanent contracts (*i.e.*, tenured staff) and 35,000 lecturers with temporary contracts. The distribution of researchers (the lowest career level), associate professors, and full professors are thirty-seven per cent, thirty-two per cent and thirty-one per cent respectively. Over the last ten years the number of academic staff members increased by twenty-six per cent, with the highest increase being among full professors (more than forty-eight per cent increase). The figures are twenty-two per cent for associate professors and only fourteen per cent for researchers. There is a clear gender bias with only thirty-one per cent of staff being women. This is similar to the figures in Germany, but well below the levels in other countries. In Finland, for instance, the share of women in academia is forty-five per cent. As in other countries, in Italy, the share of women increases with lower career levels. Forty-three per cent of researchers are women, thirty-one per cent of associate professors are women, whereas as little as sixteen per cent of full professors are women (MIUR, 2006).

The most pressing issue in Italian academia is however the increasing ageing of its staff. More than forty-two per cent of academic staff are aged fifty years or older and more than twenty-two per cent are aged sixty years or older (Table 20). In comparison, only thirteen per cent in France are aged sixty years and above whereas the figure in the UK is only eight per cent. Not unexpected, the proportion of academic staff below age thirty-five is extremely low: in Italy it is less than five per cent against sixteen per cent in United Kingdom and twelve per cent in France (Zapperi and Sylos Labini, 2006). Forty per cent of all full professors in Italy are above sixty years, and the same proportion of researchers is between thirty-five to forty-four years old. The rather dramatic imbalanced age structure also reflects that certain cohorts are almost completely absent where others are present but in a highly disproportionate way. The age imbalance is largely due to the "*ope legis*" – a massive wave of recruitment taking place in the eighties decided by law in 1980.

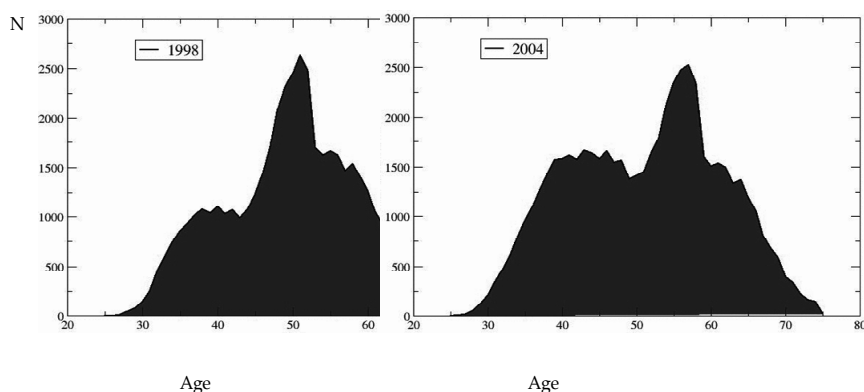
The figures make a very clear picture whereby the Italian university system is suffering from a serious deficit of young researchers and professors of younger ages (below thirty-five). On one hand, this fact is reflected by the large proportion of temporary researchers. The age structure of Italian academia has prevented upward mobility of young staff. A result of this is that promotions are slow, and a significant proportion of staff remains as researchers into their late thirties and early forties. The rigidity of the system has also the implication that young researchers lack international research experience and exposure. Scientific initiative, independence and responsibility are not well encouraged, and are an important reason for the Italian academic "brain drain" (Zapperi and Sylos Labini, 2006). Overall, the age structure represents an impending wave or a demographic "tsunami" that will affect the Italian academic staff in the next decade. The wave is mainly driven by those in the staff currently aged between fifty-five and sixty years, who within the next decade are likely to retire (Figure 6). Clearly future recruitment policies and university funding need to take this wave of retirement over the next decade. What is clear is that Italian academia will need a massive increase in the number of staff employed in Italian universities (MIUR, 2007).

Table 20. Italian academic staff by age and position (2004)

Age class	Total	Full professors	Associated professors	Researchers
Less than 34	4.5	0.0	1.0	11.0
35 – 44	24.7	6.3	24.5	40.0
45 – 49	13.3	9.5	16.1	14.1
50 – 54	14.5	14.0	15.5	14.1
55 – 59	20.0	24.9	21.2	14.9
60 – 64	13.1	22.5	13.6	4.9
65 and above	9.9	22.7	8.0	1.0
Total	100.0	100.0	100.0	100.0

Source: MIUR, 2006.

Figure 6. Age structure of Italian academic staff: comparison between 1998 and 2004



Source: Zapperi and Sylos Labini, 2006.

3. The Existing Institutional Policies on Higher Education

Since the 1999 reform, the Italian system of higher education is transformed into a setting whereby universities are under stronger pressure to innovate, modernise and to be more competitive with regard to the European context. As such, it is fair to say that the Italian tertiary education system is currently undergoing a huge transformation. This transformation is still “work in

progress". The 2004 law (D.M. 270/04) reshaped the university curricula within the different faculties, but with the aim to implement further steps to ensure integration of Italian University system in line with the so-called European Higher Education Area. The actuation is still on going (Crocetta, 2006).

The Bologna Process giving rise to the European Higher Education Area is being implemented through several steps. These include:

- 1) *The Alma-Laurea project concerning assistance in job search and job matching.* The Alma-Laurea scheme was created in 1994 by the initiative of Statistical Observatory of University of Bologna and it is now administered by an Italian Universities Consortium, with the official support of MIUR (Cammelli, 2005a and 2005b; Trombetti and Stanchi, 2006). It gathers and provides online information about 850,000 curricula, creating a job matching network between graduated individuals, universities and the private sector. It includes around sixty-seven per cent of Italian graduates. The aim of scheme is not only to assist young people in job search, but also to encourage a quicker process of matching between firms looking for workers and individuals seeking employment. The on-line CVs are continuously and easily updated. The scheme offers several interesting statistics about young individuals with higher degrees. These statistics permit analysis of their job performance and also allows comparative analysis among different typologies of degrees. With this system we know which sectors recruit which graduates from the tertiary educational system¹.
- 2) *Permanent education, also for adults and older workers.* The Lisbon strategy and the Bologna process put strong emphasis on the lifelong education. At university level this means to organise and design courses and tutorial activities specifically for adult individuals, who have a need for study and adopting new skills as a means to re-qualify themselves (Ministry of Job and Social Policies and Isfol, 2006; Damiani, 2007). Most Italian universities and faculties have local

¹ Cfr. www.almalaurea.it.

commissions devoted specifically to offer educational opportunities to adult and mature students – who typically need to re-start interrupted university studies or to re-convert old degrees into new programmes. These are often former students who need to improve their professional status or careers. In most cases this involves taking new courses and additional exams. The master courses, as well as the two and three year degrees, include as part of their programmes the possibility of obtaining “credits” through professional experience through stages in public and private sector. Lifelong education has also been developed with specific programmes such as courses funded by European Social Funds, professional formation courses and re-qualification and updating courses (*e.g.* for medicine doctors).

- 3) *Continuous monitoring of employment status of graduates.* ISTAT regularly conducts specific surveys based on Computer assisted telephone interviews (CATI) of young individuals holding a three year university degree or a specialisation degree. From this data they have analysed the transition from education to work three years after completing university. It permits an evaluation of the performances in the job market for different kind of degrees and it is therefore a good instrument to evaluate the tertiary education itself. The last survey, conducted on 2004 on graduated in 2001, shows that, after three years of studies completion, seventy-four per cent of them were in employment with the same job they started after completing university. The highest rates of employment are found among engineers (about eighty-two per cent), chemists (72.5 per cent) and economists and statisticians (68.1 per cent). Well below these figures we find individuals in medicine (19.4 per cent) and juridical (41.6 per cent). These low rates of employment reflects partly the poor job market performances of some disciplines (such as classical studies) but more importantly, they reflect peculiarities of the system of the specialised schools (for medial doctors) or compulsory stages before gaining professional qualification within their discipline (such as for architects or lawyers). Thus, a great majority of these individuals need further specialisation before gaining lawful employment. Interestingly we also find a significant gender imbalance in terms of employment for graduates. Three years after the degree, only fifty-

two per cent of women have a regular job, compared to sixty-two per cent of men employed three years after completing university (ISTAT, 2004).

- 4) *Promoting gender equality in higher education.* There are several activities taking place in secondary school where the aim is to inform students about their opportunities with higher education. One aim behind this scheme is to encourage women to attend higher education, thereby eliminating the current gender imbalance. This is specially the case in natural sciences and other technically oriented disciplines, which struggle with low rates of female students. Another implicit aim is to induce female students to enrol in those university careers which give better employment performances.

4. Some Conclusions

We have highlighted several important – and unfortunately negative – characteristics of Italian higher education. One important dimension is that Italy has one of the lowest levels of higher education in the industrialized world. Whereas higher education in Italy has recently undergone massive expansions, this does not measure up with changes seen elsewhere in other European countries. Importantly, university enrolment rates have grown considerably more than degrees conferred. Thus for Italian universities have always seen more freshmen than graduates: many students start tertiary-level programmes but few are able to complete. The drop-out rate, in fact, is still about twenty per cent. In addition, another important problem of the Italian system is that a large proportion of students are lagging behind the normal university schedule for completing their degrees.

However, the Italian university system is currently changing at a fast pace. On one hand several reforms are being introduced as a means to implement the directives of EU part of the so-called Bologna process. As an indication of the emergence of a less standardized higher education system and increasing variety of degrees, accurate rankings of graduate programmes, entirely new in Italy, began to be published also by the leading newspapers.

Of course, important changes are also taking place as a result of inevitable pressure of Italian demographic trends and changes. Regarding

the impact of demographic shifts on tertiary education, the ageing population structure together with increasing migration, will have profound influence on Italian tertiary education in the future. We have identified three main features of this development:

The outcome of our population simulation highlights the importance of considering specific policies, which encourages university enrolment in Italy. In other words, a reduction of the population entering tertiary education is embedded in the contemporary Italian demographic shift, but its effects can be mitigated through policies promoting higher numbers of students enrolling at university, thereby maintaining a slight increase in the overall entry rate.

On the other hand, in order to increase the number of students, the attention of universities and Italian government is also focussed on the increasing number of foreign students. However, OECD data (2005) show that only 12.2 per cent of the immigrants in Italy has a tertiary education, which is well below to the international rate (that is 23.2 per cent but also to the European rate, standing at 18.6 per cent). In other words, in Italy, the so-called “brain exchange” is even negative. The “brain drain” of post-graduate Italian students seems to be related to those students who go on to specialize abroad and of Italian researchers working abroad. These individuals are currently subject to a scheme whereby incentives are given for returning back to Italy. Nevertheless, there is little indication that Italy is not experiencing “brain circulation”: the real problem of Italian higher-education and research is not actually the brain drain, which is not so different from other countries, but the fact that Italy is not considered attractive for high educated people or foreign scientific researchers.

Finally, ageing process of academic staff can be seen as an impending demographic “tsunami”. Over the last few years recruitment to Italian academia has been on an all time low. Recruitment was completely blocked in the years of 2002 and 2003 as a result of the finance act, whereas new laws and regulations have been discussed during 2006 and still ongoing in 2007, further promotions of academic staff is currently halted. These events have of course not helped the already dramatic age imbalance of staff in higher education. Whereas the outcome of the current discussions is unknown, one would certainly hope that any new reforms will take into account the impending wave of retirements soon to take place. The fact that little is

known from the current discussions is somewhat worrying. Given the current age structure, a rapid implementation of a general rejuvenation of academic staff in higher education seems paramount and urgent. Care is needed in this process of course. Implementation of another recruitment wave may again lead to further age imbalances in the future. Though it is clearly important to assist and encourage young staff in Italian higher education, one should also avoid the cyclical nature of recruitment that has taken place in the past. One important aspect of this cyclical pattern is that recruitment and eventual promotion is not necessarily driven by merit. Quite on the contrary, individuals' career track will depend on being within the system at the right time.

References

- ALMALAUREA CONSORTIUM. [Various Years]. *Annual Report on Graduated*. Bologna: Il Mulino.
<http://www.almalaurea.it/eng/>
- AVVEDUTO, S. and BRANDI, M.C. 2004. Le migrazioni qualificate in Italia. [The Qualified Migration in Italy]. *Studi Emigrazione*, XLI, pp. 797-827. (In Italian).
- BELTRAME, L. 2007. Realtà e retorica del "brain drain" in Italia. Stime statistiche, definizioni pubbliche e interventi politici [Reality and Rhetoric of Brain Drain in Italy]. *Quaderno* 35. (In Italian).
- BRANDI, M.C. 2006. *Portati dal vento. Il nuovo mercato del lavoro scientifico: ricercatori più flessibili o più precari?* [The Market of Scientific Job]. Roma: Odradek Edizioni. (In Italian).
- CAMMELLI, A. (ed.) 2005a. *La qualità del capitale umano dell'università in Europa e in Italia* [The Quality of Human Capital in Europe and Italy]. Bologna: Il Mulino. (In Italian).
- , 2005b. *La transizione dall'università al lavoro in Europa e in Italia* [The Transition from University to Job in Europe and Italy]. Bologna: Il Mulino. (In Italian).
- CAPANO, G. 2002. Implementing the Bologna Declaration in Italian Universities. *European Political Science*, 3, pp. 81-91.
- CENTRO STUDI INVESTIMENTI SOCIALI. 2002. *Un capitale intellettuale da valorizzare: indagine conoscitiva sul fenomeno della fuga dei cervelli all'estero* [The Intellectual Capital To Be Potentied]. Roma: CENSIS. (In Italian)

- CKERS, L. 2005. Moving People and Knowledge: Scientific Mobility in the European Union. *International Migration*, 43(5), pp. 99-131.
- COBALTI, A. and SCHIZZEROTTO, A. 1994. *La mobilità sociale in Italia* [The Social Mobility in Italy]. Bologna: Il Mulino. (In Italian).
- CROCETTA, C. (ed.). 2006. *Metodi e modelli per la valutazione del sistema universitari* [Methods and Models for Evaluation of the University System] Padova: Clup.
- DAMIANI, M. 2007 La formazione universitaria in un percorso educativo lifelong. [Paper presented at the] *Conference "Università italiana università europea. La convergenza dei percorsi formativi da Bologna 1999 a Londra 2007", 1 febbraio 2007, Camerino, Italia.* (In Italian)
http://www.unicam.it/archivio/eventi/incontri_convegni/UniItaEu_010207/interventi.asp (Accessed 10 March 2008)
- DE FRANCESCO, C. 1988. L'istruzione universitaria [The Tertiary Education]. In: G. Sgritta, (ed.), *Immagini della società italiana*. Rome: ISTAT. (In Italian).
- DI GIORGIO, C. 2003. *Cervelli Export. Perché l'Italia regala al mondo i suoi talenti scientifici.* [Why Italy Gives its Scientific Talents to the World]. Roma: Adkronos. (In Italian)
- DOCQUIER, F. and MARFOUK, A. 2004. *Measuring the International Mobility of Skilled Workers (1990-2000).*
http://econ.worldbank.org/external/default/main?pagePK=64165259&theSitePK=469382&piPK=64165421&menuPK=64166093&entityID=000160016_20040922150619 (Accessed 10 March 2008)
- EUROSTAT. 2007. *Population and Social Conditions Indicators.*
<http://epp.eurostat.ec.europa.eu> (Accessed 10 March 2008)
- GRUPPO DI COORDINAMENTO PER LA DEMOGRAFIA. (Italia) 2007. *Rapporto sulla popolazione: l'Italia all'inizio del XXI secolo* [Report on Population. Italy at Beginning of XXI Century]. Bologna: Il Mulino. (In Italian).
- ITALIA. ISTITUTO NAZIONALE DI STATISTICA. (ISTAT). 1997. *Previsioni della popolazione residente per sesso, età e regione – Base 1.1.1996.* [Forecasts of the Resident Population by Sex, Age and Region – Base 1.1.1996]. Roma: ISTAT. (In Italian)
- . 2001a. *L'Italia in cifre* [Italy in Figures]. Rome: ISTAT. (In Italian)
- . 2001b. *Università e lavoro. Statistiche per orientarsi.* [University and Work. Orientative Statistics]. Roma: ISTAT. (In Italian)
- . 2003. *Lo stato dell'università. Principali indicatori* [The State of the University. Main Indicators]. Roma: ISTAT. (In Italian)

- , 2006. I laureati e il mercato del lavoro. Inserimento professionale dei laureate [Graduated People and the Labour Market. Professional Insertion of Graduates]. *Indagine 2004*. Roma: ISTAT. (In Italian)
- , 2007. *Annuario statistico italiano 2006* [Italian Statistical Yearbook 2006]. Roma: ISTAT. (In Italian)
- ITALIA. MINISTERO DEL LAVORO E DELLA PREVIDENZA SOCIALE E ISTITUTO PER LA FORMAZIONE DEI LAVORATORI. 2006. *Rapporto 2005 sulla formazione continua* [Report on Continuous Formation]. Roma: Rubbettino. (In Italian).
- ITALIA. MINISTERO DELL'UNIVERSITA E DELLA RICERCA (MIUR). 2007. *Notiziario statistico* [Statistical Notes]. Roma: MIUR.
- , 2006. *Università in cifre 2006* [University in Figures 2006]. Roma: MIUR. (In Italian).
- MARSILI, M. 2006. *Previsioni demografiche nazionali 1 gennaio 2005 – 1 January 2050*. [National Demographic Forecast 1 January 2005 – 1 January 2050] (In Italian) http://www.demo.istat.it/altridati/previsioni_naz/note.pdf (Accessed 10 March)
- , 2007. *Demographic Projections: the Impact of Net International Migration on Population Ageing in Italy. Proceedings of the 2007 Intermediate Conference "Risk and Prediction", 6-8 June 2007, Venezia, Italy.*
- MAZZUCO S., MENCARINI L. and RETTAROLI R. 2006. Similarities and Differences between Two Cohorts of Young Adults in Italy. Results of a CATI Survey on Transition to Adulthood. *Demographic Research*, 15(5), pp. 105-146.
- MORANO-FOADI, S. and FOADI, J. 2003. *Italian Scientific Migration: From Brain Exchange to Brain Drain*. [Paper presented at the] *Symposium on "Science Policy, Mobility and Brain Drain in the EU and Candidate Countries"*, 27-28 July 2007, Leeds, United Kingdom. <http://www.leeds.ac.uk/law/cslpe/phare/No.8.pdf> (Accessed 10 March 2008)
- ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD). 2005. *OECD Employment Outlook 2005*. Paris: OECD
- , 2006. *OECD Health Data 2006*. Paris: OECD.
- PRESTON, S., HEUVELINE P. and GUILLOT, M. 2001. *Demography. Measuring and Modelling Population Processes*. Oxford: Blackwell Publishers.
- RECCHI, E. 2007. Expansion, Reform and Social Inequality in Italian Higher Education. In: Y Shavit, R. Arum, and A. Gamoran (eds). *Stratification in Higher Education A Comparative Study*. Stanford: Stanford University Press.

- SAINT-PAUL, G. 2004. *The Brain Drain: Some Evidence from European Expatriates in the United States*. (IZA Discussion Paper 1310)
<http://idei.fr/doc/wp/2004/braindrain.pdf> (Accessed 10 March 2008)
- TORRI, T. and VIGNOLI, D. 2007. Forecasting the Italian Population: A Stochastic Approach. *Genus*, 63(1-2), pp. 93-118.
- TROMBETTI A.L. and STANCHI, A. 2006. *Lauree e lavoro* [Degree and Job]. Bologna: Il Mulino. (In Italian).
- ZAPPERI, S. and SYLOS LABINI, F. 2006. *Quando l'università invecchia* [Ageing University].
http://lescienze.espresso.repubblica.it/articolo/Febbraio_2006/1293525
 (Accessed 10 March 2008)

Electronic Souces

<http://anagrafe.miur.it/>
<http://cercauniversita.cineca.it/>
<http://www.crui.it>
<http://www.cnvsu.it>
<http://www.demo.istat.it>
<http://www.interconferenza.it/>
<http://www.istat.it>
<http://laborsta.ilo.org/>
<http://www.miur.it>
<http://www.mortality.org>
<http://www.universo.miur.it>

Current Situation and Prospective Impact of Demographics on Higher Education in Poland

Jerzy WOŹNICKI

1. Introduction

The higher education system in Poland faces diverse challenges, resulting, in particular, from changes in rules related to higher education institutions and having to do with such European processes as the Bologna Process and the Lisbon Strategy, but also with social developments on an international scale including the economic and professional mobility of Poles, migration processes and causes thereof. Other challenges stem from state-level systemic changes affecting higher education institutions in Poland, whether *political and economic* such as state reforms undertaken by the currently ruling coalition and its cabinet, new EU membership requirements, changes in the state budget or *social* factors such as demographics, regional limitations and opportunities, especially with regard to school networks, labour market conditions and changing affluence levels of the population. Last but not least, higher education institutions found themselves facing important new tasks resulting from changes in legal regulations.

The analysis of all these factors affecting the higher education system in Poland in light of the available data allow us to envisage two scenarios – one *negative* and one *positive* – of possible changes in the system given the discerned demographic trends and conditions. Nationwide demographic data pertaining to persons already born are well known and lend themselves to precise statistical prognoses, which is not to say, however, that demographic data characterizing the higher education institutions (including for example participation indices for the various population groups) are a given. The predictable demographic data relating to the nation as a whole may have different quantitative and structural impacts on the higher education institutions depending on government policies and policies the educational institutions themselves choose to pursue. This is

especially true of the effects demographic processes have on recruitment. The trend towards a simple continuation of relative participation indices may – but does not necessarily have to – reduce the number of students in conditions of generally downward demographic trends. In the coming years we may be seeing either crisis phenomena and regression, or an effective utilization of recruitment reserves in the group of higher education candidates and students with its existing social structure. Suitable analyses and actions may be undertaken to reduce the underrepresentation in the student body of less affluent persons and residents of rural areas and small towns, or to limit the undesirable unequal participation in the higher education system of either sex or the disabled. Actions of this kind, however, require the drafting of an appropriate development strategy in the higher education system involving effective policies aimed at ensuring equal access to higher education and a greater prevalence of secondary-level and higher education.

The aim of this analysis is to reflect all above aspects. A brief overview shall be given of the development of the higher education system in Poland since 1990, focusing on aspects relevant to the subject matter in hand (quantitative data, new higher education institutions) and taking into account demographic forecasts and demographic trends, as well as, estimates of the numbers of young people studying in Poland and young Poles who migrated abroad.

Further part of this analysis presents underlying assumptions of the present Law on Higher Education, which was adopted by the Polish Parliament in July 2005.

In order to understand recent quantitative developments in Polish higher education a good look is needed to what is known as “deferred demand” remaining from the period of the communist regime. It led to the explosion of higher educational aspirations among Poles during the past fifteen years and against this background are discussed the current phasing out of this boom and the first signs of demand decline. The latter development directly influences the labour market affecting people with higher education.

Particular attention is given to the demand drop and its anticipated impact on supply in the higher education system from 2005 to 2015, seen

against the background of the education level of the Polish population age structure of the student population in the period from 2000 to 2004.

This will be followed by a presentation of economic migration and the dynamics of study abroad with comments on the effect of the described phenomena on the functioning of higher education institutions in Poland, followed by a brief reflection on potential regional recruitment reserves in the higher education system in Poland's various regions, some comments on social structures and an estimate of the possible numbers of persons involved.

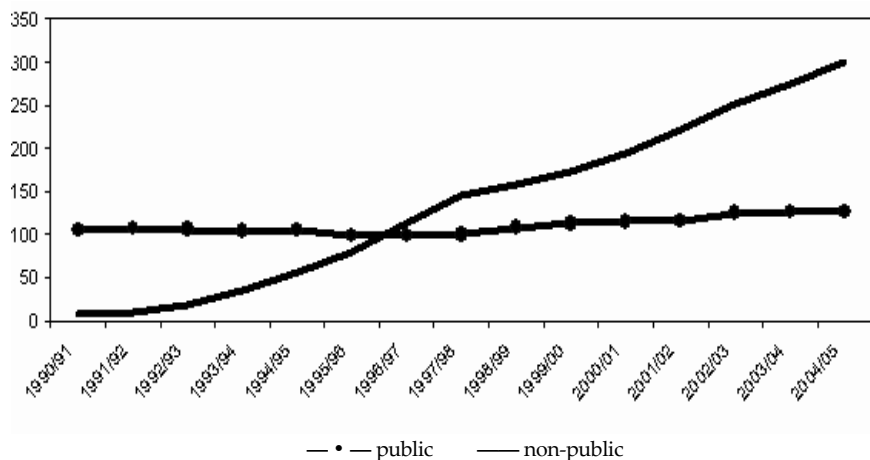
Based on earlier analyses, opportunities for more dynamic policies aimed at encouraging groups underrepresented to participate in higher education were discussed, with a particular focus on socially excluded groups, as well as possible benefits of the development of lifelong learning, the use of demand-stimulating tools in market and regulatory activities, and of drawing a higher percentage of the disabled into the higher education system.

In conclusion, two scenarios are presented for higher education development in Poland, taking into account national demographic trends as well as relevant international developments.

2. Social and Demographic Factors Affecting the Higher Education System Development in Poland

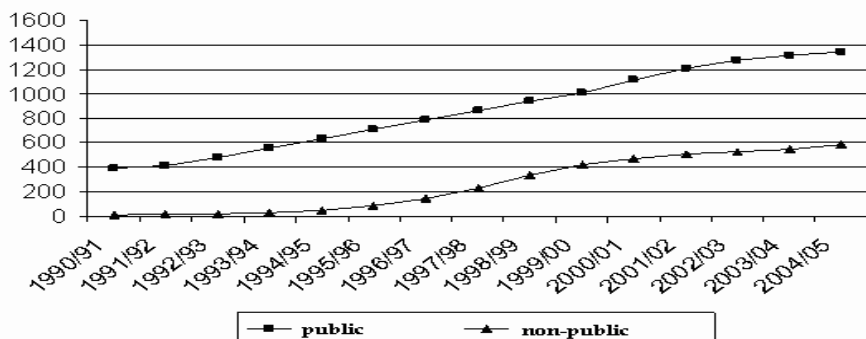
In 1990 the higher education system in Poland was stagnating, with the scholarization index for this system hovering around ten per cent. Following the political transformation and economic reforms, higher education system underwent an unprecedented period of quantitative growth, lasting some fifteen years. This situation is illustrated by two significant developments: an increase in the number of higher education institutions (Figure 1) and an increase in the number of students (Figures 1 and 2).

Figure 1. Higher Education Institutions in Poland (1990–2005)



Source: GUS, 2004.

Figure 2. Number of students in Poland in 1990–2005 (in thousand)



Source: GUS, 2004.

The above figure does not illustrate the dynamic development of internal structures of public and non-public higher education institutions, especially of the former which increased their student enrolment more than threefold and created numerous new faculties, colleges, branches, didactic centers in other localities and other organizational units.

The dynamic increase in student numbers on the one hand and the structural development of all types of higher education institutions and the increasing number of non-public schools on the other were both consequences of burgeoning educational aspirations of young people in Poland who saw the increasing availability of higher education as an opportunity to further their professional careers and reduce the risk of unemployment. These aspirations became apparent already on the secondary school level: the scholarization index for general education secondary schools (preparing students for higher-level education) increased from 18.9 per cent in the school year 1990–1991 to 42.4 per cent in 2001–2002. Considering also that twenty-five per cent of young people attended technical and profiled general-education secondary schools (in the 1990s this figure stood at thirty per cent but already in the 1999/2000 school year a clear drop in demand for technical schools in favour of general-education secondary schools could be seen), almost seventy per cent of young people were eligible to receive the matriculation (*matura*) diploma opening the way to higher education.

Another factor favouring the quantitative development of the higher education system in the 1990s were demographic trends in the age group of people likely to undertake higher education studies (cf. Figure 3).

Figure 3. Population Structure in Poland in the Period 1990–2004 (figures percentage)



Source: GUS, 2004.

At the beginning of 1990 only tiny (and statistically insignificant) numbers of students went to study abroad, due to economic as well as

linguistic and organizational barriers which young people faced in Poland at that time. In the space of just a few years the number of students studying abroad rose from some 10,000 to around 25,000, but the latter figure is still a mere one to two per cent of all higher education students in Poland. The clear increase in the number of students wishing to study abroad is directly affected by Poland's accession to the European Union.

Initially, higher education school graduates had no problems finding employment in Poland. In the last five years, however, the country has been experiencing growing unemployment which affects also people with higher education degrees. The unemployment ratio for the latter category has increased from two per cent in 1998 to a present level of around seven per cent.

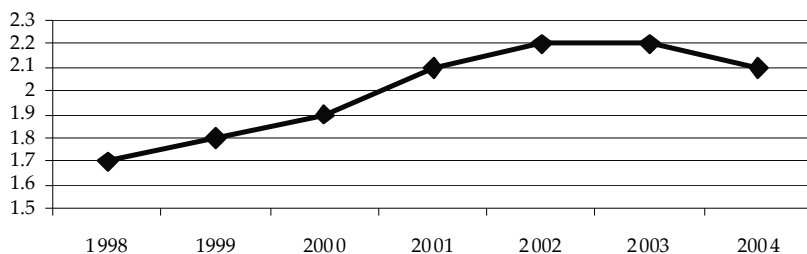
Starting from 1999, this effect, together with demographic factors, led to downward trends in numbers of persons from rural areas in the age group nineteen to twenty-four (characteristic for the higher education students population) displaying interest in undertaking higher education studies. Meanwhile, the previously rising numbers of students from urban areas reached saturation levels

The drop in demand for higher education studies was further aggravated by the increased mobility of Polish population looking for better-paid or any kind of employment abroad. In the period from 2004 to 2006 an estimated one to two million Poles migrated to other EU countries in search of job opportunities¹. It is believed that the number of persons of "student" age is higher than their ratio in total population. Intuitively, assuming that this overrepresentation amounts to 1.5 of the proportion of the "student" age group in the population as a whole, it is estimated around 320,000 persons of this group traveling abroad. This figure does not made up for the relative increase in the number of secondary school graduates resulting from the education policy in Poland aimed at eventually providing secondary-level education to all citizens. Considering also that

¹ No precise statistical data are available here as the process is very dynamic in nature. For example, a report dated September 5, 2006 by the European Citizen Action Service puts the figure at 1,120,000, but we have no figures for persons who found illegal employment in EU countries.

there are more people leaving Poland to study abroad than traveling to Poland to take up or continue their studies here, it can be predicted that in the coming ten years there will be a drop of at least several tens of per cent in the numbers of candidates for higher education studies in Poland.

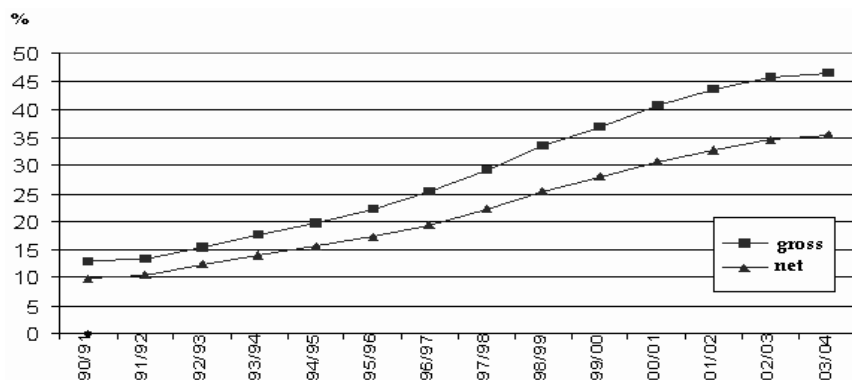
Figure 4. Inflow of Students from EU-25, EEA or Candidate Countries into Poland (figures in thousand)



Source: Eurostat, 2007.

It is worth noting that demographic trends alone would never have led to such a dynamic growth in the number of students in the period after 1990. This process was also due to the deferred demand remaining from the days of communist Poland. The vast majority of persons who were then in the nineteen to twenty-four age group were either not interested in higher education or had no possibilities of obtaining it, and many of them decided to make up for the lost education opportunities in the free Poland. An indication of this is the size of this latter group by comparing the ca. ten per cent scholarization indices in the academic year 1989/1990 with the one today (about fifty per cent, see also Figure 5).

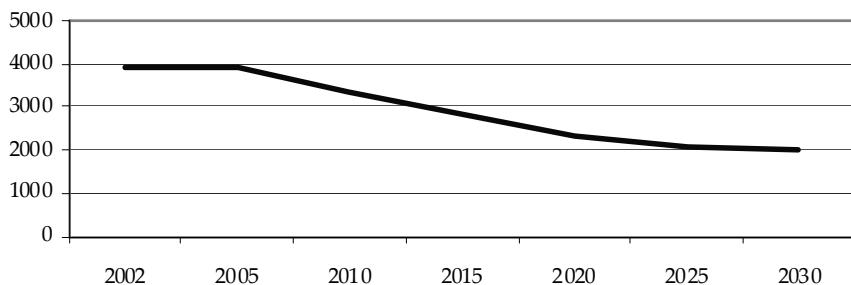
The described phenomena are by their very nature temporary and their positive impact on demand for higher education was bound to start decreasing. It may be assumed that the current high scholarization index in higher education in Poland and the easy availability of higher education studies result in small recruitment reserves which will continue to decrease in the years to come.

Figure 5. Scholarization Index in Higher Education in Poland²

Source: Sztandar-Sztanderska, U. et al., 2004, p. 19.

The effect of demographic processes that are significant in the context of the higher education system may be examined based on forecasted statistical data for aggregated age groups (cf. Figures 6 and 7).

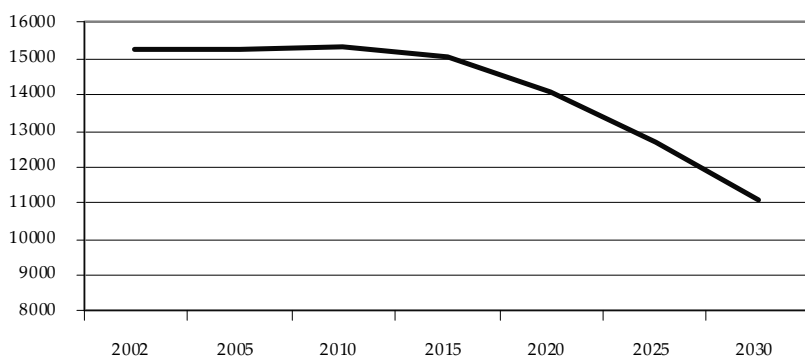
Figure 6. Forecasted population of Poland up to 2030; Persons aged 18–24 (figures in thousand)



Source: GUS, 2006.

² Gross scholarization index is defined as the ratio of higher education students to all Polish citizens aged nineteen to twenty-four, while the net scholarization index is the ratio of higher education students aged nineteen to twenty-four to all Polish citizens aged nineteen to twenty-four.

Figure 7. Forecasted population of Poland up to 2030; Persons aged 18–44 (figures in thousand)



Source: GUS, 2006.

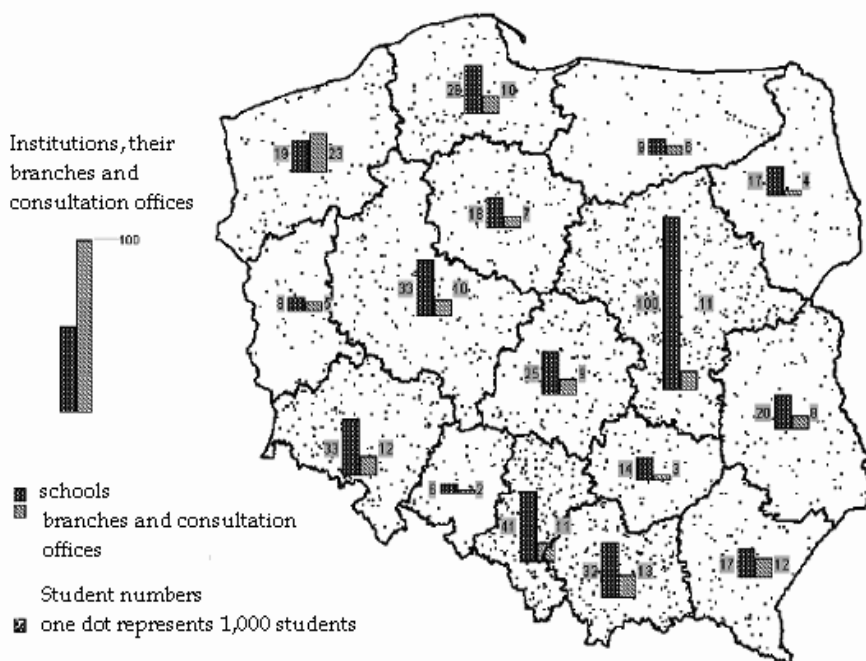
3. Recruitment Reserves and Forecasted Changes in Demand for Higher Education

A starting point for further analyses is estimation of the numbers of potential students in higher education over the course of the next twenty years based on demographic trends. Looking at trends graphically presented in Figures 6 and 7, it can be assumed that there is going to be a fifty per cent drop in demand for higher education by 2025. Performing a linear approximation of the anticipated changes, this figure translates into an average of 100,000 plus potential candidates for higher education studies less every year.

However pessimistic this forecast may sound, it does not necessarily have to turn out true in practice, given that the development of higher education system in Poland depends not just on demographic factors. Prominent among the other factors is state policy which may be intensified in various areas and expanded to include new elements. The potential opportunities to be addressed by the state authorities include the various existing sources of recruitment reserves for higher education institutions. One confirmation of the existence of such reserves in the Polish education

system is the distribution analysis of the original places of residence of students (Figure 8).

Figure 8. Higher Education institutions and students in the 2004/2005 academic year



Source: GUS, 2004, p. 7.

The reserves indicated by this analysis stem from unequal access to higher education studies which in turn results from uneven distribution of wealth in the country. The latter leads to contrasts between rural and small-town areas on the one hand and big cities on the other, and, consequently, to the emergence of areas underprivileged in terms of access to education. In light of population trends and data in Figures 8 and 9, the potential recruitment reserves in this context may be put (optimistically) at up to about 500,000 over a five-year study period (or one-third of persons aged nineteen to twenty-four residing in rural areas in 2003).

The female-to-male ratio in the student population reveals another area of representation disproportion, there being 1.35 female per every male student in Poland. The corresponding figure in the neighboring Czech Republic is 1.05. The recruitment reserve here may amount to as much as ten per cent or more. More recruitment reserves may in the long run emerge in the so called excluded groups among residents of major towns and cities. However, the size of these populations is hard to gauge without additional studies. Another underrepresented category in the higher education system in Poland are the disabled, accounting for a recruitment reserve of around 1.5 per cent of the country's population as a whole³.

It is expected that Poland's continuing development, and in particular increasing foreign investments, the growth of knowledge-based economy and information society, will result in reduced unemployment levels. Given the character of this development, it is to be expected that over the next few years unemployment will be falling most sharply in the group of persons with higher education. This fact in itself will be promoting higher education studies as a means of acquiring professional qualifications and improving one's overall qualifications, thereby in the next few years preserving – or even increasing – the already high proportion of persons with higher education in the twenty-four to fifty-nine age group. Examples of other European countries show that approximately twenty per cent of such persons is quite a realistic proportion. The potential recruitment reserves in this context may be put at five to ten per cent of the current recruitment level.

One other means of promoting the development of Poland's higher education system would be to limit the mobility of young Polish people seeking jobs and education opportunities in other EU countries. This mobility, most likely is going to have a negative impact on demand for higher education in Poland.

³ Estimate based on the 2002 national census results published by the Central Statistical Office (GUS).

4. Ways of Overcoming Demographic Factors Affecting Demand for Higher Education

Taking into consideration the demographic trends, the current legal framework as well as the considerable institutional autonomy of Polish higher education institutions, the following conditions must be met if potential recruitment reserves are to be tapped into:

- the government ought to adopt a bold, albeit realistic, development strategy for higher education, geared to counteracting the emerging threats, especially the demographic factors detrimental to the higher education system;
- higher education institutions themselves need to develop their own strategies for operating in the changing conditions, addressing also the consequences of unfavourable local demographic trends.

The mentioned strategies ought to be developed, taking into account specific conditions and providing for realistic budgets and implementation programmes, specifying detailed timetables and indicating entities/persons responsible for implementation. This in turn requires financing sources, including also those of EU, and earmarking specific sums for specific objectives, both in the state budgets and in the financial and material assets plans of the higher education institutions concerned. The implementation of the adopted strategies ought to be accompanied by efforts outside the higher education system by entities that may be instrumental in attaining the desired goals.

Another domain which needs to be examined is the gap between rural areas and cities. Tapping into recruitment reserves outside major cities requires a policy of speedier development of rural areas which are home to 38.5 per cent of Poland's population, a figure much higher than in most of the other EU countries. This overall policy ought to include also elements of education policy serving to raise teaching quality in rural schools to the level we see in cities, to promote education in rural communities and to provide financial assistance to young people from educationally disadvantaged areas who might be willing to undertake higher education studies. An important role could be performed in this respect by local governments, but their commitment depends on whether mechanisms are

introduced to encourage the educated young people to return to their home parts and seek employment locally. One way of doing the latter is the setting up a system of scholarship grants or other forms of conditional financial assistance.

Another problem that needs to be addressed is the underrepresentation of males in the student body. Dealing with this issue requires changes in the labour market and in the family model ensuring actual equality of the sexes. Right now some forms of discrimination against women in the job market go hand in hand with the underrepresentation of women in this market. Educational policies in this area must be supported by the ministry of labour and social policy. The entire government in fact must be committed to attaining social objectives in the course of the country's development, most importantly as regards unemployment reduction, given that unemployment is a significant factor hindering elimination of various inequalities and social exclusion in Poland. The current annual GNP growth rate in excess of five per cent which is expected to be sustained in the coming years creates hopes for progress in the discussed areas. A more dynamic education policy realized at grassroots level working with education boards and local governments ought to help attain the objectives discussed here.

All the above suggests that the growth in the number of young Poles traveling abroad in search of employment ought to be counteracted. The more young Poles will be able to find jobs in Poland, the more students we will see attending Polish higher education institutions.

The network of higher education institutions in Poland is adequately (or maybe even excessively) developed in terms of institutional fragmentation and access to the education opportunities close to one's place of residence. What hurts the system are differences in the quality of education on offer which are not conducive to evening out educational opportunities. Large and accomplished academic schools boasting rich traditions and developed teaching facilities are confined mainly to major academic centers where life for students is expensive. An opportunity for better access to what those schools have to offer for students from less affluent regions with underdeveloped educational infrastructures is provided by the Internet. Accordingly, widespread Internet access for residents of villages and small towns should become an actual rather than a merely declared priority for the government. With Internet access, more residents of these areas could

undertake or supplement their studies using distance learning technologies which some public and non-public higher education institutions in Poland have been employing for some five years now. It is estimated that the proportion of students involved in some form of distance learning in Poland is by an order of magnitude lower than in Great Britain, for example, where the figure stands at thirty per cent.

The boom in demand for higher education in Poland led to a rapid development of higher education institutions, student numbers as well as growing numbers of persons with higher education degrees. The next step is development of diverse forms of lifelong learning. The progress in this area is entirely feasible provided the higher education institutions succeed in better adapting their offers to changing labour market realities, and is essential if we want to tap into important recruitment reserves in post-graduate studies and specialist courses – but also in regular higher education studies. Higher education institutions must also open up new avenues for education, self-education and supplementary education for disabled persons who are still not sufficiently represented in the higher education system and continue to face barriers in the job market. More efforts need to be made in the area of lifelong learning and the government needs to propose new legal instruments to promote its development. Higher education institutions should on their part recognize recruitment threats as a major challenge to their further development and do all they can to take remedial action.

5. Systemic Framework for Higher Education Institutions Operation Created by the New Act on Higher Education

The current legal framework in which Polish higher education functions lays down new competition rules in the higher education system. Higher education institutions, whether public or non-public, are now free to make use of their unique opportunities to counteract the adverse demographic processes affecting them. Higher education institutions now have more room to implement their own policies of improving school operation and developing school assets. Among other things, public higher education

institutions can now shape their budget structures themselves and have the right to create separate pro-development funds.

The key notions in regulations aimed at improving operation conditions and school assets development are:

- competitiveness of schools;
- sectors convergence;
- career models, employment relationships, responsibilities and remuneration of academic staff;
- financial conditions of school operation.

The 2–5 law gives higher education institutions more leeway in determining their own human resources and remuneration policies and in defining the tasks of their academic staff, providing for:

- schools entrepreneurship;
- flexible tuition rules;
- valuation of public subsidies and not just of payrolls;
- restrictions on tenure and multiple employment of academic staff;
- the schools' own remuneration regulations.

The Act also allows consolidation of institutions, aggregation of assets and staff integrations. The statutes of higher education institutions are now a much more important regulation sources, which means the schools can diversify, better adapting themselves to the ever changing local needs and restrictions.

The Act on Higher Education calls for a convergence of the public and non-public sectors in the sense that both public and non-public higher education institutions are now required to operate according to the same rules. The ownership status of the schools' assets is thus no longer a significant issue and the things that matter are the schools' vision, achievements, education quality and position in the education market. The common rules imposed by the Law upon all types of higher education institutions include:

- the same requirements for and standards of the offered education;

- the same employment relationship regulations;
- rules of financing intramural studies in public and non-public higher education institutions, with the latter now gaining access to public funding;
- rules for competition in extramural studies applicable to both public and non-public higher education institutions.

As part of the convergence policy, students and doctoral students in both sectors enjoy the same rights to social assistance (which leads to greater equality in terms of access to education), while schools enjoy the same measure of autonomy. The development of competition in the higher education services market which entails equality of opportunities and is essential if schools are to succeed in overcoming the recruitment barrier, depends to a large extent on the manner and level of public financing of higher education institutions. The 2005 Law allows the education minister to spend public funds also on non-public schools. The principal question in this context is how to increase public outlays on higher education, how to rationally distribute the available funds, and how to provide schools with more ways of securing financing from non-state budget sources, given that the competitiveness of a school is in considerable measure dependent on its financial standing.

Taking into account the new legal regulations and the experience of higher education institutions to date, the following solutions are advisable:

- a task-related state budget structure, with separate subsidies for educational activities and investments distributed by the education minister among public (mandatory) and non-public higher education institutions (optional);
- a more effective utilization of the pan-European Lisbon Strategy on the national level, leading to increased outlays on scientific research serving to improve the competitiveness of Polish higher education institutions in international rankings;
- introduction of new instruments for pro-innovation policies (legislation regulating innovation and financing of science, appropriate tax policies, capital market instruments, etc.);

- policies taking into account not just the size of school budgets but also budget structure, allowing schools to earmark part of their net profits for development or adaptation strategies;
- task-related financing of the basic units of higher education institutions;
- development of diverse forms of lifelong learning available to citizens.

Higher education institutions may benefit greatly from their own systems of scientific research offering diverse ways of consolidating research teams and integrating research ventures into broader-ranging programmes. Likewise beneficial would be the creation of the institutions' own research units as well as of the so called academic entrepreneurship incubators and technology transfer centers provided for by the current legal regulations. Market mechanisms continue to gain significance in the new situation, including the tuition instruments and bank credit as an instrument serving school development.

In recent years, the higher education system has witnessed a growing importance of partnership with external entities. Recognizing this, the lawmakers provided the following regulations:

- school associations being a new form of federated university with legal entity status;
- inter-school or jointly operated units (joint award of diplomas);
- PhD studies conducted jointly by two or more institutions;
- partnership with business entities (credit for modern technological infrastructure development), involvement of higher education institutions in scientific consortia and networks, in national framework programmes and long-term programmes;
- regulations lending the higher education system a European dimension and character and involving schools in the development of new education standards in line with prevailing European trends.

The present regulations reviewed above are important in that they grant autonomy to higher education institutions and introduce a set of rules that

will allow them to effectively tackle the adverse demographic trends in the coming ten to fifteen years. Faced with these challenges, the schools now have instruments allowing them to develop and implement strategies of their own choice and to pursue development policies which they see as best serving their interests.

6. Opportunities and Challenges

Analysed earlier, the demographic factors affecting higher education cannot be examined without considering also other circumstances impacting on the system, such as the legal and economic factors and labour market developments affecting the development of Poland as a member country of the European Union. The developments in many of the considered areas cannot be confidently foreseen, so current predictions must necessarily concern ranges of likely values of the various indicators. This uncertainty is by no means unusual and is integral to all prognoses of future social and economic phenomena which are affected by a range of factors operating more or less unpredictably.

Examples of such unpredictable factors include global phenomena, such as macroeconomic trends in Poland, Euroland and the emerging European markets which are all affected by the situation in the USA and further afield – in India, China and other Far Eastern countries. All of these factors, most general in nature, will be shaping the development trends in this part of Europe, affecting GNP growth and currency exchange rates, stock exchanges, job markets and the affluence of these citizens. Tax policies (possibly involving the introduction of a flat tax rate) will be affecting the pace of development of well-to-do groups and financial elites in Poland and the other twelve new EU member states, including also Bulgaria and Romania which joined the EU on January 1, 2007. It cannot be disregarded that the situation in the enlarged EU, which may or may not evolve towards overcoming the internal crisis, brought about the failure to ratify the European Constitution. The pan-European political situation will no doubt have bearing on the way millions of citizens perceive their own Europeaness, especially in the twelve new member states, which in turn will be affecting the way people perceive countries of the “old” European Union and, consequently, the emotions generated by the citizens’

assessment of their own prospects in the united Europe. If successful resolutions of the EU's internal problems are going to be seen and if pro-Union attitudes prevail over national egoisms, an upsurge in Euro-optimism which in turn may encourage more and more people to migrate within Europe will be registered. This may be especially true for young Poles who may become inclined to consider long-term settlement outside their own country.

These factors alone could seriously affect the higher education system in Poland, and this not only in terms of recruitment and students' motivation to continue or complete their studies in Polish schools. Another factor that may be gaining in prominence as time goes by is the already increasing competition in Poland's higher education market.

A significant catalyst for this competition will be the demographic situation, while the intensity and, most importantly, the scale of the consequences of this phenomenon will depend also on the activity of European competitors of Polish higher education institutions, notably the globally recognizable universities which may want to exploit their international position and prestige to gain footholds in the emerging educational markets. This activity may take the form of recruitment drives launched in Poland based on professional promotion campaigns. It is also likely – especially in light of the dynamic economic growth in countries of Central and Eastern Europe – that some European or American universities will want to invest in Poland and other new EU member countries or simply take over local non-public schools or their campuses to launch paid higher education courses in selected fields of study, presumably on top academic level, much higher than available locally. It is hard to tell whether we can realistically expect to see a major expansion of this kind in the coming ten years.

It is also hard to predict how many students and would-be students will choose to study abroad, or how many foreigners will be enrolling at Polish higher education institutions. What we can predict fairly confidently is that the net balance of this traffic will not be in favour of Poland or any of the other twelve new EU member countries. The only uncertain thing here is the possible scale and consequences of this phenomenon for the higher education systems in all these countries. The consequences will depend on local demographic situations, regardless of the scale of student migrations.

Worth stressing, however, is that governments of the new EU countries are in a position to take more or less effective action to contain the consequences of the emerging challenges by introducing suitable educational policies. The Polish government should be working to create better conditions for development of the higher education system in Poland, *inter alia* by providing financial incentives and social policy instruments intended for groups which are currently underrepresented at higher education institutions, thereby creating additional demand through boosting motivation and indicating the higher education opportunities offered by Polish schools. Government initiatives should also include efforts to bolster the competitiveness of Polish higher education institutions by, among other things, pouring more money into individual institutions, supporting consolidation processes and defining state strategies, especially as regards long-term investment programmes.

What is also needed in Poland is the emergence of flagship institutions in the higher education system with a significantly stronger international position. For this to happen, parliament has to suitably amend the existing Legal Regulations concerning financing of research. The international position of the necessarily few elite higher education institutions depends primarily on their scientific research results. International success also requires these schools to consolidate in order to create the so called 'research universities' that would be truly large and powerful in terms of international standards.

There already exist legal incentives for such consolidation in 2005 law on Higher Education which allows for the creation of school associations as institutions in their own right. The financial incentives for consolidation ought to be provided for in the state budget act which is drafted by the government and adopted by the Parliament. Any significant rise of the future Polish university powerhouses in international rankings will benefit all higher education institutions in this country, including the smaller ones which should also be consolidating, aggregating their resources and pooling their staff if they want to survive in the marketplace. With the recruitment boom now over, it is to be expected that in the coming ten years there will be a drop in the number of students, one consequence of which will be a shift in proportion between intramural and extramural studies, with the former gaining the upper hand. Given that the existing laws

guarantee steady increases in public financing of the higher education system by means of subsidies valuation (unlike in the past when only remuneration of state employees was increased at the expense of assets expenditures) and that the number of students will be dropping, we can hope for an actual per capita increase of state outlays in higher education, eventually matching the financing levels in the Czech Republic or Hungary which are currently around fifty per cent higher than in Poland. Incidentally, this disproportion in financing is reflected in the competitiveness of Polish higher education institutions vis-à-vis their counterparts in the mentioned countries.

7. Conclusions and Scenarios

In conclusion, the following two distinct scenarios for the future development of the higher education system in Poland can be envisaged: the *pessimistic* and the *optimistic*. The former is based on the assumption that there will be no significant change in public financing of higher education, that higher education institutions will have less leeway in their remuneration policies, and that lawmakers will go ahead with the recently contemplated changes in the tax system that will hurt income levels of the creative professions. The decreasing number of students will be used as a pretext to reduce state budget outlays in subsequent years, with this move being justified by the task-related nature of financing higher education. As a result, the level of higher education funding in per-student terms will remain disgracefully low. At the same time, rising levels of state financing of scientific research will not be stimulating the emergence of research universities. All these developments will be limiting the development opportunities of Polish higher education institutions which will be growing increasingly pessimistic about their future outlook. The mediocre standing of Polish higher education institutions (even the leading ones) in international rankings will fail to improve, thus giving rise to deepening frustration of their students and academic staff alike. The quality and quantitative characteristics of the Polish higher education system will be determined by a combination of demographic factors and reduced competitiveness of Polish schools in the European educational market. In

this pessimistic scenario a fifty per cent drop in the number of students and the bankruptcy of many schools is to be expected.

The pessimistic scenario is not the only one possible, however. Also likely is an optimistic one in which the government provides financial support for academic teachers realizing their mission, and implements a dynamic pro-development programme in the Polish higher education system, treating the emerging trends – including also the demographic ones – as an opportunity for Polish schools to experience a qualitative leap. The priority in science financing is the creation of research universities which will continue to grow as their autonomous authorities go ahead with carefully planned and government-supported consolidation processes. State budget outlays on education continue to grow at least at the valuation rate provided for by current regulations, and this regardless of the falling number of students brought about by whatever factors, eventually leading to a significant increase in this spending in terms of GNP percentage. The priority in economic and social policies supported by EU financing is the development of knowledge-based economy and information society, one expression of which is a more robust Lisbon Strategy programme in Poland, compatible with development goals of the Polish higher education system. The number of students goes down but not as sharply as in the pessimistic scenario, while the dominant phenomena on institutional level have to do with useful consolidation initiatives rather than painful bankruptcies of entire schools or elimination of some of their faculties. The best and largest (larger than today) Polish universities boost their international prestige, thus sending out a clear message to public opinion at home and abroad that it is a good idea to undertake higher education studies in Poland.

The question remains, which of the two scenarios is more probable or more likely to prevail in shaping the future of the higher education system in Poland. It is not possible to give a clear answer to this question, therefore this analysis is concluded by pointing out that the Polish society expects that the optimistic scenario of development of the Polish higher education system is being developed and implemented.

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References

- ACZMARCZYK, P. and OSKÓLSKI M. 2005. *Migracje specjalistów wysokiej klasy w kontekście członkostwa Polski w Unii Europejskiej* [Migration of High Class Specialists in the Context of the Membership of Poland in the European Union]. Warsaw: UKIE. (In Polish)
- ANTONOWICZ, D. 2007. *Demograficzne uwarunkowania rozwoju szkolnictwa wyższego w Polsce* [Demographic Conditions of Development of Higher Education in Poland]. (unpubl.). (In Polish)
- BANK ŚWIATOWY. 2004. *Szkolnictwo wyższe w Polsce* [Higher Education in Poland]. Raport nr. 29718. Warsaw: World Bank. (In Polish)
- EUROPEAN COMMISSION. 2007. *Eurostat Yearbook 2006-2007*. Brussels: EC
- POLAND. GŁÓWNY URZĘD STATYSTYCZNY (GUS). 2004. *Szkoły wyższe i ich finanse: komentarz analityczny* [Institutions of Higher Education and their Financing: Analytic Commentary]. Warsaw: GUS. (In Polish)
- , 2006. *National Statistics* <http://wqwww.stat.gov.pl> (Accessed 22 March 2008)
- SOWA, Z. (ed.). 2004. *Mały rocznik statystyczny Polski* [Concise Statistical Yearbook of Poland]. Warszawa: GUS. (In Polish)
- SZTANDAR-SZTANDERSKA, U., MINKIEWICZ, B. and BĄBA, M. 2004. *Oferta szkolnictwa wyższego a wymagania rynku pracy* [The Higher Education Offer and the Demand of the Labour Market]. Warsaw: ISW. (In Polish)

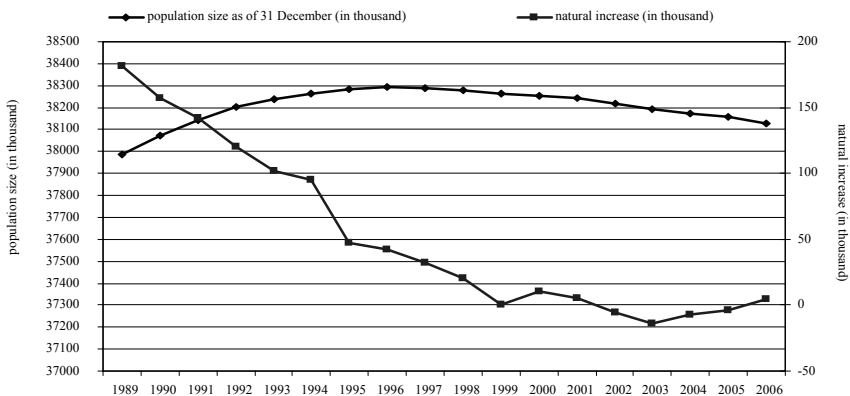
Demographics and Higher Education in Poland

Janina JÓŹWIAK

1. General Trends

Since 1989 the population of Poland underwent major demographic changes. As can be seen in Figure 1, the overall population after the year 1989 initially increased to reach a peak in 1996 with 38.294 million persons. This was a result of the positive natural increase (*i.e.*, the difference between the number of births and deaths in a given year). However, the rapid decline of natural increase during the analysed period led to a decline of the population since 1996. This trend first reached a negative value in 2002, and continued for four years. Recently the value of natural increase reached again the positive value of 4,500 persons per year. This slight change in the population trend is due to an increase in the number of births which will be discussed in the next sections.

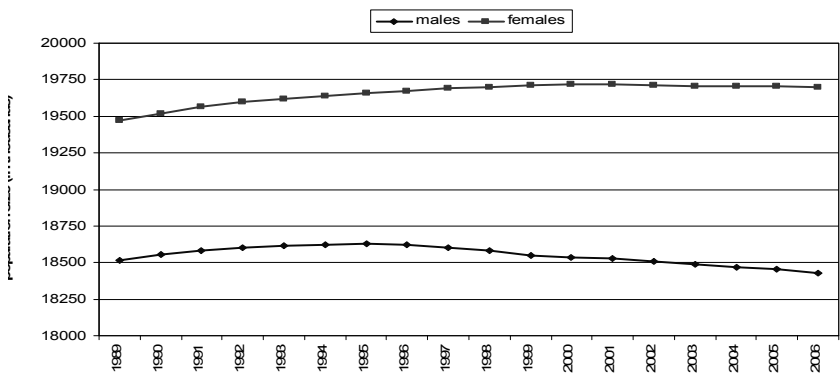
Figure 1. Size of Polish population and natural increase, 1989 – 2006



Source: GUS [various years].

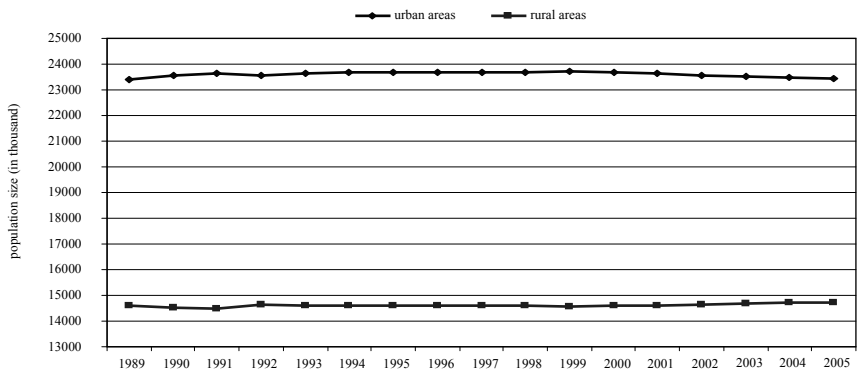
The two following figures give an overview of the population size with respect to sex (Figure 2) and with respect to the place of residence (Figure 3). Irrespectively of the age groups, females are more numerous than males. Although the difference between number of males and females seems to be quite stable we can notice slight decline in the number of males. This is probably related to higher morbidity of males and also higher migration rates for males. These issues will be discussed in the following sections.

Figure 2. Size of Polish population with respect to sex, 1989 – 2006



Source: GUS [various years].

Figure 3. Size of population with respect to place of residence

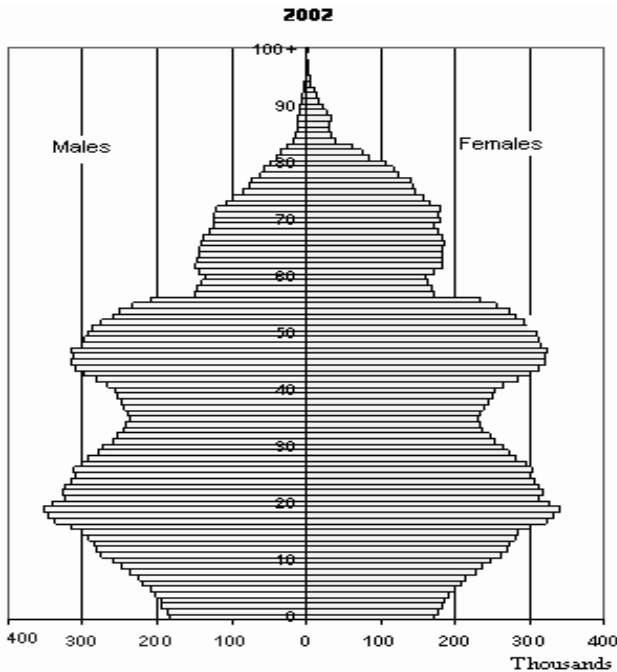


Source: GUS [various years].

The trends in the ratio of urban to rural population seem quite stable over the time. The average difference between urban and rural population of Poland yields almost 9,000. In Poland the population living in urban areas constitutes around sixty-one per cent of the total population. The most rapid increase in the proportion of urban population was registered after the Second World War and in the three following decades. However, this figure is quite stable since 1985 and shows only minor fluctuations.

While looking at the age structure of the population (Figure 4) one can observe significant irregularities in the age pyramid which reflect two baby booms in Poland: the post-war baby boom and a second one at the beginning of the 1980s. The first boom resulted in the relatively higher proportion of population aged fifty to sixty years, while the latter resulted in a higher number of persons aged twenty to thirty.

Figure 4. Population of Poland by age and sex

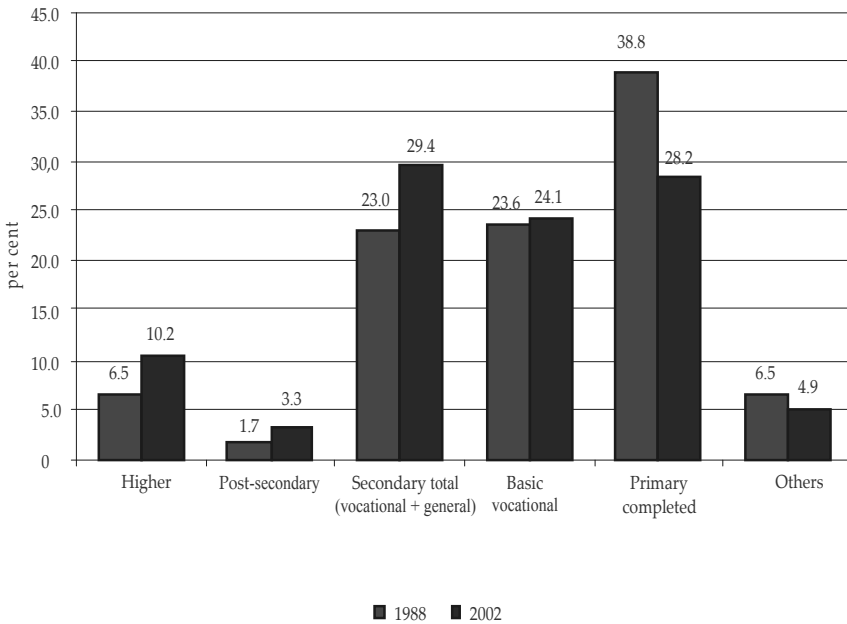


Source: GUS [various years].

Of course, these irregularities in the age structure of Poland's population have a meaningful impact on the higher education system, the labour market developments and the social security system.

The educational structure of the Polish population is changing towards larger proportion of individuals with higher education. The data presented in Figure 5 shows that the share of individuals with a high level of education grew by almost four per cent between two national censuses, those of 1988 and 2002. There is also significant growth in the attainment of secondary education (a change from twenty-three per cent to 29.5 per cent). Another important change in the education structure of the population is a substantial drop in the share of individuals with only primary education. As compared to 1988 the proportion dropped in 2002 by ten per cent.

Figure 5. Structure of population by the educational attainment in 1988 and 2002 (National Censuses data)

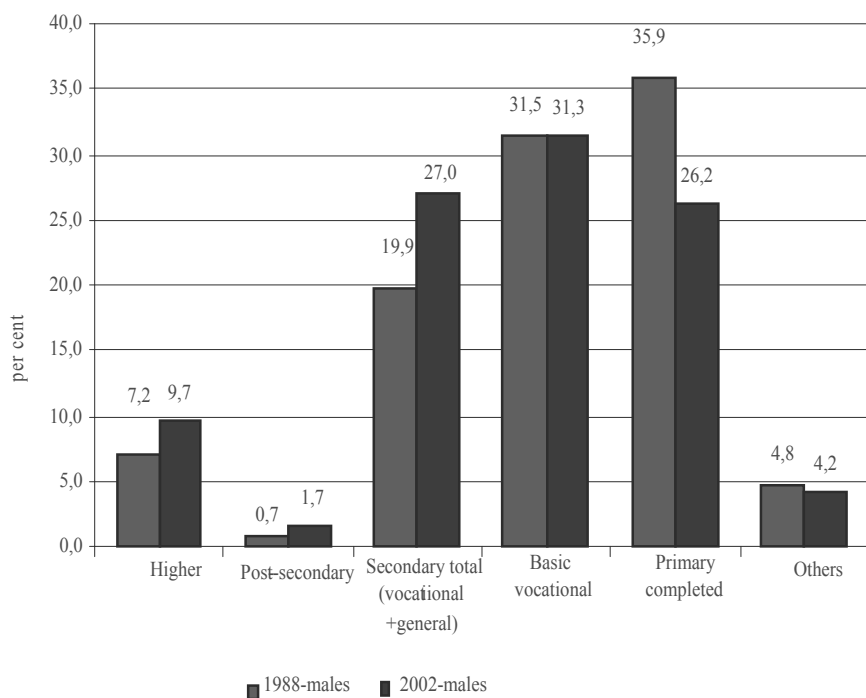


Source: GUS [various years].

However the most significant changes in the educational structure of the Polish population could be noticed with respect to the gender. As can be seen

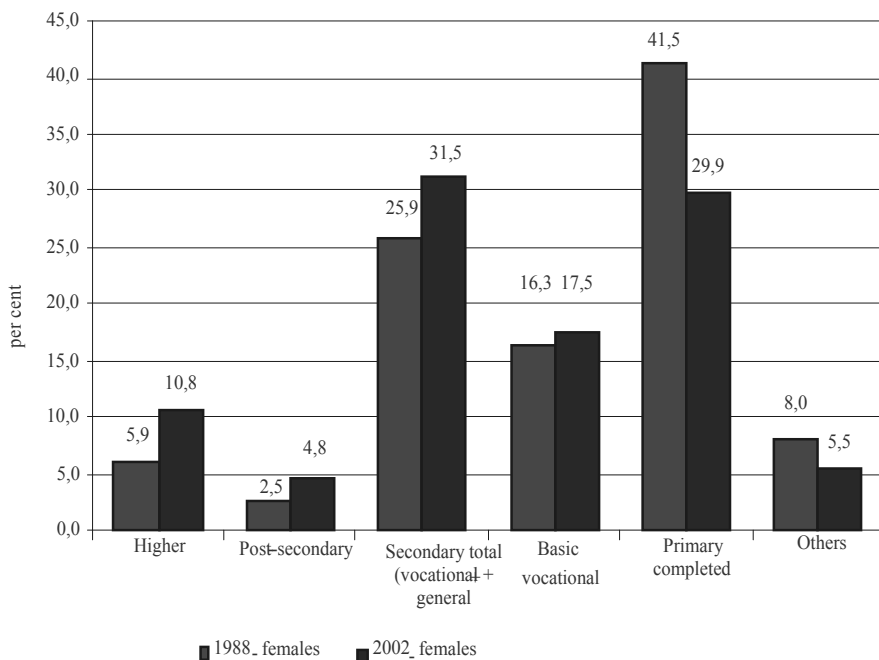
in Figures 5a and 5b, the proportion of females with higher education increased from six per cent to eleven per cent between 1988 and 2002. The proportion for males increased only from seven per cent to ten per cent between the two analysed periods. The changes in the proportion of individuals with higher education, as well as changes in the other levels of education, stand for a major shift in the social position of women. The increased educational activity of women reflects the changes from traditional to modern division of social roles. This, in turn, translates to higher labour force participation of women and to modern forms of household formation with higher proportion of consensual unions, higher age at childbearing and higher rates of out-of-wedlock births.

Figure 5a. Structure of males by the educational attainment in 1988 and 2002



Source: GUS [various years].

Figure 5b. Structure of Polish females by the educational attainment in 1988 and 2002

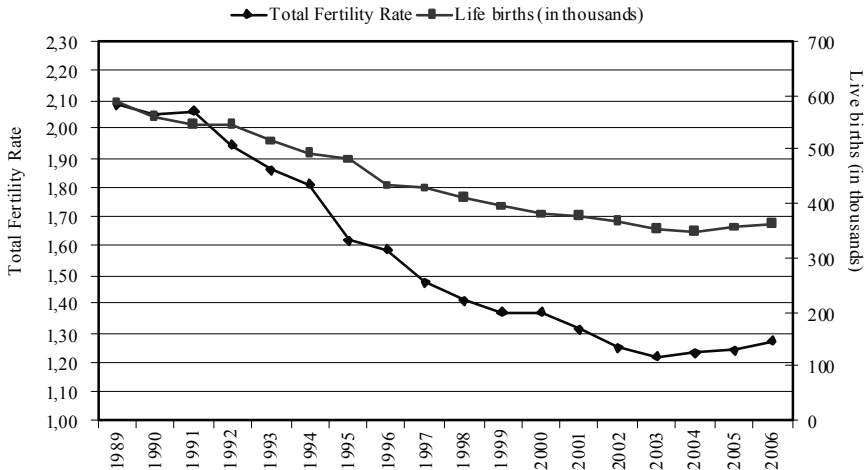


Source: GUS [various years].

1.1. Births and fertility

After 1983, the year of the highest number of births in the post-war history of Poland, the number of births has been declining steadily. However, this decrease accelerated at the beginning of the 1990s. The period rates of fertility in Polish population changed remarkably during the whole analysed period from 1989 to 2006. The change in the reproductive behaviour of the population was one of the main reactions to the process of economic transformation after 1989. Figure 6 gives a picture of the changes in the total fertility rate (TFR) as well as in the absolute number of live births.

Figure 6. Total Fertility Rate and absolute number of live births (in thousand), 1989-2006



Source: GUS [various years].

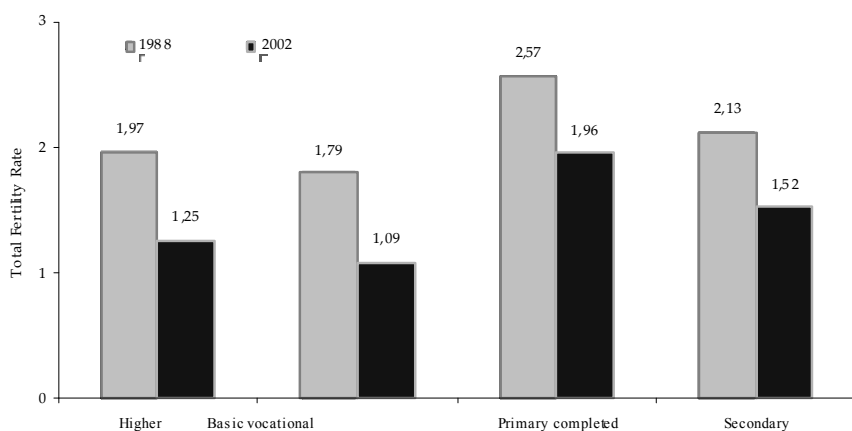
At the beginning of the economic transition the TFR was around the replacement level, *i.e.*, 2.1, whereas at the end of 2006 it had reached a value of 1.27. The period between 1989 and 2003 can be characterised by constant drop of fertility rate to the lowest level of 1.22 in 2003. In 2001, the TFR in Poland crossed the line of the so-called “lowest-low” fertility (1.3). Since 2003, weak symptoms of change can be noticed. As compared to 2003 the TFR grew by 0.8 per cent, 1.6 per cent and 4.1 per cent, respectively, in the years 2004, 2005 and 2006. This growth can be attributed to the reproduction of women who have been postponing births. The postponement of childbearing was the main cause of the rapid decline in the fertility rates from 1989 onwards. This process resulted in lower number of births in a given period. However, at some point in time, women who had been postponing reproduction decided to have a baby. Thus, as a result we can observe an increase in fertility rates such as described earlier.

Another reason for this slight increase of number of births is that the numerous cohorts of women born at the beginning of the 1980s entered their age of the highest reproduction.

The process of reproduction postponement could be attributed mainly to the activity of females on the labour market and thus to difficulties in reconciling motherhood with a professional career. As discussed earlier, the activity on the labour market seems to be predetermined by the level of education. Thus we can expect a positive relation between the number of years spent in the education system and the age at childbearing. In the year 2005, the median age at childbearing for females with higher education was twenty-nine years, for females with post-secondary education twenty-eight years, for females with secondary education twenty-seven, and for females with primary education twenty-four. This progression reflects the fact that females with higher levels of education postpone childbearing due to higher indirect opportunity costs (for instance, foregone wages), different modes of family formation and different lifestyles and values.

On the other hand, if a range of the decrease in the TFR of women (between 1988 and 2002) by the level of education is taken into consideration, we can conclude that the steepest decrease can be observed among women with secondary education (who also have the lowest level of fertility in absolute terms) and not among those with higher education (Figure 7).

Figure 7. Total Fertility Rate by mother's level of education, National Censuses 1988 and 2002, Poland

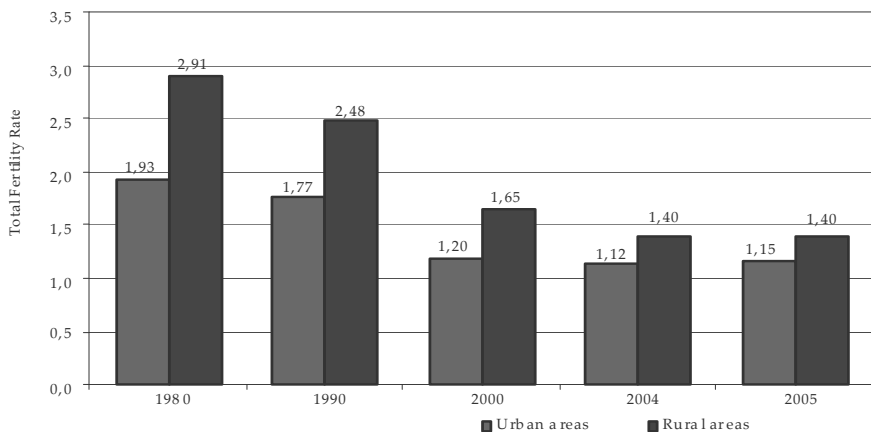


Source: GUS [various years].

From many surveys and research carried out in Poland it is known that the main reasons for the decrease in the number of children at the family or individual level are a feeling of lack of security (in general terms), unemployment and economic uncertainty. Women with higher education are the least sensitive to these factors. The impact of these determinants on demographic behaviour of the highest educated women is the weakest, which is also the case for other European countries (Sobotka, 2004).

The difference between patterns of reproduction in rural and urban areas seems to be quite apparent. Figure 8 gives an overview of these differences in selected years. Traditionally, rural areas have higher rates of reproduction than urban areas. However the decline of fertility can be noticed both in rural and urban areas.

Figure 8. Total Fertility Rate in selected years, urban and rural areas



Source: GUS [various years].

Differences in fertility behaviour and family formation of women with different levels of education and with respect to the place of residence can be easily identified through an observation of changes over time of the average of births in the groups of women (Table A1 in the Appendix).

Patterns of fertility vary significantly both with respect to the mother's level of education and place of residence. Women with higher education have the lowest average order of birth and at the same time the highest degree of

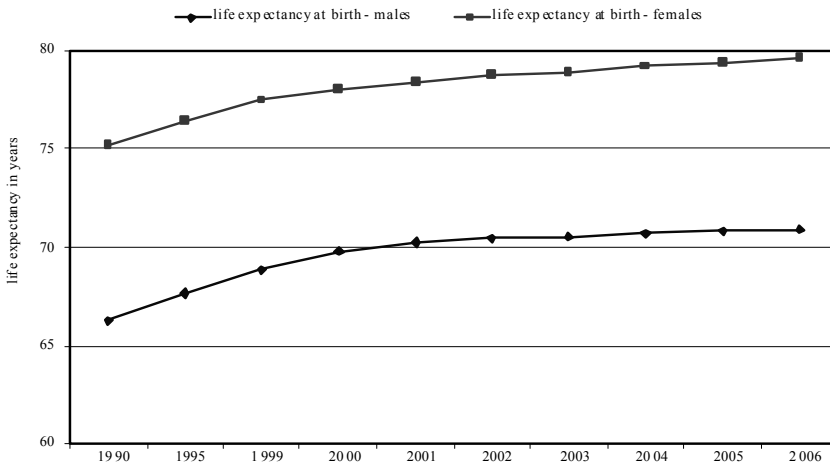
postponement (measured at the mean age at childbearing). Since the proportion of women with higher education constantly increases, their fertility patterns may have more influence on demographic situation (with all its consequences) in the future.

The dramatic decline in the fertility rates from 1989 is mostly responsible for the changes in the size of Polish population. Since 2003 we can notice a slight increase both in fertility rates and the absolute number of births. However, the recent increase in the rates of fertility might be a short-term phenomenon and after this short-term increase in fertility rates we might expect further stabilisation on the low level.

1.2. Life expectancy and mortality

Life expectancy at birth in Polish population yielded in 2006, *i.e.*, 70.9 years for males and 79.6 years for females. The life expectancy both for males and females exhibits constant upward trend in time. If we compare year 1990 and 2006, the expectancy increased with 4.7 years for males and 4.4 for females. These changes are illustrated in Figure 9.

Figure 9. Changes in the life expectancy at birth for males and females, 1990-2006



Source: GUS [various years].

Changes in life expectancy which occurred in Poland between 1990 and 2006 are substantial, as compared to previous years. In the period from 1965 to 1990 life expectancy at birth of males did not improve and remained unchanged. For working age males the situation was even worse. For instance, life expectancy of males aged forty-five decreased from 28.05 to 26.04 years between 1965 and 1990. For females a slight increase (three years) was observed in the value of life expectancy at birth in a period of twenty-five years (1965-1990).

After 1990 very significant improvement of life expectancy for all age groups and both sexes has been observed (Table 1).

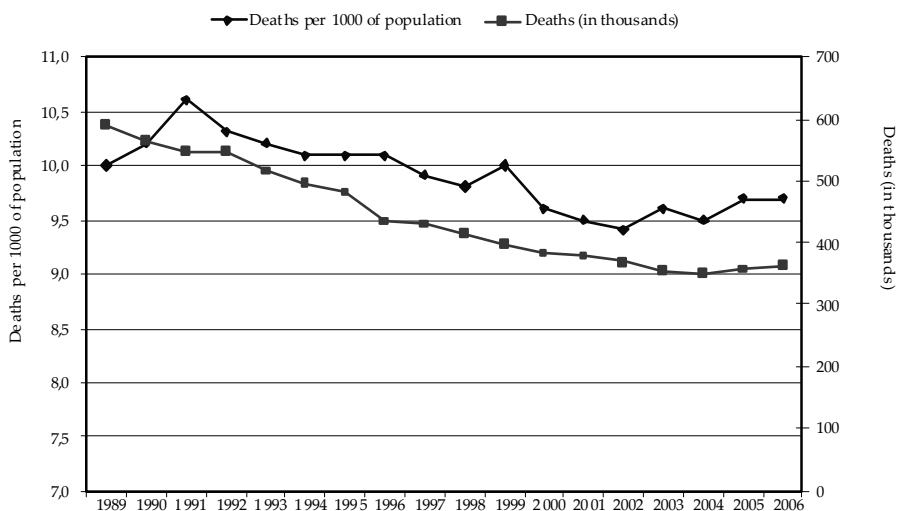
Table 1. Life expectancy by age and sex, selected years 1990-2005

Year	0		15		30		45		60	
	males	females	males	females	males	females	males	females	Males	females
1990	66.51	75.49	53.06	61.83	39.10	47.16	26.04	32.97	15.31	19.96
1995	67.62	76.39	53.92	62.56	39.81	47.87	26.68	33.61	15.84	20.52
2000	69.74	78.00	55.59	63.76	41.36	49.03	27.93	34.65	16.72	21.51
2004	70.67	79.23	56.40	64.88	42.12	50.13	28.59	35.68	17.38	22.48
2005	70.81	79.40	56.49	65.04	42.23	50.27	28.71	35.84	17.51	22.65

Source: Governmental Population Council, 2007. Although there is a significant improvement in life expectancy the gap between expectancy for males and females is still substantial. The male – female difference in life expectancy could be attributed to behavioural, social, and biological factors. Although the gap has been narrowing it is still quite substantial and reflects strong differences in survival for both sexes. However, it is worth to emphasize that the male excess mortality (as compared to women) is much lower than it used to be before 1990.

Along with the increase in life expectancy we can observe a decline in the number of deaths both taking into account absolute and relative values (per 1,000 inhabitants). However in recent years (from 2003) we can observe a stabilisation of both measures and even a slight increase in the overall death rates per 1,000 inhabitants.

Figure 10. Deaths per 1,000 inhabitants and absolute number of deaths, 1989-2006



Source: GUS [various years].

This stagnation is to some extent related to changes in the age structure of the population of Poland. When we take into account standardized (with the age structure of the year 2000) death rates (Table 2) we can observe a steady decrease of mortality in Poland.

This decrease occurred in all considered age groups (Table A2 in Appendix), especially younger ones, but also medium age groups.

Table 2. Standardized death rates (per 100,000 inhabitants), selected years 1990-2005

Place of residence/ Year	1990	1995	2000	2005
Total	1,138	1,072	962.4	873
Urban	989	1,073	954	853
Rural	1,124	1,085	985	903

Source: GUS [various years].

Taking a closer look at the death rates with respect to urban and rural areas it is difficult to notice any major new developments. As expected, rural

areas exhibit slightly higher death rates than urban areas. Simultaneously, in both areas overall death rates have been declining and the gap between them has been diminishing slightly.

1.3. Changes in age structure, population ageing, working age population

The classical breakdown population between three broad age groups, zero to fourteen, fifteen to sixty-four, sixty-five and more, gives possibility to analyze conventional relationship between size of populations of children, parents and grandparents – which enables to assess process of ageing of population.

In Poland these relationships have undergone major shifts during the period from 1990 to 2006. Due to decreasing number of births and, at the same time, increasing life expectancy, proportion of the population group zero to fourteen declined significantly – mainly for the benefit of the age group sixty-five and over (Table 3).

Table 3. Age structure and indicators of population ageing, selected years 1989-2006

Year	Age groups (per cent)			Ratio 65+ per 1,000 inhabitants	Median age
	0-14	15-64	65+	0-14	
	Total				
1989	25.5	64.7	9.8	383	32
2000	17.8	69.4	12.8	718	35
2006	15.8	70.7	13.5	857	37
	Urban				
1989	24.7	66.7	8.6	348	32.9
2000	15.9	71.8	12.3	777	37.2
2006	14.1	72.5	13.4	950	38.4
	Rural				
1989	26.8	61.5	11.7	434	31
2000	20.9	65.6	13.5	647	34
2006	18.4	67.9	13.7	744	35

Source: GUS [various years].

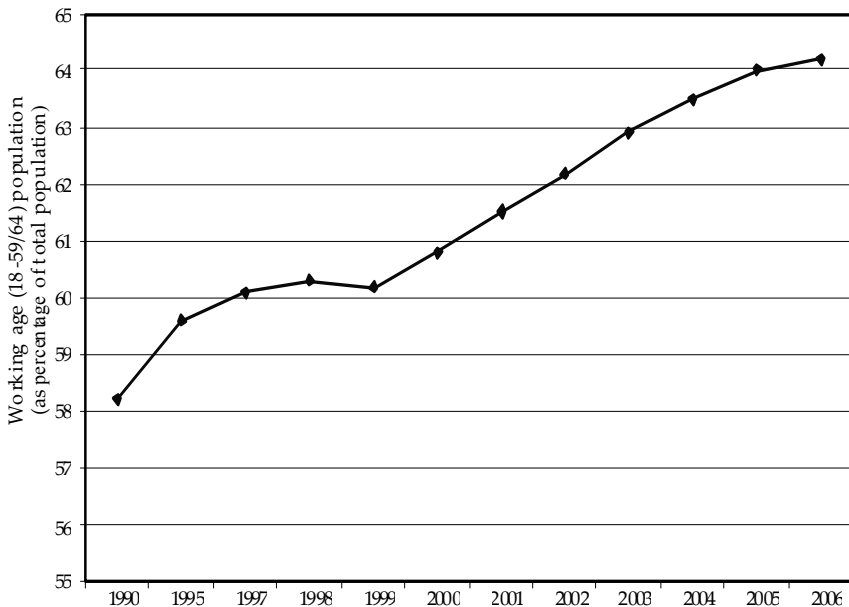
Changes in the age structure consisting of an increase of population of the elderly stand for an ageing of the population. The process of ageing can be measured in different ways.

In Poland, an increasing number of persons aged sixty-five and over per 1,000 children shows a rather high intensity of this process. Also, a significant increase of the median age of the population (especially in urban areas) is evidence of the advancement of population ageing in Poland. However, we have to underline that Poland's population still belongs to the relatively young ones in Europe.

Of course, population ageing has an important impact on many components of the economic and social system (health, education, social security, labour market).

The share of the working age population (*i.e.*, population between the age of eighteen and the age of retirement, which is sixty for women and sixty-five for men) of Poland is growing since 1990. At present it constitutes almost sixty-five per cent of the total population (Figure 11).

Figure 11. Working age population (18-59/64) as a share of total population of Poland, 1990-2006

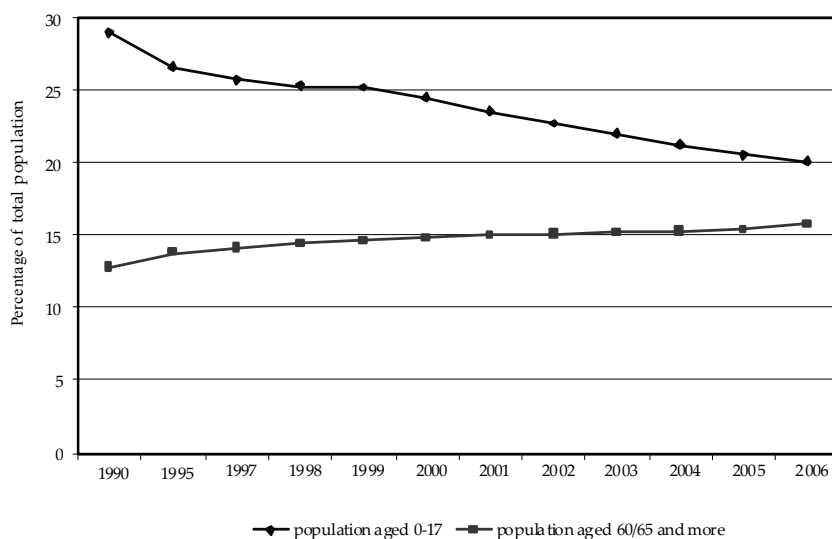


Source: GUS [various years].

This situation is due to the fact that presently the working age population on the labour market were born between 1947 and 1988, a period characterised by a high number of births. Therefore we can expect an end of this positive trend, related to declining number of births after 1989 and the fact that in the near future large cohorts born after the Second World War are going to retire. Thus in the coming years the working age population of Poland is expected to decline.

These predictions are based on the data presented in Figure 12. It is clear that the share of pre-working age population is declining while the share of the retirement-age population aged sixty to sixty-five is steadily increasing. The share of population aged zero to seventeen decreased from thirty per cent in 1990 to twenty per cent in 2006 which is associated with rapid decline in the number of births after 1989. The share of population aged sixty to sixty-five and over is increasing slowly but we can expect an acceleration of this process in the subsequent years due to large cohorts which will exit the labour market. Therefore, we can expect these two lines representing share of young and share of old to cross in the near future.

Figure 12. Population aged 0-17 and 65 and more as a percentage of the population, 1990-2006



Source: GUS [various years].

What is important in these structural shifts of the working age population of Poland is that this group also undergoes an intensive ageing process. The proportion of persons at the so-called “non-mobile” working age (forty-five to sixty for females and forty-five to sixty-four for males) increased rapidly in the period under study: from 30.4 per cent in 1988 to 37.7 per cent in 2006 (in urban areas from 29.6 per cent to 39.1 per cent respectively; in rural areas from 31.7 per cent to 35.2 per cent).

In conclusion, let us look at the changes in size and proportion of young adults aged nineteen to twenty-four, *i.e.*, at the normative age of participation in higher education.

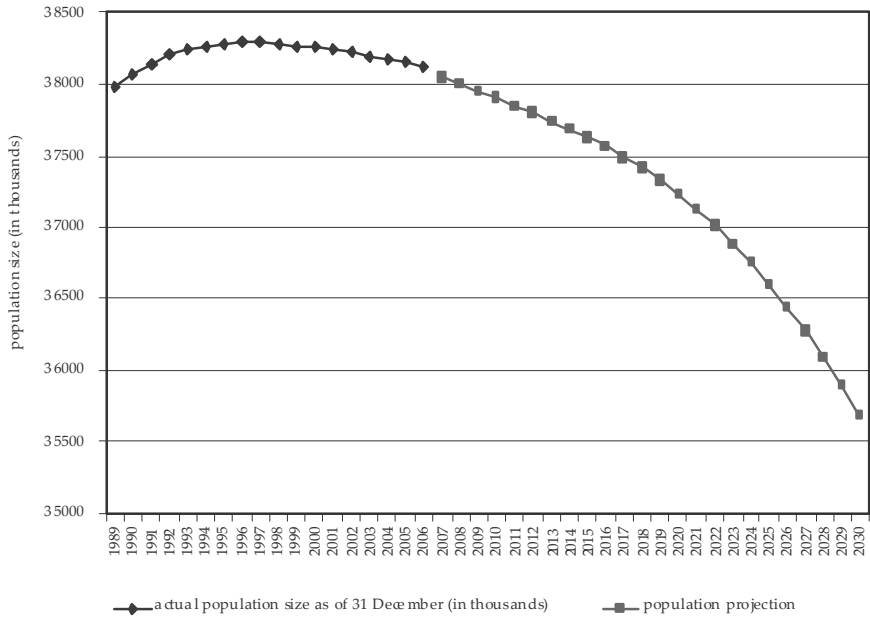
The size of this sub-population increased until 2004 when it reached 3.96 million (as compared to 2.98 million in 1988). Afterwards, it started to decrease slightly to the level of 3.89 million in 2006. Changes in the share of this group in the total population look more modest: from 7.9 per cent in 1988 to 10.4 per cent in 2004 and ten per cent in 2006.

1.4. Population projections 2000-2030

Population projections estimated by the Central Statistical Office in 2003 were designed to forecast the population size up to 2030, taking into consideration various levels of fertility, morbidity and migration. However, the assumption concerning the changes in the level of fertility has been a major concern, due to the fact that changing levels of fertility are the main force in shaping the size of Polish population after 1989. This applies not only to the total population size, but also to changes in the age structure of the Polish, especially the share of young people (below the age of eighteen) and the elderly (above the age of sixty-five).

Figure 13 illustrates the results of the projection of the population up to 2030. As can be observed, the forecast predicts a constant decline in population from around 38.1 million in 2006 to 35.7 million in 2030. This substantial decline is predicted mostly as a result of dropping fertility rates and an increase in outflow migration. The shifts in the population size will also affect the age structure of the population and change the balance between the young population (below the age of eighteen) and old population (above the age of sixty-five).

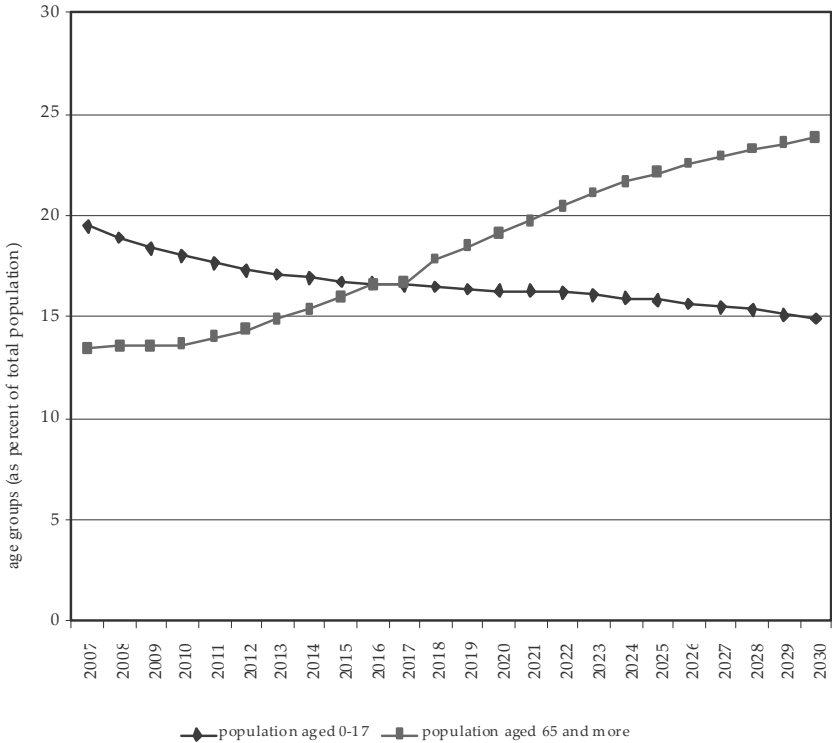
Figure 13. Actual population size and projection of Polish population, 2007-2030



Source: GUS [various years].

As projected by the Central Statistical Office, the age structure of the population will shift towards a higher share of older individuals and a declining share of the young (Figure 14). However, the pace of the population decline below the age of eighteen is much slower than the increase of the elderly population. This is associated with the assumption of a slow fertility decline over time whereas the increase of the “old” share of the population is mostly driven by the retirement of large cohorts born after the Second World War. The two lines in Figure 14 will intersect around 2016, which is a point at which the “young group” balances the “old group”. After this point the gap between these two groups becomes wider. It could be hypothesized that the share of the elderly population will increase further beyond 2030 as a result of the retirement of cohorts born between 1970 and 1984, which were exceptionally large.

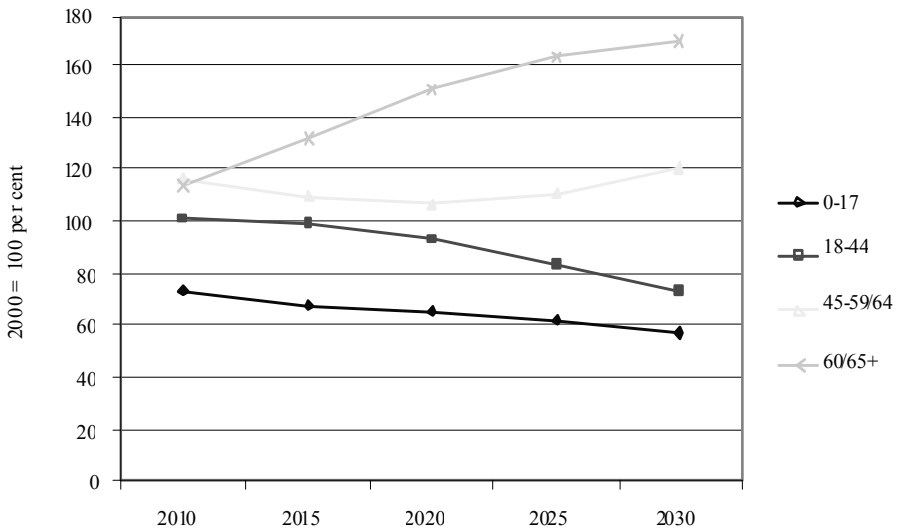
Figure 14. Projection of the share of young (0-17) and old (65 and more) age groups in the total population of Poland, 2007-2030



Source: GUS, 2004.

The general tendency in changes of the Poland's age-structure in the future is the steep decline of the size of the pre-working age (zero to seventeen) population as well as of the younger working age population (eighteen to forty-four) together with significant increase of the older working age group (forty-five to fifty-nine or sixty-four) and the post-working age population.

Figure 15. Changes in population age-structure, 2010-2030 (as a percentage of the specific age groups in 2000)



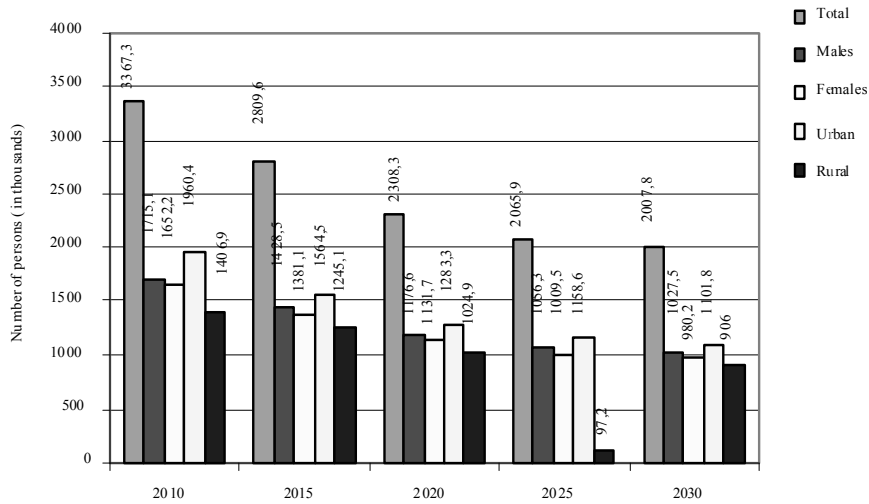
Source: GUS, 2004.

According to this projection, the size of the pre-working age population will decrease by 1.5 million persons of the working age population by approximately four million persons, and the post-working age population shall increase by three million by 2030. In addition, the decrease of the working age sub-population will be caused by an even stronger decline of the younger working age group (eighteen to forty-four) moderated by the slight increase of the number of persons in the older working ages.

Such a development is a result of the baby boom at the beginning of the 1980s. Moreover, it shows that in the next decades Poland will face the problem of an ageing of the labour force.

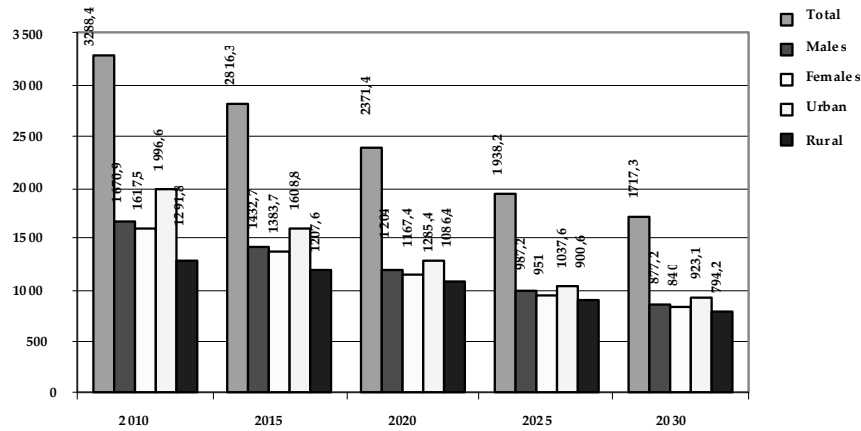
Projections concerning changes of the size of the population aged nineteen to twenty-four, important from the point of view of the higher education system are not optimistic (Figure 16).

Figure 16. Projection of population 19-24 by sex and place of residence 2010-2030 (in thousand)



Source: GUS, 2004.

Figure 17. Projection of population 25-29 by sex and place of residence (in thousand)



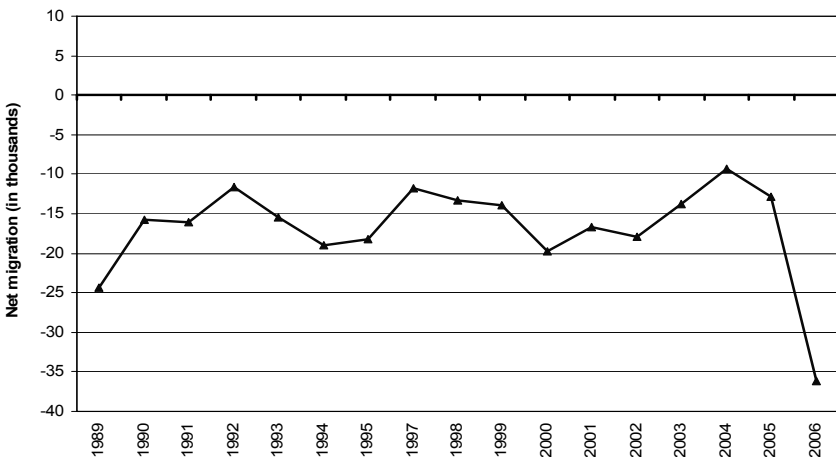
Source: GUS, 2004.

By 2030 the size of the cohort of individuals at this age will equal only approximately half of the size of such a cohort in 2005. Such negative changes will occur also in the adjacent age group of those aged twenty-five to twenty-nine.

1.5. Migration

The migration process since 1989 in Poland can be characterised as a constant outflow resulting in a negative value of the net migration throughout the whole analysed period. During this period the main factors influencing the emigration outflow were associated with the economic situation, unemployment and relative deprivation. Presented figures on the net migration do not give an accurate illustration of the scale of migration, due to an important characteristic of migration in Poland, which is the fact that most movements are short-term. Therefore, it is not possible to give a full picture of migration in Poland, the figure presented giving only an illustration of migration for permanent residence excluding short-term migrations.

Figure 18. Net migration (in thousand) in Poland, 1989-2006

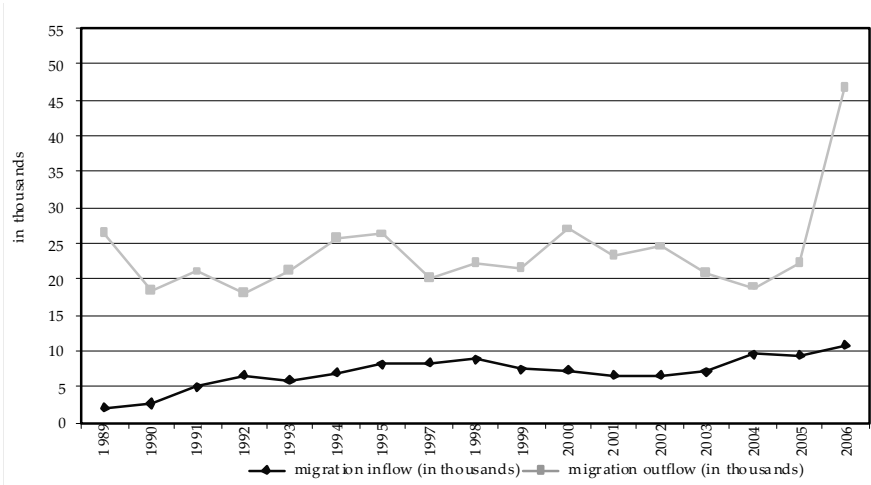


Source: GUS [various years].

Despite the lack of accurate information about short-term migration it can be concluded that the number of outward migration is substantially higher,

especially when taking into account the 2006 data. This is probably caused by an intensification of the outward migration after the opening of the labour markets of some EU countries.

Figure 19. Migration inflow and outflow (in thousand), Poland, 1989-2006



Source: GUS [various years].

Table A3 (in the Appendix) displays detailed information on migration inflows and outflows during the last decade. It has to be emphasized that, together with rather high, although fluctuating emigration, immigration to Poland increased in this period and in 2006 exceeded 10,000 immigrants for the first time. Apparently, Poland has become a receiving country.

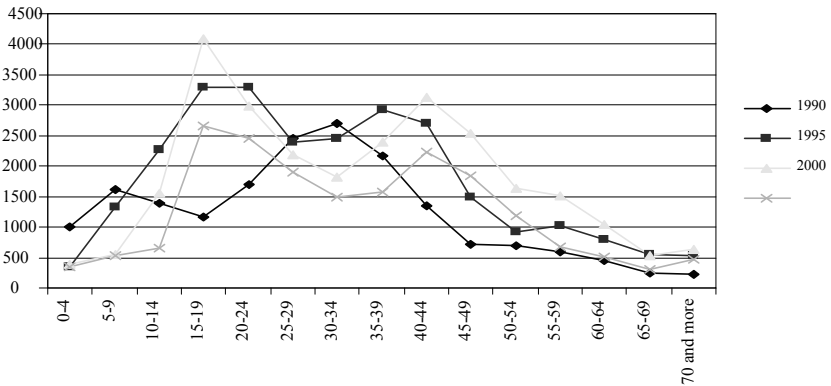
It is interesting that the predominant proportion of outflows comes from urban areas; however, the share of emigration from rural areas has been growing. Also immigration to urban areas is more intensive than to rural areas, a common phenomenon.

Figures 20 and 21 display changes in the age distribution of migrants. Between 1990 and 2005 a significant shift towards younger ages occurred in the distribution of emigrants from Poland: in 1990 individuals aged thirty to thirty-four dominated among them, while in 2005 the mode of distribution is located within the interval of twenty to thirty years. Apparently this is related

to EU developments and the opening of labour markets in some EU countries (where unemployment among young is very high).

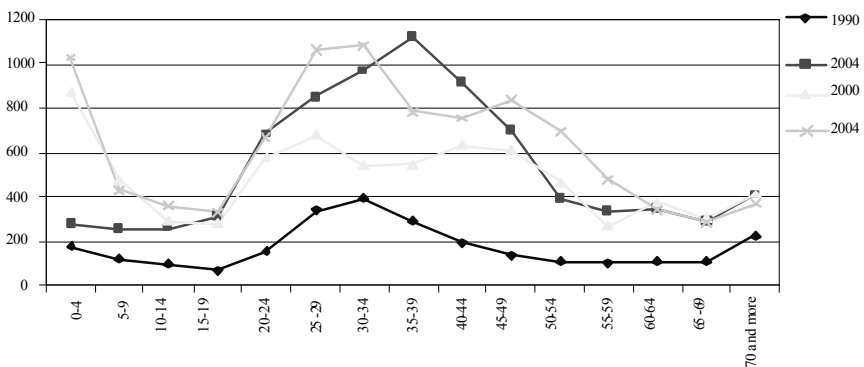
Immigration to Poland is also quite young. Immigrants are mainly persons aged thirty to forty, belonging to the “mobile” working age population. An increasing number of immigrants below the age of eighteen reflects an increase in the inflow of families.

Figure 20. Emigrants by age: 1990, 1995, 2000, 2004 (absolute numbers)



Source: Governmental Population Council, 2007.

Figure 21. Immigrants by age: 1990, 1995, 2000, 2004 (absolute numbers)



Source: Governmental Population Council, 2007.

Polish citizens emigrate mostly to other European countries (eighty-two per cent in 2005). Of those who migrated to European countries, sixty-seven per cent migrated to Germany, seventeen per cent to Great Britain and the remainder to other countries.

1.6. Main challenges of the demographic change

The main challenges resulting from the demographic changes in Poland after 1989 can be associated with declining rates of fertility, population ageing and increasing outgoing migration. However, it has to be noted that these three processes are interrelated and influence one another.

As already pointed out, the pace of the decline in fertility in Poland, as in other eastern European countries, has been very rapid and led in a short time to the phenomenon of so-called “lowest low” fertility, *i.e.*, a TFR below 1.3. Such low levels of fertility were caused by the reduction in the number of births (quantum effect) and the postponement of reproduction (tempo effect). As a result, the fertility decline leads to the rapid shrinking of the youngest age group (zero to seventeen) in relation to the whole population.

This in turn leads us to the second challenge, namely the population ageing. A relatively small number of young people will lead to higher dependency rates since a relatively small proportion of the working age population will have to support a large group of inactive individuals. This is, of course, not a problem yet, however, as the large cohorts born after the Second World War will successively be retiring this might cause serious disturbances to the pension system in Poland. This negative trend could be worsened by the third challenge, the outgoing migration from Poland.

The process of emigration intensified after Poland joined EU and after old member countries were successively opening their labour markets to the Polish workforce. The emigration flow from Poland mostly concerns young people who completed or even interrupted their education. Therefore, this might lead to the further decline of the share of the working age population of Poland. However, some sectors of the economy already experience a shortage in employees due to excess out migration from Poland.

With regard to migration it can be estimated that it has rather a short-term character but there are serious concerns that those migrants might become permanent residents of the host countries. This is caused by growing

assimilation of the migrants, by enrolment in educational systems, mixed marriages, or engagement on the labour market.

In summary, the main challenges of demographic change in Poland are not very different from the general trends in other European countries.

Decreasing fertility and increasing life expectancy bring about an acceleration of the ageing process, which may, of course, be perceived as a positive phenomenon due to growing longevity, but also causes pressure on the social and economic system.

First, the demographic ageing results in a kind of “distortion” of society with respect to generations of children, parents and grandparents. In the future we expect to have even fewer young people, more elderly people and even more very old persons (aged eighty and over). This will require new forms of inter-generational solidarity as well as stronger institutional support for the elderly.

This situation will be linked to a stronger pressure on public expenditures, on the pension system, health care system, and institutional care for the elderly. On the one hand, due to significant improvement of the health status of retired persons, new forms of “active ageing” should be searched for. On the other hand, the growing number of the “oldest-old” will increase the number of vulnerable people and will require a special care (taking into account shrinking family size and, consequently, potential support from younger generation).

The main impact the demographic change has on the labour market in Poland is the shrinking of the labour force and its ageing. The dependency ratio will dramatically increase after 2010 creating additional pressure on the financial sustainability of the pension system. Due to this fact, in 1999 a fundamental reform of the pension system was introduced; the old “pay-as-you-go” system was replaced by the new one based on notionally defined contributions.

Selected features which may characterize the Polish labour market are as follows:

- one of the lowest employment rates in Europe (especially of women – less than fifty per cent);

- one of the lowest actual retirement ages (on average fifty-nine years for men and fifty-six years for women, as compared to normative retirement age of sixty-five and sixty years, respectively).

In this context, demographic changes reflected in shrinking and ageing of working age population require the implementation of additional elements into employment and retirement policies, *e.g.*, increasing the normative retirement age, the limitation of access to early retirement schemes, supporting employment of the elderly, promoting active ageing which includes lifelong learning.

Simultaneously, it is obvious that the smaller size of young cohorts will not necessarily facilitate their access to the labour market. Due to the contemporary labour market requirements it is education and skills which are fundamental for stable employment. In this context the role of education and participation of individuals in lifelong learning will be even more crucial for their professional careers.

1.7. Factors influencing demographic developments.

The above-presented analysis clearly indicates that the most challenging demographic shifts in Poland are associated with declining fertility rates which underlies population ageing. Females not only postpone childbearing but also decrease the actual and desired number of children. Although, the desired number of children declared by respondents is most frequently two, there is a mismatch between the declared and actual number of children. As reported in the study “Job Instability and Family Trends” (2007) in which persons aged twenty-five to forty-four were interviewed, the most frequently declared number of children was two. However, these declarations are far above the actual number of children. For instance, the average number of children for couples with higher education was less than one. The recent postponement of fertility and reduction of the number of children is caused by a set of factors jointly described as the “Second Demographic Transition” (SDT). The concept of the SDT explains the reduction of the level of fertility, which occurred first in the 1960s in Western Europe, with changes in lifestyles and value system of individuals, more orientation towards individual careers, combined with changes in the roles of women, their involvement in social and economic life and especially their participation in

education system and growing economic activity. However, economic factors play a more important role in Poland than in Western European countries. In Poland, after the institutional change in 1989, the late childbearing and reduction in the number of births was a rational response to growing returns to human capital (increased investments in education), rising employment and career opportunities for women and rising economic uncertainty. In many studies led by the Institute of Statistics and Demography women stress that one of the main factors inhibiting reproduction is uncertainty associated with their career path after the childbearing. Most are afraid that they will be unable to return to their workplace or they will simply lose their jobs. Another factor is associated with high opportunity costs of childbearing. These costs are not only related to foregone wages but also to fast depreciation of human capital while women are out of the labour market.

From the perspective of these factors influencing reproductive behaviour of women it is crucial to allow, by institutional settings, to reduce the mentioned opportunity costs. This might be achieved by a reduction of the difficulties in combining motherhood with a professional career or with education.

Problems with reconciling family duties and work are indicated by both women and men (though, in the former case more frequently) as a very important determinant of their family decisions. According to the opinion expressed by the Governmental Population Council (2006) measures of family-related policies should be aimed at improving work-life balance first.

In Poland unemployment plays the most crucial role among economic factors reducing fertility (cf. Kocot-Górecka, 2004).

In this context higher education might have a positive impact on demographic behaviour. Table A4 in the appendix displays selected indicators of the labour market in Poland in recent years. From the data in the table we can conclude that employment opportunities are much higher for persons with higher education than for any other group. And even in the period of the very high unemployment the best educated group of population has had the lowest unemployment rate.

The decline in fertility since 1989 is assumed to have caused a major shift in the structure of Polish population: a shift towards a lower proportion of young individuals in the population and thus higher dependency ratios. This

situation might be also aggravated by increasing wave of migration to the old EU member states after the opening of labour markets.

Within the classic theory of migration, this wave of migration seems to be a natural adjustment to the inequalities in wages between the country of origin and country of destination. These inequalities are large enough to attract educated individuals to perform simple jobs in the country of destination. Therefore, the low wages and poor employment opportunities are the main push factors from the country of origin. From this perspective, the main problem is the migration of skilled workers and specialists. This outflow of educated individuals could cause major damage to the labour market in Poland.

A proper response to this challenge, however, is the improvement of economic conditions, a positive labour market development and, in general, a high economic growth, which has been the case of Poland in recent years.

2. Higher Education Developments

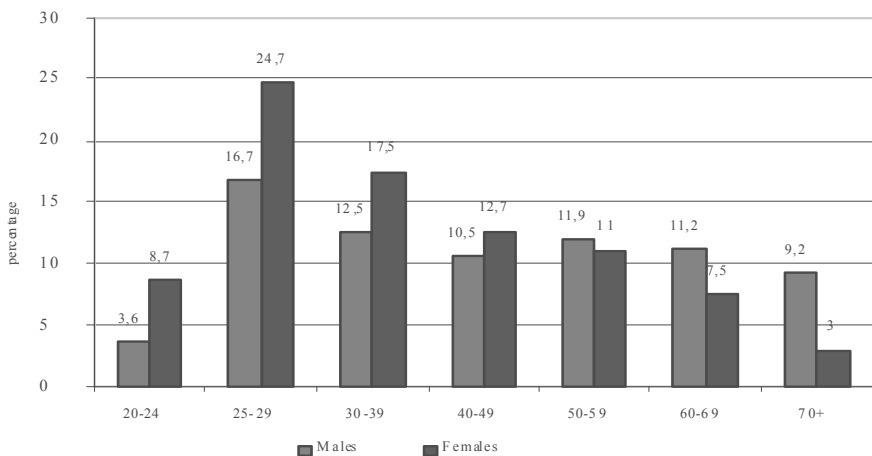
2.1. Participation in higher education

The educational aspirations of the Polish population increased significantly during the transformation of the economic and political system. 1990 was a turning point both for institutional changes and a shift in attitudes of individuals towards education, in particular concerning higher education. Table A5 in the appendix displays changes between 1988 and 2002 at the level of education of Poland's population according to national censuses. It is clear that the most dynamic growth occurred in the number of individuals with higher education; it concerns especially women and more specifically women from rural areas. Of course, one has to keep in mind that this rapid increase started from a very low level in 1988. However, it also brought about an increase of the proportion of women in the group of persons who attained a higher level of education. Similarly, though more modestly, an increase took place in post-secondary and secondary education, mainly at the cost of primary and basic vocational education.

The data presented in Figure 22 show how the proportions of adult persons attaining higher education differ among consecutive generations. The level of attainment is much higher for younger generations: the older the age

group the lower the proportion of persons with higher education, with the exception of males aged forty to forty-nine. In this age group the proportion of men with tertiary education is lower than in the next group. An explanation of this situation is the policy of the communist regime in the 1980s, when access to higher education was gradually restricted the number of students and graduates dropped by almost a half.

Figure 22. Population with higher education by sex and age, 2002 (as a percentage of population in a given group)



Source: GUS, 2005.

Another characteristic difference in education attainment is that women of the younger generations are better educated than men, while for individuals aged over fifty an opposite trend appears, and in the oldest group of persons aged seventy and over the proportion of males with higher education is three times higher than that of females. All these facts give evidence of intrinsic differences between younger and older generations in their lifestyles, attitudes towards education and work as well as in roles played by women in society. As has been mentioned earlier, these changes in individuals' life courses have an important impact on demographic behaviour which in turn influences many segments of economic and social spheres.

In Poland, in general, when we look at the rates of participation in education we see a highly visible tendency of increasing interest in higher levels of education at the cost of the lower ones (Table 4).

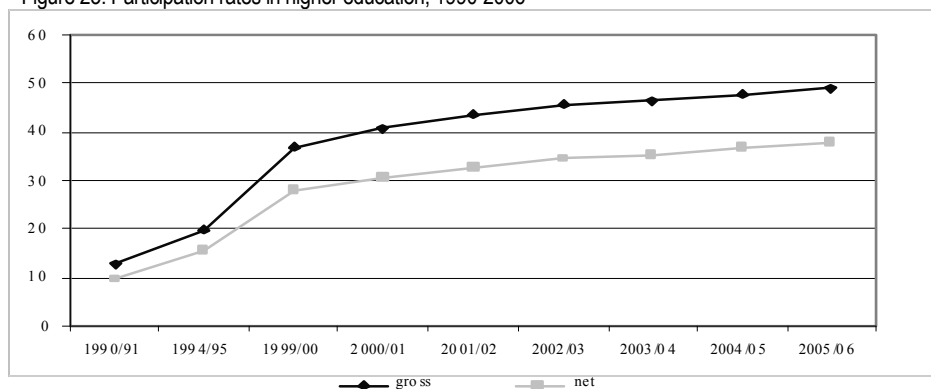
Table 4. Participation rates in education by level of education, 2000/01 – 2005/06

Year \ Level of education	Basic vocational		Secondary				Post-secondary		Higher	
			General		Vocational					
	gross	net	gross	net	gross	net	gross	net	gross	net
2000/01	20.0	19.5	34.1	33.5	36.0	31.0	5.2	4.4	40.7	30.6
2001/02	27.1	21.7	42.4	36.1	48.2	33.3	10.6	6.8	43.6	32.7
2002/03	21.0	15.7	44.8	37.8	49.9	33.6	12.1	7.0	45.6	34.5
2003/04	11.5	10.6	49.7	41.1	56.1	36.0	13.1	8.1	46.4	35.3
2004/05	14.2	12.6	52.0	42.3	54.1	35.2	14.4	8.8	47.8	36.8
2005/06	14.4	12.2	53.5	43.1	50.2	34.9	16.1	9.8	48.9	38.0

Source: GUS, 2006.

In particular, participation rates in higher education show a continuous upward tendency during the whole period starting at the “turning point” of 1990 (Figure 23). As the result, Poland belongs to the countries with a relatively high expectancy in higher education, higher than the average for the OECD countries: 3.2 years in Poland (3.8 for women) comparing to the OECD average of 2.4 (2.7 for women) years (*Education at a Glance*, OECD, 2007).

Figure 23. Participation rates in higher education, 1990-2006



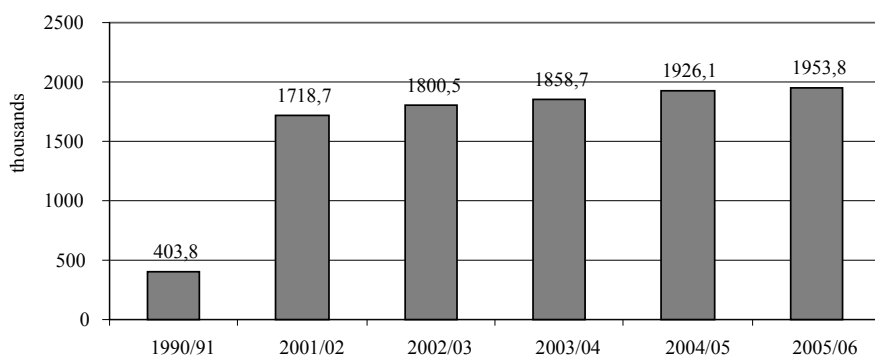
Source: GUS, 2006c.

The reasons for such dynamic growth of enrolment in higher education are manifold. *Inter alia*, at the beginning of the 1990s, there was an accumulated or postponed demand for higher education which could not be satisfied with the system transformation, new “windows of opportunity” for better educated people, or the labour market. The rapid growth of private higher education institutions reflects this development, too.

At present, the high participation in higher education is related to the modernization of country, labour market requirements, better job opportunities for better educated individuals and, last but not least, significant changes in the lifestyles of young generations.

The high participation in higher education combined with demographic processes, *i.e.*, the large size of consecutive cohorts of the age group nineteen to twenty-four resulted in the continuous growth of number of students (Figure 24), although the pace of growth is much slower in recent years than at the beginning of the period of changes in the higher education system in Poland. Now, it seems that the capacity of the system meets the demand for higher education studies and that the system is able to absorb all potential students.

Figure 24. Number of students in 1990/91 – 2005/06 (in thousand)



Source: GUS, 2006c.

During the period of the study the phenomenon of feminization of the participation in higher education can be observed: female students constitute now about fifty-seven per cent of the student population. Such a proportion is

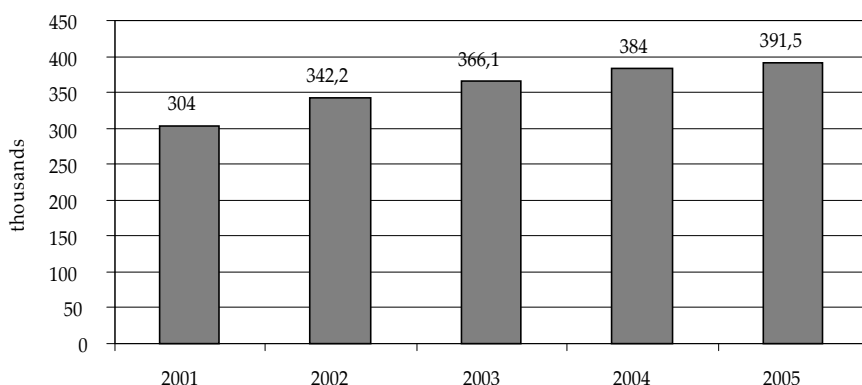
not the result of the demographic structure. On the contrary, in the age groups twenty to twenty-four and twenty-five to twenty-nine, the number of males is larger than females (this relation changes for older ages: forty-five years and more). The so-called female/male ratio in these age groups is stable over time and roughly equals to ninety-seven women per 100 men. This means that participation of women in tertiary education is even higher than the indicators presented above show.

As mentioned earlier the dynamics of growth of number of students slowed down recently. This is the case also for the number of entrants to higher education. Generally, in the period 2000/01 – 2005/06 an upward tendency can be observed (at a slower pace than in the 1990s), inhibited slightly in 2003/04.

On the other hand, however, in 2005 the number of entrants reached almost half a million (491,000) persons. According to OECD indicators, in 2004 Poland kept the fifth place in the ranking of the countries with the highest value of entry rates into tertiary education (seventy-one per cent in total, sixty-six per cent males, seventy-six per cent females) and is higher than the OECD averages (OECD, 2007).

Together with the growing size of the student population the number of graduates has been increasing continuously (Figure 25).

Figure 25. Number of graduates, 2001-2005 (in thousand)



Source: GUS, 206c.

According to OECD, Polish higher graduation rates (defined as the percentage of higher education graduates in the population at the typical age of graduation) are relatively high compared to other OECD countries. In 2004, the respective rate was 44.8 per cent while the OECD average amounted to 34.8 per cent. In 2000 these rates were 34.4 and 27.5 per cent for Poland and OECD, respectively (OECD, 2007).

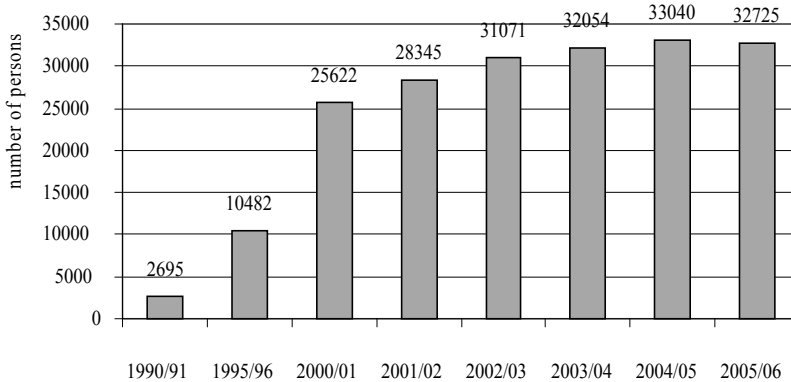
These indicators show an increasing importance of higher education and the growing role of individuals with higher education in Polish society.

The proportion of women among graduates has been constant over time (with slight fluctuations) and equaled around sixty-five per cent (for all types of studies combined) which is higher than the participation of women in higher education. Of course, this proportion depends strongly on the type of a university or field of education and varies from seventy-five per cent in case of institutions providing pedagogical studies to forty per cent in case of technical universities (not mentioning military or theological academies).

The efficiency of higher education can be measured using 'survival' rates, which inform what is the relation between number of graduates and entrants into a specific study programme in a given year. These rates for Poland are very high: during the period from 2001 to 2006 they reached about eighty per cent, which means that this percentage of all individuals who entered tertiary education completed their programme. Such a high efficiency of the university-level education in Poland may be explained by the situation on the labour market where job opportunities for persons with a higher education diploma are by far better than for other people.

The number of students in doctoral programmes has been increasing even more dramatically than at lower levels of higher education (Figure 26).

Figure 26. Number of students in doctoral programmes, 1990-2006 (absolute numbers)



Source: GUS, 206c.

As we can see, the number of doctoral students increased twelve times during the period from 1990 to 2006. The reasons for this steep growth are at least twofold: changes in regulations which prompted universities to launch such programmes and, simultaneously, an emerging demand for studies and degrees higher than a Master. That demand has been a direct result of a very competitive and demanding labour market confronted with large cohorts of individuals with university-level education; to such a labour market a university degree no longer was a special distinguishing feature from the point of view of employers. Thus, participation in doctoral programmes has become an element of building professional careers for higher education graduates entering labour markets. It has to be emphasized that only a part of students in doctoral programmes intend to continue their careers as researchers.

The participation of women in doctoral programmes is much lower than in Bachelor or Master programmes. Female students constitute less than half of the doctoral students.

2.2. Internationalization of higher education

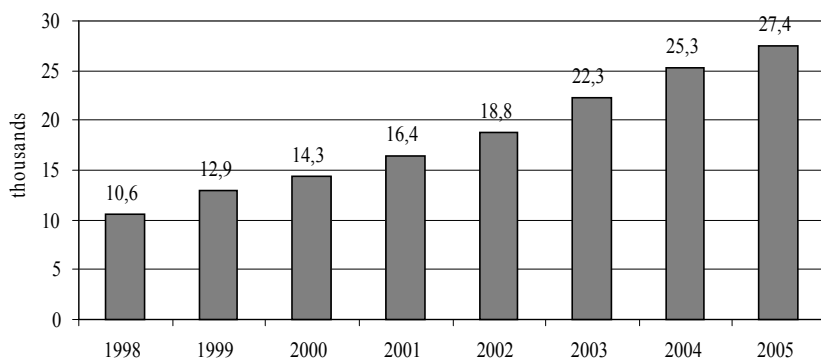
Internationalization of higher education in Poland, measured by student mobility, is very modest, and the availability of data on mobility is limited.

During the last decade the percentage of foreign students in Poland equaled around 0.5 per cent only, although since 1990 the number of foreign students has increased from 4,300 in 1990 to 10,100 in 2006.

The predominant group in the foreign student population is constituted by students from the countries of Central and Eastern Europe (including students of Polish origin). However, these proportions decreased in the last five years: from seventy-two per cent to sixty-seven per cent in case of those countries and from forty-eight per cent to thirty-seven per cent in case of students of Polish origin.

Language constraints and a lack of programmes in languages of international circulation, especially English, seem to be the most important factor for the low attractiveness of Polish higher education institutions to foreign students. On the other hand, the number of Polish students studying abroad has been growing fast and almost doubled between 2000 and 2005 (Figure 27). However, it needs to be emphasized that this increase in absolute terms means a slight growth of the percentage in total enrolment in Poland from one to 1.5 per cent.

Figure 27. Polish students in tertiary education (incl. doctoral programmes) in the EU and EEA countries (in thousand)



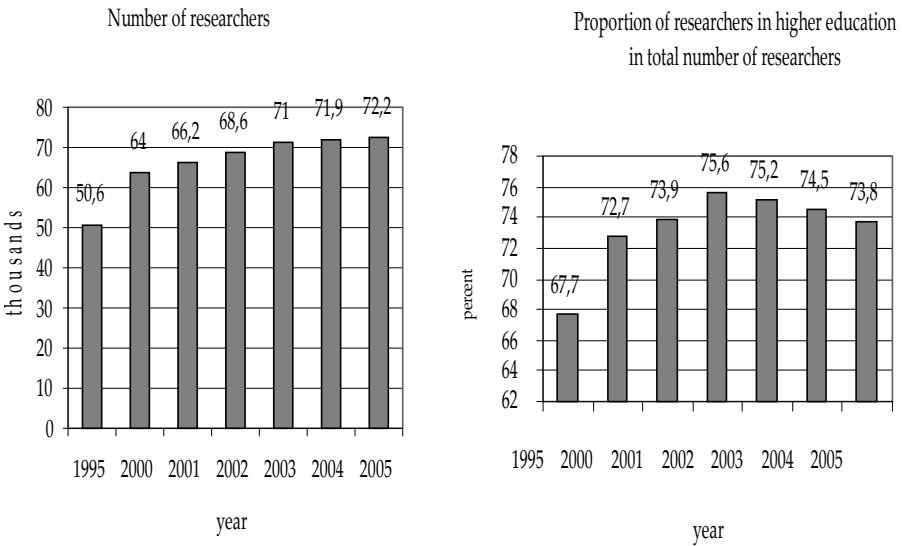
Source: EUROSTAT, 2007.

At the same time, it has to be remembered that together with the Bologna Process and the opening of educational markets as well as with an increasing affluence and standard of living of the Polish society this upward trend will be kept or accelerated in the years to come. These processes should be of serious concern for Polish universities in the years to come.

2.3. Research staff in higher education

In absolute terms number of researchers in higher education increased in the decade 1995-2005 by almost forty-three per cent although their proportion in the total population of researchers dropped slightly after a growth in the period from 1995 to 2002 (Figure 28). This occurred due to larger employment of researchers in business enterprise sector of R&D.

Figure 28. Researchers in higher education, 1995-2005



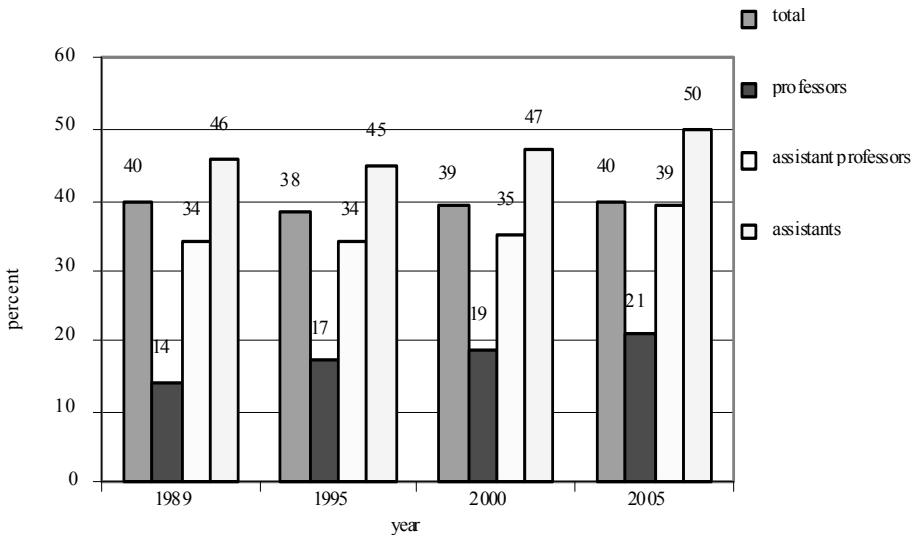
Source: GUS, 2006.

Data on the age structure of research staff in tertiary education in Poland are not available. It can only be noticed that very slight shifts in the structure by position (professors, assistant professors, assistants) of the higher education staff have occurred in recent years: the proportion of professors

and assistant professors increased at the cost of the proportion of assistants. This may suggest some process of ageing of the staff but it may also reflect new regulations in the higher education act which enable universities to limit contractual employment of young researchers without a doctoral degree.

The participation of women in university research was almost constant over the whole period under study; the proportion of female researchers equaled about forty per cent (Figure 29). Of course this proportion depends strongly on the position in the academic hierarchy – the higher the position the lower proportion of women.

Figure 29. Women researchers in higher education (as a percentage of a specific group), 1984-2005



Source: Siemieńska, 2006.

However, during the period after 1990 the percentage of women professors increased significantly and exceeded twenty per cent at the total level, though with substantial differences between universities: from eleven per cent at the technical universities to thirty-two per cent in medical schools.

3. Higher Education Policies in Response to Demographic Change

3.1. *Relevant national programmes*

A set of documents on strategies and policies has been produced by the Polish government in which references are made to higher education, employment and labour market developments, lifelong learning and other issues in the context of demographic shifts. In this regard the following three documents are of particular importance: Harmonogram uruchomienia programów krajowych na lata 2007-2013 [*National Cohesion Strategy 2007-2013*], Programy Operacyjne Kapitał Ludzki 2007-2013 [*Operational Programme "Human Capital" 2007-2013*] and the *Strategy for Development of Education 2007-2013*.

The National Cohesion Strategy (NCS) indicates the main goals to be achieved (under the general framework of the Lisbon Strategy) in order to support economic growth and employment as well as instruments indispensable for realization of the Strategy.

In the NCS one of the six specific strategy targets is "the improvement of social cohesion" which aims at the creation of more and better jobs. Investments in the highest quality tertiary education (in the field of advanced technologies) are considered as one of the most important tools for reaching this target. Besides, lifelong learning is mentioned as one of the actions to be undertaken to improve the quality of the work force for a more competitive and innovative economy.

According to the NCS investments in human capital should be addressed mainly to two groups of the population: the young, in order to facilitate their access to education, and the older workers, in order to increase their skills and employability. This kind of actions should be closely related to an active labour market policy, flexibility of this market, increasing economic activity and employment.

The analysis underlying these strategic goals and measures defined to achieve them has been elaborated from the perspective of the labour market and economic growth, and demographic factors are rather marginal here. In the SWOT analysis, however, the demographic situation of Poland was taken into account though in a very general way. A relatively young age

structure was identified among “strengths” while population ageing was indicated as a “threat” for development of human capital and social resources.

Similarly, higher education is taken into account in a limited way in the SWOT analysis in the areas of “human capital” and “competitiveness of enterprises” (increasing educational aspirations and participation in higher education, growing number of employees with academic degrees in the R&D sector, low participation in continuing education).

More attention to the interrelationship between demographics, labour market developments and higher education is given in the second document: Operational Programme “Human Capital”. *Inter alia*, strategic goals of this programme are:

- an increase in economic activity and employability of unemployed and inactive persons;
- the diminishing of areas of social exclusion;
- the improvement of adaptability of employees and enterprises to a changing economic environment;
- an increase in access to the education system at all levels, increasing the quality of education together with a strengthening of its links to the requirements of a knowledge-based economy;
- an increment of capabilities of public administration in formulating relevant policies;
- the growth of territorial cohesion.

In both cases two weaknesses can be identified: low participation in continuing education and insufficient links between R&D and the economy.

In reaction to these weaknesses several various activities should be undertaken, of which the most important (from the perspective of issues dealt with in this paper) are: (i) an increase in the proportion of persons aged twenty-five to sixty-four participating in lifelong learning (from 4.7 per cent to ten per cent in 2013); and, (ii) increase of the proportion of graduates of higher education in mathematics, life sciences and technological sciences (from 14.7 to twenty-two per cent in 2013).

One of the priorities in the Programme “Human Capital” is entitled “Higher education and R&D” under which attention is given to the role of universities in the development of the knowledge-based economy.

According to this document higher education and its attractiveness in the fields of hard and life sciences, of technical sciences as well as the modernization of higher education programmes towards meeting the requirements of a knowledge-based economy, including distance and e-learning, should be the most important actions. To improve the employability of higher education graduates the cooperation of universities and research institutions with employers and corporations should be strengthened. In addition, schemes of internships for students should be extended. Lastly, more investments should be made in the development, growth and improvement of research and academic staff.

In the socio-economic diagnosis underlying the formulated strategy in human capital development, the demographic changes in Poland are an endogenous factor to the labour market. Also, recommendations addressed to the higher education system are related to the employability of graduates, on the one hand, and to supporting growth of competitiveness and innovativeness of enterprises and the Polish economy, on the other. In this strategy, the labour market plays the role of an intermediate factor between demographics and higher education.

The “Strategy for Development of Education, 2007-2013” is a supplementary document to the Operational Programme “Human Capital Development”. Higher education has been considered there as one of equally important elements of the education system in Poland. Strategic goals for this segment of the education system as well as tools to be applied in order to reach these goals have been formulated in rather general terms. Future demographic processes and, in general, demographic change, have been ignored in the analysis carried out in the document.

In the above presented strategies related to higher education, labour market and demographics, lifelong learning has been mentioned frequently as a remedy to problems of the labour market resulting from demographic change. In this context, it seems obvious that the lifelong learning developments in Poland deserve a few comments.

Different types of indicators prove that Poland is among the countries with the lowest participation of adults aged twenty-five to sixty-four in education and training in Europe. For example, in 2005 the participation rate of persons aged twenty-five to sixty in adult learning equaled to around 5.5 per cent (as compared to the EU average of around ten per cent). This rate has been strongly dependent on the educational attainment of trainees: the higher level of education the higher participation rate in job-related education and training. When we take into account the economically active population in this age group, participation is much higher (the rate is thirty-five per cent) though still lower than the EU average (forty-two per cent).

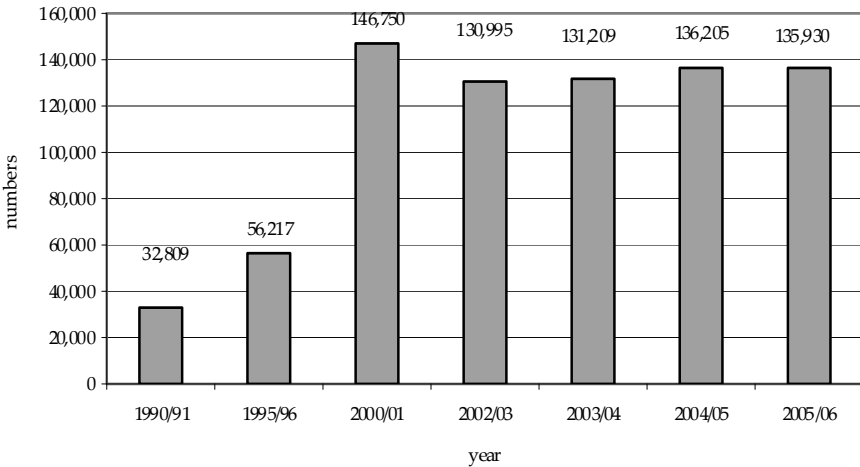
According to the Adult Educational Activity Survey 2003 the participation in continuing education is significantly differentiated by the age of participants.

The highest participation is observed in the youngest age group (less than twenty-nine years) in which formal education prevails. In the middle age groups (thirty to forty), non-formal job-related training is the most frequent, while persons aged more than forty years return to formal education. Such a situation reflects a clearly changing demand for various forms of lifelong learning together with a transition to successive stages of the individuals' life course. Additionally, it shows an educational deficit of generations born before 1970. These generations should be of special interest to the educational system (especially, lifelong learning) in order to keep them in the labour market as long as possible in the future.

Higher education institutions play a very specific role in the lifelong learning since training programmes offered are addressed first of all to the best educated individuals. These programmes respond to the requirements of the most demanding segments of the labour market.

In Polish higher education institutions the most popular form of lifelong learning activities are the so-called "post-diploma studies" which are two-four semester training/education programmes aimed at updating of knowledge and increasing of professional qualifications of the participants. Since 2000, the total number of students enrolled in those studies is between 13,500 and 14,700 students.

Figure 30. Number of participants in post-diploma studies, 1990/91 – 2005/06, absolute numbers



Source: Szkoły wyższe..., *op. cit.*

Figure 30 shows the very high dynamics of participation in the post-diploma studies in the analyzed period. The number of participants rose more than four-fold between 1990 and 2006, although at a slower pace in recent years, which is evidence of a “saturation” of this segment of the educational market.

Structural and technological changes in contemporary economies also influence shifts of the modern labour market which may be characterized with the following features of high dynamics and instability; qualitative rather than quantitative adjustments; and, decreasing demand for low-skill jobs.

In this context, the increase of quality of the labour force supply and investments in human capital are the best response to technological challenges and changing labour market requirements. According to the Lisbon Strategy effective systems of lifelong learning are considered as one of the basic tools for the improvement of the quality of human resources and the growth of employment.

Also, strategic analyses indicate the development of lifelong learning as a precondition for building a knowledge-based society and a competitive economy. The increase of accessibility to the system and of the quality of

continuing education are part of the priorities in this area of the national strategies.

3.2. Institutional policies

In order to obtain evidence and information of how Polish higher education institutions deal with demographic challenges, rectors of several leading Polish public and private higher education institutions were consulted. The following institutions provided information: the Economic University of Poznań, the Leon Kozminski Academy of Management, the Technical University of Wrocław, the University of Wrocław, the Warsaw School of Economics (SGH), and the Warsaw University of Life Sciences (SGGW). The following issues were addressed:

- a strategy in response to the shrinking size of the population aged twenty to twenty-five together with population ageing, and especially the ageing of the working age population;
- the impact of international migration on institutions;
- a response to labour market developments and new labour market requirements (especially, the demand for the improvement of professional qualifications of older, economically active persons); and,
- the role of lifelong learning.

On the basis of this small survey we can conclude that the demographic challenges as identified by the leaders of Polish universities relate almost exclusively to the shrinking size of the “student supply”, *i.e.*, the number of persons aged nineteen to twenty-four which, in turn, may have negative financial consequences for the institution. In this context, the strategies and policies are oriented, first of all, towards a strengthening of the position of a given institution at the educational market through attracting the highest possible proportion of candidates from the limited stock of persons with secondary education.

The development of attractive programmes combined with the creation of new ones and, in general, a rich educational offer are the obvious tools for increasing the competitiveness in policies of the analyzed universities. Also, a

high quality of studies (including standards of education, infrastructure, etc.) is indicated as a very important factor in achieving a competitive position. Another element is the development of programmes in English, in order to attract foreign students, on the one hand, and to better prepare their own graduates for international environments, on the other.

Building a strong and distinct brand of an institution, recognizable nationally and internationally through, for instance, international accreditation (*e.g.*, EQUIS) is included in the strategy of one of the institutions under study.

Reducing the number of students, and focusing on Master and doctoral programmes together with diminishing first level (Bachelor/Licenciate) studies is another interesting strategy. In this case, the university aims at reaching the position of a strong research university and makes a shift towards intensification of R&D activities.

Growing international mobility is perceived both as a threat and as an opportunity for Polish higher education institutions. On the one hand, globalization and a growing intensity of migration flows provide the opportunity to recruit foreign students and force universities to be more open and internationally oriented. On the other hand, the same processes and international competition between universities “pull” Polish students abroad.

The main response to these processes in the policies of the analyzed institutions is their internationalization meant both as an enhancement of cooperation with partner universities abroad (including exchanges of students and staff, special offers for visiting professors, etc.) and as intensifying the recruitment of students from countries outside the EU (in particular Ukraine, Belarus, as well as countries in Asia and Africa). To achieve the latter goal special marketing activities are undertaken.

It is worth emphasizing that none of the institutions analyzed has among its strategic goals that of becoming an important player on the EU educational market in the future.

Furthermore, only one of the universities participating in this survey plans to participate in building prospects of good employment in Poland to keep graduates on the Polish labour market through close cooperation with enterprises, a system of internships and placements for students, etc.

No special actions were undertaken by the described institutions in response to the ageing labour force.

However, a reaction to this problem may be contained in the institutional policies related to lifelong learning.

As already pointed out, the predominant form of continuing education offered by the Polish higher education institutions are post-diploma studies. All of the investigated universities are running tens of various types of post-diploma programmes; some of them are custom-made programmes for the institutional customer, others address individuals who want to update their knowledge and increase professional qualifications in a specific area. In this context Executive/MBA programmes at schools of economics and management play a special role, usually in cooperation with foreign partners.

All universities have special units for continuing education which, in addition to post-diploma studies, run many other short training courses, often funded by EU agencies.

Needless to say that these studies and courses are a good source of income for universities.

It should be emphasized that in this respect the competition among Polish universities has also been increasing. Although, in the years to come one can expect a stable demand for this type of lifelong learning, due to large cohorts of university graduates in the last decade.

A new element in the policies related to the lifelong learning appeared recently: part-time doctoral studies which are a reaction both to decreasing interests in bachelor and master part-time programmes and, simultaneously, to an increasing demand for third-level higher education. This phenomenon has been caused by high requirements on the labour market.

In conclusion, it seems that, generally speaking, Polish universities apply passive policies which reflect more an adjustment to the current demographic situation than an anticipation of changes and challenges to come. Obviously, combining the two approaches would be an optimal solution.

4. Conclusions

From the examination of the future demographic trends it can be confirmed that processes such as shrinking cohorts of potential students, population ageing, a declining labour force supply, the ageing of the labour force and increasing international migration will have a significant influence on higher education developments in Poland.

The first and the last of the above listed processes will bring about growing competition between higher education institutions both in local and international environments. Due the foreseeable developments on the labour markets, employability of graduates may become one of the determinants of the attractiveness of a university. Simultaneously, the smaller size of young cohorts entering the labour market will not facilitate access to it.

Generally, labour markets require more and better educated and skilled employees. Another feature of the contemporary labour market developments is an increasing flexibility which may require special abilities of rapid adaptation to the new requirements of both employers and employees. This creates a challenge for higher education institutions but also a great opportunity since these developments will open a large space for diverse forms of continuing education as well as for new forms of tertiary education at higher levels (*e.g.*, professional doctorates). Continuing education is also a good response to an ageing work force and longer sojourn of individuals in employment, as well as to more competition within the labour market caused by an intensification of immigration and increasing number of foreign workers (due to a shrinking working age population).

Another opportunity for higher education is to adapt to new lifestyles in the context of 'active ageing' which could be a response to the growing proportion of the elderly. In the concept of active ageing the following five elements are taken into account: involvement in paid work, lifelong learning, voluntary work, leisure and health. Lifelong learning is especially recommended as a tool to sustain active ageing. Higher education institutions should be ready to satisfy the increased demand for this kind of training.

This demographic change creates a challenge for the higher education system and institutions due to increasing competition on local and international educational markets. On the other hand, it opens a window of

opportunity due to the rapidly growing demand for various new forms of continuing education.

Institutional policies take into account demographic changes – first of all, a decreasing number of persons at the age of studying and indirectly, an ageing population as well as intensive international migration processes.

Generally, the policies contain the following commonly applied components:

- the development of attractive and diverse programmes of studies;
- the assurance of high quality of education;
- internationalization;
- the development of post-diploma studies and other forms of continuing education.

Such a response to the demographic shifts in Poland seems to be satisfactory in the short-term. However, demographic changes in Poland are highly dynamic and far-reaching so that in order to meet the challenges in the long-term, higher education institutions should be ready to find new alternative ways of development in the future.

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References

- EUROSTAT. 2007. *Population and Social Condition Indicators*.
<http://epp.eurostat.ec.europa.eu> (Accessed 19 March 2008)
- FONDAZIONE “GIACOMO BRODOLINI”. (ed.) 2007. *Job Instability and Family Trends. Research Report 2007*. Roma. (Unpublished)

- KOCOT-GÓRECKA, K. 2004. *Zmiany płodności a aktywność zawodowa kobiet w Polsce w okresie transformacji* [Fertility Changes and Labour Force Participation of Women in Poland with a Focus on the Transformation Period]. Warsaw: Institute of Statistics and Demography. (In Polish)
- ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD). 2006. *Education at a Glance 2007. OECD Indicators*. Paris: OECD.
- POLAND. GŁÓWNY URZĘD STATYSTYCZNY (GUS). *Demographic Yearbooks* [Various Years]. Warsaw: GUS
- , *Labour Force Survey*. [Various Years]. Warsaw: GUS
- , 2004. *Progniza demograficzna dla Polski do r. 2030* [Demographic Projection of Poland 2002-2030]. Warsaw: GUSO. (In Polish)
- , 2006a. *Nauka i technika* [Science and Technology]. Warsaw: GUS. (In Polish)
- , 2006b. *Oświata i wychowanie* [Education and Schooling System]. Warsaw: GUS. (In Polish)
- , 2006c. *Szkoły wyższe i ich finanse*. [Higher Education Institutions and Their Finance]. Warsaw: GUS. (In Polish)
- , 2007. *Sytuacja demograficzna Polski. Synteza Raportu 2005-2006* [Demographic Situation of Poland. Report 2005-2006]. Warsaw. (In Polish)
http://www.stat.gov.pl/cps/rde/xber/gus/POZ_sytuacja_demograf_polski_synteza_raportu_2005_2006.pdf (Accessed 19 March 2008)
- POLAND. MINISTERSTWO EDUKACJI NARODOWEJ I SPORTU. 2007. *Strategia rozwoju edukacji 2007-2013* [Strategy for Development of Education 2007-2013]. (In Polish)
<http://www.cie.gov.pl/www/serce.nsf/0/4ACE2A55E0D98D2BC1257068004FBA99?Open> (Accessed 19 March 2008)
- POLAND. MINISTERSTWO ROZWOJU REGIONALNEGO. 2006. *Narodowa Strategia Spójności 2007-2013* [National Cohesion Strategy]. (In Polish)
http://www.mrr.gov.pl/NR/rdonlyres/636981D8-C854-43C3-B269-8BDAF7D572D0/20756/konsultacje_NSS_2306.pdf (Accessed 19 March 2008)
- , 2007. *Program Operacyjny “Kapitał Ludzki” 2007-2013* [Operational Programme “Human Capital” 2007-2013]. (In Polish)
<http://www.mrr.gov.pl/ProgramyOperacyjne+2007-2013/Kapitał+Ludzki/> (Accessed 19 March 2008)
- SIEMIENSKA, R. 2006. *Krajowy system monitorowania równego traktowania kobiet i mężczyzn. Edukacja* [National System for Monitoring of Equal Status of Men and Women. Education]. Warszawa: Wydawnictwo Naukowe Scholar. (In Polish)

- SOBOTKA, T. 2004. *Postponement of Childbearing and Low Fertility in Europe*. Amsterdam: Dutch University Press.
- VAN DE KAA, D. J. 1998. *Postmodern Fertility Preferences: From Changing Value Orientation to New Behavior*. Canberra: The Australian National University. (Working Papers in Demography, 74)

Appendix

Table A1. Mean order of birth by mother's level of education and place of residence.

	1989	1991	1993	1995	1997	1999	2001	2003	2004
Total									
Total	2.13	2.13	2.18	2.13	2.04	1.97	1.9	1.8	1.8
Higher	1.85	1.83	1.82	1.75	1.7	1.63	1.6	1.5	1.5
Secondary	1.9	1.91	1.94	2.05	1.98	1.93	1.9	1.7	1.7
Basic Vocational	2.14	2.15	2.23	2.21	2.15	2.12	2.1	2.1	2.1
Primary	2.72	2.7	2.75	2.67	2.56	2.5	2.4	2.4	2.3
Urban									
Total	1.95	1.96	2.01	1.95	1.86	1.8	1.8	1.7	1.7
Higher	1.81	1.8	1.78	1.71	1.66	1.59	1.5	1.5	1.5
Secondary	1.82	1.83	1.85	1.92	1.82	1.78	1.8	1.6	1.6
Basic Vocational	2.03	2.04	2.13	2.09	2	1.97	2	2	2.0
Primary	2.35	2.33	2.42	2.34	2.24	2.17	2.1	2.1	2.1
Rural									
Total	2.34	2.33	2.37	2.33	2.25	2.18	2.1	2	2.0
Higher	2.02	2	1.96	1.92	1.85	1.78	1.7	1.6	1.6
Secondary	2.03	2.04	2.08	2.2	2.14	2.08	2.1	1.8	1.8
Basic Vocational	2.23	2.24	2.31	2.3	2.26	2.24	2.3	2.2	2.2
Primary	2.96	2.95	3	2.93	2.81	2.77	2.7	2.6	2.5

Source: GUS, Demographic Yearbook (various years).

Table A2. Age-specific death rates in 2005 as a percentage of death rates in 1990

Age	Age-specific rates 2005
	1990=100
0	33.20
1-4	45.90
5-9	58.84
10-14	59.19
15-19	68.28
20-24	66.72
25-29	66.10
30-34	62.12
35-39	68.60
40-44	73.11
45-49	80.67
50-54	81.16
55-59	78.15
60-64	75.41
65-69	74.55
70-74	74.68
75-79	71.84
80-84	74.08
85 and more	91.01

Source: GUS, Demographic Yearbook (various years).

Table A3. International migration, 1995-2005 (in thousand)

Year	Total			Urban			Rural		
	Immigration	Emigration	Net migration	Immigration	Emigration	Net migration	Immigration	Emigration	Net migration
1995	8.1	26.3	-18.2	6.3	22.0	-15.7	1.8	4.3	-2.5
1996	8.2	21.3	-13.1	6.1	18.1	-12.0	2.1	3.2	-1.1
1997	8.4	20.2	-11.8	6.2	16.9	-10.7	2.2	3.3	-1.1
1998	8.9	22.2	-13.3	6.5	19.0	-12.5	2.4	3.2	-0.8
1999	7.5	21.5	-14.0	5.5	18.2	-12.7	2.0	3.3	-1.3
2000	7.3	27.0	-19.7	5.1	21.5	-16.4	2.2	5.5	-3.3
2001	6.6	23.3	-16.7	4.7	18.1	-13.4	1.9	5.2	-3.3
2002	6.6	24.5	-17.9	4.6	18.9	-14.3	2.0	5.5	-3.5
2003	7.0	20.8	-13.8	4.9	15.6	-10.7	2.1	5.2	-3.1
2004	9.5	18.8	-9.3	6.7	13.9	-7.2	2.8	5.0	-2.2
2005	9.4	22.2	-12.8	6.6	17.1	-10.5	2.7	5.2	-2.5

Source: GUS, Demographic Yearbook (various years).

Table A4. Labour market indicators by level of education, 1996-2006

Indicators	1996	2000	2001	2002	2005	2006
Economic activity rates						
Higher	80.9	80.4	81.9	81.4	80.3	79.2
Post-secondary	-	-	-	75.3	-	71.3
Secondary vocational	74.2 ^{a)}	72.8 ^{a)}	71.5 ^{a)}	57.1	68.0 ^{a)}	66.5
Secondary general	49.6	49.8	47.8	37.0	46.3	45.6
Basic vocational	75.8	72.4	70.9	52.3	68.1	65.9
Primary and lower	32.2	26.9	25.7	18.1	22.4 ^{b)}	20.8 ^{b)}
Employment rates						
Higher	78.6	76.6	76.6	75.8	75.5	74.6
Post-secondary	-	-	-	64.0	-	63.2
Secondary vocational	66.7 ^{a)}	62.9 ^{a)}	60.0 ^{a)}	57.1	58.1 ^{a)}	59.3
Secondary general	43.1	40.0	36.9	37.0	36.6	38.2
Basic vocational	65.1	58.4	55.0	52.0	54.1	56.4
Primary and lower	28.0	21.4	19.9	18.1	16.8 ^{b)}	16.9 ^{b)}
Unemployment rates						
Higher	2.9	4.8	6.4	6.9	7.3	5.8
Post-secondary	-	-	-	15.1	-	11.3
Secondary vocational	10.1 ^{a)}	13.6 ^{a)}	16.1 ^{a)}	16.8	14.5 ^{a)}	10.9
Secondary general	13.1	19.6	22.9	24.9	20.9	16.1
Basic vocational	14.1	19.2	22.4	26.3	19.7	14.5
Primary and lower	12.9	20.6	22.6	29.4	25.9 ^{b)}	18.8 ^{b)}

Source: GUS, Labour Force Survey (various years).

Table A5. Population at age 15 years and over by sex and education level in 1988 and 2002 (data of the National Censuses)

Education level		Total			Urban areas			Rural areas		
		total	males	females	total	males	females	total	males	females
total	1988	28,269,112	13,554,038	14,715,074	17,481,591	8,210,956	9,270,635	10,787,521	5,434,082	5,444,439
	2002	31,288,428	14,962,106	16,326,322	19,776,134	9,269,818	10,506,316	11,512,294	5,692,288	5,820,006
higher	1988	1,838,360	975,015	863,345	1,640,786	875,077	765,709	197,574	99,938	97,636
	2002	3,203,566	1,448,060	1,755,506	2,704,760	1,245,400	1,459,360	498,806	202,660	296,146
post-secondary	1988	468,723	96,212	372,511	356,608	75,395	281,213	112,115	20,817	91,298
	2002	1,023,984	247,977	775,917	796,299	195,676	600,623	227,595	52,301	175,294
secondary total	1988	6,510,955	2,697,483	3,813,472	5,207,789	2,160,573	3,047,216	1,303,166	536,910	766,256
	2002	9,184,496	4,042,012	5,142,484	6,831,687	3,018,042	3,813,645	2,352,809	1,023,970	1,328,839
vocational	1988	4,868,440	2,286,008	2,582,432	3,816,319	1,806,897	2,009,422	1,052,121	479,111	573,010
	2002	6,382,471	3,201,517	3,180,954	4,545,226	2,318,359	2,226,867	1,837,245	883,158	954,087
general	1988	1,642,410	411,433	1,230,977	1,391,368	353,635	1,037,733	251,042	57,798	193,244
	2002	2,802,025	840,495	1,961,530	2,286,461	699,683	1,586,778	515,564	140,812	374,752
basic vocational	1988	6,665,843	4,274,256	2,391,587	4,060,113	2,577,305	1,482,808	2,605,730	1,696,951	908,779
	2002	7,539,786	4,678,914	2,860,872	4,174,550	2,566,294	1,608,256	3,365,236	2,112,620	1,252,616
primary complete	1988	10,961,500	4,859,324	6,102,176	5,652,310	2,337,253	3,315,057	5,309,190	2,522,071	2,787,119
	2002	8,808,487	3,922,279	4,886,208	4,397,862	1,864,479	2,533,383	4,410,625	2,057,800	2,353,825
others	1988	1,823,731	651,748	1,171,983	563,985	185,353	378,632	1,259,746	466,395	793,351
	2002	15,228,199	622,864	905,335	870,976	379,927	491,049	657,223	242,937	414,286
1988 = 100										
total		110.7	110.4	110.9	113.1	112.9	113.3	106.7	104.8	106.9
	higher	174.3	148.5	203.3	164.8	142.3	190.6	252.5	202.8	303.3
post-secondary		218.5	257.7	223.3	223.3	259.5	213.6	251.2	251.2	192.0
	secondary total	141.1	149.8	134.9	131.2	139.7	125.2	180.5	190.7	173.4
vocational		131.1	140.0	123.2	179.0	128.3	1108.8	174.6	184.3	166.5

Education level	Total				Urban areas				Rural areas			
	males		females		males		females		males		females	
	total		total		total		total		total		total	
general	170.6	204.3	159.3	164.3	197.9	152.9	205.4	193.9	243.6	137.8	84.4	52.2
basic vocational	113.1	109.5	119.6	99.6	108.5	129.1	124.5	137.8	124.5	137.8	84.4	52.2
primary complete	80.4	80.7	80.1	77.8	79.8	76.4	83.1	81.6	83.1	81.6	84.4	52.2
others	83.8	95.6	77.2	154.4	205.0	129.7	52.2	52.1	52.2	52.1	52.2	52.2
In percentage												
total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
higher	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
post-secondary	6.5	7.2	5.9	9.4	10.7	8.3	1.8	1.8	1.8	1.8	1.8	1.8
secondary total	10.2	9.7	10.8	13.7	13.4	13.9	4.3	3.6	4.3	3.6	5.1	1.7
vocational	1.7	0.7	2.5	2.0	0.9	3.0	1.0	0.4	1.0	0.4	1.7	1.7
general	3.3	1.7	4.8	4.0	2.1	5.7	2.0	0.9	2.0	0.9	3.0	3.0
basic vocational	23.0	19.9	25.9	29.8	26.3	32.9	12.1	9.9	12.1	9.9	14.1	14.1
primary complete	29.4	27.0	31.5	34.5	32.6	36.3	20.4	18.0	20.4	18.0	22.8	22.8
others	17.2	16.9	17.5	21.8	22.0	21.7	9.8	8.8	9.8	8.8	10.5	10.5
general	20.4	21.4	19.5	23.0	25.0	21.2	16.0	15.5	16.0	15.5	16.4	16.4
basic vocational	5.8	3.0	8.4	8.0	4.3	11.2	2.3	1.1	2.3	1.1	3.5	3.5
primary complete	9.0	5.6	12.0	11.6	7.5	15.1	4.5	2.5	4.5	2.5	6.4	6.4
others	23.6	31.5	16.3	23.2	31.4	16.0	24.2	31.2	24.2	31.2	16.7	16.7
general	24.1	31.3	17.5	21.1	27.7	15.3	29.2	37.1	29.2	37.1	21.5	21.5
basic vocational	38.8	35.9	41.5	32.3	28.5	35.8	49.2	46.4	49.2	46.4	51.2	51.2
primary complete	28.2	26.2	29.9	22.2	20.1	24.1	38.3	36.2	38.3	36.2	40.4	40.4
others	6.5	4.8	8.0	3.2	2.3	4.1	11.7	8.6	11.7	8.6	14.6	14.6
total	4.9	4.2	5.5	4.4	4.1	4.7	5.7	4.3	5.7	4.3	7.1	7.1

Source: GUS, Demographic Yearbook, 2005.

Demographic Decline and Increasing Demand for Higher Education in Romania: Challenges for Policy Actions

Christina SUCIU, Monica ROMAN and Vasile GHEȚĂU

Introduction

The political, economic and social transformations Romania experienced since the beginning of the 1990s have resulted in abrupt shifts in demographic trends, whose consequences for marriage, fertility, mortality and migration are highly significant. The result of these changes is a new demographic landscape which contrasts the demographic situation two decades ago as well as the main population trends in some other European countries. Declines in output, employment and trade ensued, accompanied by the emergence and rise in unemployment and inflation, as well as strong deterioration of real wages, social entitlements and services, have considerably altered the entire demographic construction. A decrease in fertility levels, recrudescence of mortality and the explosion of external migration are the most visible changes. The rapid and important decline in birth rates during the first half of the 1990s and the preservation of a low level during the following years is now visible in the dimension of the school-age population, and the entire national education system will be directly and deeply affected during the coming years and decades.

The following text will provide:

- A review of the main demographic changes during the transition period, the present situation and projected future developments, with reference to the imminent shock the demographic factors will generate on the Romanian education system and related areas;
- A description of the national education system focusing on higher education; the current state of both the demand (the students) and the supply (the universities);

- Proposals for actions to be taken in order to tackle the demographic challenge.

Some conclusions are drawn and a number of recommendations are made.

1. Overview of the Demographic Situation and Its Perspectives

1.1. Country population

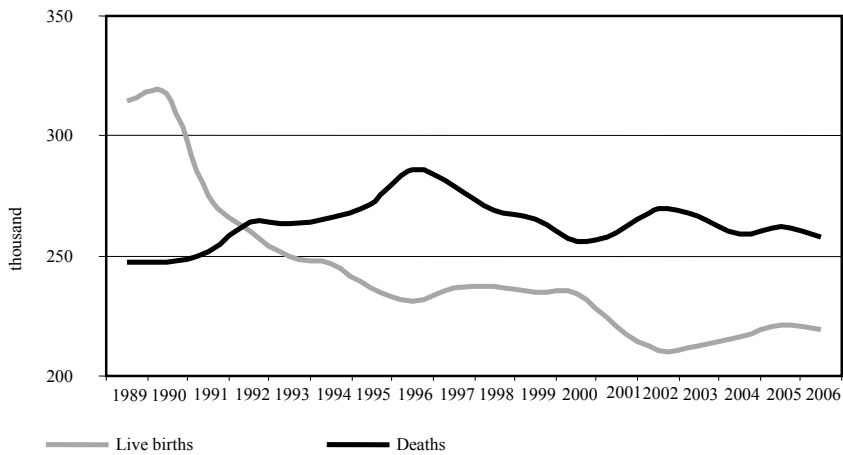
2007 is the eighteenth year of population decline in Romania and there is no sign of a foreseeable change during the coming years. On the contrary, the length of the downward trend and the characteristics of the entire demographic fabric argue for the continuation of the decline. A decrease of the population may be the distinct or cumulative result of three mechanisms: a negative net external migration higher than the natural growth; an increase in death rates exceeding birth rates and a recoil of birth rates under the number of deaths. All these changes occurred in Romania after 1989 (Table 1). In 1990 and 1991, emigration was very high and outbalanced the moderate natural increase. Starting with 1992, the natural decrease was added to the negative external migration, as a result of a sharp and deep drop in birth rates and an upswing in death rates (Figures 1 and 2). If we examine the two movements we will be able to see that in fact the magnitude of decline in birth rates was much higher than the increase of the death rates. This fact is essential in understanding the long-term implications of the Romanian population decline, as the deterioration of the age structure is not a result of the escalation of mortality but only of the birth rate dropping and its conservation at a low level (around ten per 1,000 of the population).

Table 1. Romania. Midyear population, live births, deaths, natural increase and recorded external migration, 1990-2006

Year	Midyear population (in thousand)	Natural components (in thousand)			External migration (in thousand)			Natural increase and net migration (in thousand)
		Live births	Deaths	Natural increase	Immigrants	Emigrants	Net migration	
1990	23,206.7	314.7	247.1	+67.7	3.1	96.9	-93.8	-26.2
1991	23,185.1	275.3	251.8	+23.5	1.6	44.2	-42.6	-19.0
1992	22,789.0	260.4	263.9	-3.5	1.8	31.2	-29.4	-32.9
1993	22,755.3	250.0	263.3	-13.3	1.3	18.4	-17.2	-30.5
1994	22,730.6	246.7	266.1	-19.4	0.9	17.1	-16.3	-35.6
1995	22,681.0	236.6	271.7	-35.0	4.5	25.7	-21.2	-56.2
1996	22,607.6	231.3	286.1	-54.8	2.1	21.5	-19.5	-74.3
1997	22,545.9	236.9	279.3	-42.4	6.6	19.9	-13.3	-55.8
1998	22,502.8	237.3	269.2	-31.9	11.9	17.5	-5.6	-37.5
1999	22,458.0	234.6	265.2	-30.6	10.1	12.6	-2.5	-33.1
2000	22,435.2	234.5	255.8	-21.3	11.0	14.8	-3.7	-25.0
2001	22,408.4	220.4	259.6	-39.2	10.4	9.9	+0.4	-38.8
2002	21,794.8	210.5	269.7	-59.1	6.6	8.2	-1.6	-60.7
2003	21,733.6	212.5	266.6	-54.1	3.3	10.7	-7.4	-61.5
2004	21,673.3	216.3	258.9	-42.6	3.0	13.1	-10.1	-52.7
2005	21,623.8	221.0	262.1	-41.1	3.7	10.9	-7.2	-48.3
2006	21,584.4	219.5	258.1	-38.6	7.7	14.2	-6.5	-45.1
1990-2006		4,058.5	4,494.5	-435.7			-297.5	-733.2

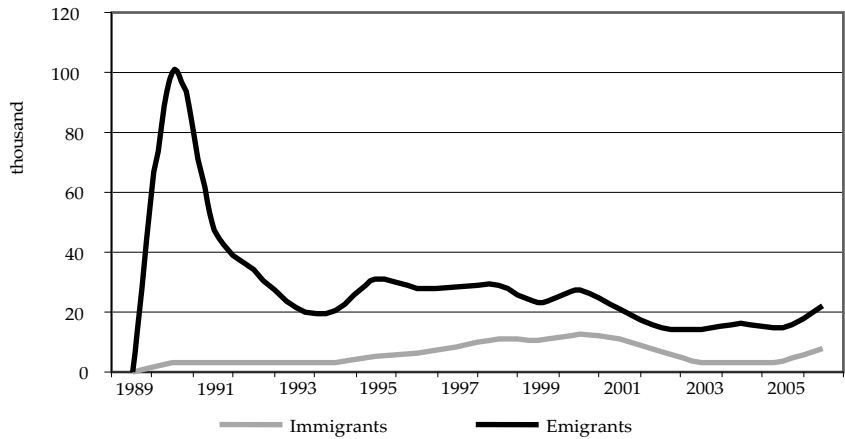
Source: INS, 2006; 2007a; 2007b; 2007c; 2007e.

Figure 1. Romania. Live births and deaths, 1989-2006



Source: INS, 2006; 2007a; 2007b.

Figure 2. Romania. Emigrants and immigrants, 1989-2006



Source: INS, 2006; 2007e.

Birth rates as well as death rates exercise a surprising stability after 2000 (Table 5). Have the internal forces that led to the changes of the 1990s exhausted their action? Have new factors moved in and neutralized the effect of these forces?

We are in a very complex area and only future developments will give us more knowledge and understanding of past and present demographic changes. Statistical data on migration and natural increase give a population decrease of 733,000 inhabitants for the entire period from 1990 to 2006, the main contribution being the natural component. For a population of twenty-three million inhabitants at the beginning of the 1990s the loss is not very important in size and implications, if we take into consideration the political, economic and social changes Romania experienced during the transition period. Unfortunately, the results of the population census of March 2002 give us a different picture of the Romanian population decline. Combining the data on stock and flows, the real population decline between the last two population censuses – January 1992 and March 2002 – reached 1.1 million inhabitants (Table 2).

Table 2. Romania. Contribution of natural increase, recorded and non-recorded external migration to population decline, 1992-2002

	Thousand inhabitants	In percentage
Overall decline	1129	100
<i>of which:</i>		
- natural decrease	304	27
- recorded net external migration	128	11
- non-recorded net external migration	697	62

Source: Ghețău, 2007.

The new and statistically unknown component of the population decrease is the non-recorded external migration. A substantial number of Romanians were not registered at the census as they were abroad. The reasons for that could be very different: absence of all members of a household; prudence and/or some fear in the case of those living and working illegally abroad.

For the entire period 1990-2006 the decline can be estimated at around 1.5 million inhabitants, representing a loss of near seven per cent of

Romania's population at the beginning of the 1990s. But this figure should be treated with care. Labour migration reached unimaginable levels after 2002, once the entry visa was eliminated for almost all European countries. The estimated number of Romanians presently working abroad exceeds two million and some signs of settling down can be noticed.

Table 3. Romania. Population by broad age groups and dependency ratio, 1985-2006

Year	Total	0-19 years	20-59 years	60 years and over	Young dependency ratio ⁽¹⁾	Elderly dependency ratio ⁽²⁾
1985						
(in thousand)	22,724.8	7,596.9	11,866.8	3,261.1	64.0	27.5
- as per cent	100.0	33.4	52.2	14.4		
1990						
(in thousand)	23,206.7	7,348.1	12,225.7	3,633.0	60.1	29.7
- as per cent	100.0	31.7	52.7	15.7		
1995						
(in thousand)	22,681.0	6,608.0	12,112.0	3,961.0	54.6	32.7
- as per cent	100.0	29.1	53.4	17.5		
2000						
(in thousand)	22,432.2	5,759.9	12,452.3	4,220.1	46.3	33.9
- as per cent	100.0	25.7	55.5	18.8		
2001						
(in thousand)	22,408.4	5,609.1	12,567.2	4,232.1	44.6	33.7
- as per cent	100.0	25.0	56.1	18.9		
2002						
(in thousand)	21,794.8	5,426.0	12,185.4	4,183.4	44.5	34.3
- as per cent	100.0	24.9	55.9	19.2		
2003						
(in thousand)	22,881.4	5,331.3	13,375.1	4,175.0	39.9	31.2
- as per cent	100.0	24.5	61.5	19.2		
2004						
(in thousand)	21,673.3	5,229.0	12,413.3	4,031.0	42.1	32.5
- as per cent	100.0	24.1	57.3	18.6		
2005						
(in thousand)	21,623.8	5,100.1	12,359.0	4,164.8	41.3	33.7
- as per cent	100.0	23.6	57.2	19.3		
2006						
(in thousand)	21,584.4	4,987.1	12,432.0	4,165.3	40.1	33.5
- as per cent	100.0	23.1	57.6	19.3		

⁽¹⁾ - population 0-19 years per cent population 20-59 years;

⁽²⁾ - population 60 years and over per cent population 20-59 years.

Source (of primary data): INS, 2006; 2007c.

It is too early to assess all demographic consequences of this new tendency, but an expansion of the population decline seems to be certain.

The negative consequences of a population decline are much harder when one of its main “engines” is a significant fall in birth rates.

The population aged sixty years and over amounted to 3.2 million in 1985 and reached 4.2 million in 2000. The stagnation of its number during the first half of 2000 is a strictly temporary movement as the smaller cohorts born during the years of the Second World War entered this age group. The ageing will restart soon, as well as the upswing of elderly dependency ratios, when the postwar baby boom cohorts will reach sixty years.

During the last seventeen years, the working age population had a stable evolution – around 13.5 million, and a relatively well-balanced age structure (Table 4). As the number of the country's population declined, the share of working age population slightly increased.

Table 4. Romania. Working age population, 1990, 1995, 2000, 2005 and 2006

Age group	1990	1995	2000	2005	2006
In thousand					
20-29 years	3,368.5	3,682.7	3,762.2	3,404.0	3,378.3
30-39 years	3,428.3	2,934.1	3,123.3	3,440.2	3,558.5
40-49 years	2,634.5	3,020.9	3,187.2	2,763.4	2,656.2
50-64 years	4,013.8	3,714.7	3,617.8	3,724.6	3,816.3
20-64 years	13,445.0	13,352.4	13,690.4	13,332.3	13,409.3
In percentage					
20-29 years	25.1	27.6	27.5	25.5	25.2
30-39 years	25.5	22.0	22.8	25.8	26.5
40-49 years	19.6	22.6	23.3	20.7	19.8
50-64 years	29.9	27.8	26.4	27.9	28.5
20-64 years	100.0	100.0	100.0	100.0	100.0
Population 20-64 years as percentage of total population	57.9	58.9	61.0	61.7	62.1

Source (of primary data): INS, 2006; 2007c.

While the working age population conserves its size, the elderly population aged sixty-five years and over is in full expansion: 2.4 million in 1990 and 3.2 million in 2006. On the other hand, after 2010 the working age population will follow a continuous downward trend, due to the inflow of smaller cohorts born after 1989.

1.2. Fertility levels

Fertility declined rapidly during the 1990s in the majority of Central and Eastern European transition countries. The Romanian case has a particularity. Romania had a forced and brutal pro-natalist policy before 1990, based on severe restrictions on contraception and abortion. The birth rate as well as the total fertility rate was higher than in almost all European countries: sixteen per 1,000 and 2.2 children per woman, respectively.

The abolition of those regulations on abortion and contraception was one of the first measures taken at the end of December 1989 in the context of the political and social changes that led to the fall of the communist regime. The drop of fertility was immediate and massive in Romania (Figure 3), while in central European countries it occurred two to three years later (Economic Commission for Europe, 1999). The dimension of the fall in the first half of the 1990s was higher in Romania than in the other former communist countries of Central and Eastern Europe (Council of Europe, 2006).

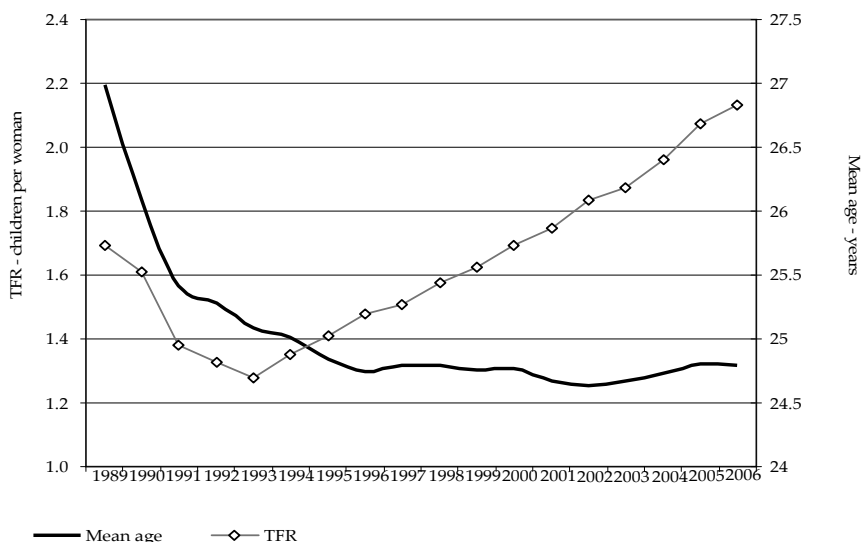
Table 5. Romania. Crude birth rate, total fertility rate, crude death rate and life expectancy at birth, 1990-2006

Year	Crude birth rate - per 1,000 population-	Total fertility rate - per woman-	Crude death rate - per 1,000 population-	Infant mortality rate - per 1,000 live births -	Life expectancy at birth – years	
					Males	Females
1989	16.0	2.19	10.7	26.9	66.7	72.7
1990	13.6	1.83	10.6	26.9	66.6	73.1
1991	11.9	1.57	10.9	22.7	66.8	73.4
1992	11.4	1.51	11.6	23.3	66.1	73.3
1993	11.0	1.44	11.6	23.3	65.9	73.3
1994	10.9	1.40	11.7	23.9	65.7	73.3
1995	10.4	1.34	12.0	21.2	65.5	73.5
1996	10.2	1.30	12.7	22.3	65.1	72.8
1997	10.5	1.32	12.4	22.0	65.3	73.2
1998	10.5	1.32	12.0	20.5	66.2	73.7
1999	10.4	1.30	11.8	18.6	67.1	74.2
2000	10.5	1.31	11.4	18.6	67.8	74.8
2001	9.8	1.27	11.6	18.4	67.7	75.1
2002	9.7	1.25	12.4	17.3	67.4	74.9
2003	9.8	1.27	12.3	16.7	67.8	75.2
2004	10.0	1.29	11.9	16.8	68.3	75.6
2005	10.2	1.32	12.1	15.0	68.8	75.8
2006	10.2	1.31	12.0	13.9	69.2	76.2

Source: INS, 2006; 2007a; 2007b; Ghețău, 2007 (for life expectancy).

Starting with the mid-1990s birth rates as well as the total fertility rate exhibit a noticeable stability at around ten per 1,000 and 1.3 children per woman. Behind this equilibrium, one can detect strong structural changes in fertility, the postponement of the onset of motherhood and childbearing.

Figure 3. Romania. Total fertility rate and mean age of women at childbearing 1989-2006



Source: INS, 2006; 2007e.

The present low level of fertility is the combined result of the Romanian demographic heritage, the social and economic crisis that accompanied the transition to democracy and the market economy, but also of an opening towards civil society, with its many attendant rights and freedoms. But the preservation of this level, far from the replacement level, leads to a catastrophic demographic skid by the mid of the century.

1.3. Mortality and life expectancy

Mortality remains high in Romania as an aggregate expression of the general economic, social, cultural and medical degree of development of Romanian society. Life expectancy at birth, the best measure of mortality

and health status, is seven to eight years lower than in the highly developed countries and pushes Romania to the bottom part of a European rating.

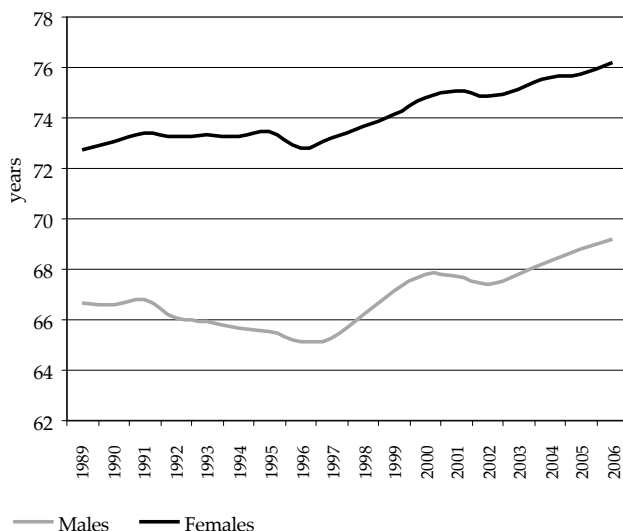
The number of deaths and the crude death rate increased in the first half of the 1990s as a response to the deterioration of the standard of living, spreading poverty, increasing unemployment, violence, stress and the collapse of the public healthcare sector. The excess of deaths mostly took place in the male population. Accordingly, male life expectancy at birth decreased by 1.5 years between 1990 and 1996, while the downward movement was minimal for females (Figure 4). Another very significant measure of mortality is the infant mortality rate. With fourteen infant deaths for 1,000 live births in 2006, Romania is in a very disadvantageous position in Europe. Like all crude indicators, the crude death rate depends on the number of deaths and the total size of the population, without taking into account the age structure of deaths and of the population. As a result, it is possible to have decreasing mortality rates by age, an augmentation of life expectancy and increasing or stagnating crude death rates. That is the case for Romania after 1996. Death rates by age decreased and life expectancy at birth is now 3.5 years higher than in 1996 (for both males and females) and the progress is well installed. But the ageing keeps the crude death rate at twelve per 1,000 inhabitants. As the process will accelerate during the next years, when the postwar baby boom cohorts will reach sixty years, it is strongly probable that the crude death rate will remain at this level.

A major drawback in pushing down Romanian mortality is the extremely high share of deaths caused by cardiovascular diseases: sixty-two per 1,000 inhabitants in 2006. According to the World Health Organization, Romania had in 2004 a rate of mortality from cardiovascular diseases of 6.5 deaths per 1,000 inhabitants, while the EU15 countries had only 2.2 per 1,000 inhabitants (World Health Organization, 2006). In fact, the so-called *cardiovascular revolution*, which began in western countries at the beginning of the 1970s and materialized in a spectacular reduction of cardiovascular mortality (Vallin and Meslé, 2001; 2002; 2004), has not yet started in Romania.

Nevertheless it did occur in the first half of the 1990s in the transition countries in which reforms were rapidly and efficiently implemented, with positive effects on the quality of life (Czech Republic, Poland, Slovakia, Estonia, and Latvia) (Wroblewska, 2006). When the standard of living and

healthcare will improve significantly, the mortality from cardiovascular diseases will certainly fall rapidly and life expectancy will record an important progress.

Figure 4. Romania. Life expectancy at birth, 1989-2006



Source: Ghețău (unpublished).

The economic and social changes after 1989 strongly remodelled the migration flows between urban and rural areas. Romania had and still has a low level of urbanization, fifty-five per cent only of its population living in urban areas. Before 1990, almost two thirds of all internal migration (with a change of permanent residence) was composed of rural-urban flow. Starting with 1992 an apparently strange decrease of this component and an opposite development appeared. The reversing change continued and consolidated over the next years and in 1997 – for the first time in Romania's social history – the number of migrants from urban to rural areas surpassed the traditional opposite flow and this characteristic remained well rooted in the Romanian internal migration. The factors which lead to this change are related to the transition and can be easily found: a sharp increase in the

urban unemployment, increasing cost of housing and domestic utilities, urban violence; on the other hand, the land reform and the restitution of land to former owners acted as a pulling factor. What future is there for these migrants in a rural agricultural world producing thirty-five per cent of the country's economically active population? The outcome did not retard. Pushed by misery and lack of hope, the urban-rural migrants composed the main proportion of the enormous labour migration abroad.

1.4. External migration

The Romanian external migration has two faces: the legal, statistically recorded emigration and immigration, and the labour migration.

The first component is not very important in size: 10,000 to 15,000 emigrants and a few thousands immigrants per year (Figure 2). One can notice the high proportion of emigrants having university level education – around twenty-five per cent. The main destination countries are Germany, Italy, the USA and Canada. The immigration flow has two components: a return migration and a moderate number of immigrants from the Republic of Moldova (NSI, 2006; 2007e).

The labour migration is now the most important face of Romanian external migration. The estimated number of Romanians working abroad is two million, and they are mainly in Spain and Italy. From an economic and social perspective, this migration is extremely beneficial for migrants, their families and for the country. From a demographic perspective, the phenomenon has a different dimension. The tendency of definitely remaining in the destination countries is well-established, and that is a human loss.

The future of Romanian external migration is only partially known. Western countries now need a foreign labour force for economic reasons (Schoenmaekers and Kotowska, 2005). But some western countries start facing a small natural decrease of population (Lanzieri, 2006b). Immigration covers this natural decrease. Other western countries will have a natural decrease in the coming years. To avoid population decline, those countries will increase immigration levels and the reservoir of this migration will be the eastern countries, including Romania (not the south, as during the postwar economic boom). The future of Romanian external migration will

depend of how strong and stable the national economic growth will be, to what extent this growth will significantly raise the standard of living, and the immigration policies of western countries.

1.5. Main challenges of the demographic shifts on the country economic and social development

The transition to democracy and a market economy seriously influenced the Romanian demographic landscape. Decreasing fertility, increasing mortality and a high external migration are the results of this transition. We can distinguish two types of changes: the first one has an objective nature, resulting from the intensity of political, economic and social changes. The decrease of fertility is, to a large extent, the result of these changes and it occurred in all transition countries, including those where the standard of living deteriorated temporarily only (Czech Republic, Poland and Slovakia). The shock of change, the uncertainty, the “fear of the future” and the rapid spread of “western reproductive behaviour” have played an important role. In the Romanian case (as well as in other transition countries), the economic and social crisis has deepened the extend of this decrease. The crisis was the result not only of objective hardship associated with the passage from a centrally planned economy to a market economy, but also the result of substantial errors in ruling the changes, a lack of political will, and corruption. The escalate of mortality as well as the real external migration exodus find their explanation in these realities.

The population decline by itself has not had visible negative economic consequences until now. On the contrary, we may state that on some economic and social levels the decline had and still has a number of positive effects. The decrease of the number of births has diminished the private and public expenses related to pregnancy, maternity, medical care, and child rearing.

The labour migration relieved the labour market, pushed down unemployment, diminished the social burden and brings around Euro five billion per year in remittances. But this high migration begins now to show its negative face.

In some economic sectors, *e.g.*, construction, hotel and tourism services, Romania is facing a shortage of labour force and the movement is in full expansion.

The population aged nineteen to twenty-three was not yet influenced by the low birth rates after 1989 but a decline can be noticed after 2000, as a result of a moderate downward trend of birth rates in the second half of the 1970s and during the 1980s, despite the forced pro-natalist policy of the former regime (Table 6). But the rapid and important decrease of the birth rate after 1989 had a direct impact on the size of the school-aged population at primary and secondary level (Figure 6c).

Table 6. Romania. Population aged 19-23, 1990-2006

Year	19 years	20 years	21 years	22 years	23 years	Total 19-23 years	Males 19-23 years	Females 9-23 years	Birth cohorts
1990	378.2	414.5	447.5	553.2	301.7	2,095.1	1,067.5	1,027.5	1971-1966
1991	370.5	377.2	413.4	446.2	551.6	2,158.8	1,099.5	1,059.4	1972-1967
1992	347.0	345.5	354.3	394.5	427.7	1,868.9	944.5	924.4	1973-1968
1993	377.8	346.2	344.6	353.3	393.4	1,815.4	919.9	895.4	1974-1969
1994	406.1	377.1	345.6	343.9	352.5	1,825.3	928.4	896.9	1975-1970
1995	399.7	405.5	376.5	345.0	343.1	1,869.8	957.2	912.6	1976-1971
1996	404.6	399.0	404.8	375.7	344.1	1,928.2	991.7	936.5	1977-1972
1997	390.7	404.0	398.5	404.2	375.1	1,972.5	1,012.7	959.8	1978-1973
1998	383.6	390.5	403.9	398.5	403.9	1,980.3	1,013.5	966.8	1979-1974
1999	380.9	383.4	390.2	403.5	398.2	1,956.2	998.9	957.2	1980-1975
2000	368.5	380.8	383.4	390.0	403.3	1,925.9	982.4	943.5	1981-1976
2001	341.4	368.3	380.6	383.2	389.8	1,863.3	949.5	913.8	1982-1977
2002	298.8	325.9	348.1	358.2	360.6	1,691.5	865.4	826.1	1983-1978
2003	308.1	298.5	325.6	347.8	357.8	1,637.8	838.1	799.7	1984-1979
2004	341.1	307.8	298.3	325.2	347.3	1,619.8	828.5	791.3	1985-1980
2005	329.4	340.9	307.5	297.9	324.9	1,600.6	819.3	781.4	1986-1981
2006	367.0	329.2	340.6	307.4	297.8	1,641.9	840.6	801.3	1987-1982

Source: INS, 2006; 2007.

The very large cohorts 1967-1972, attained nineteen years in the second part of the 1980s and inflated the nineteen to twenty-three age group over the following years, including 1990-1991, when the tertiary-age population reached 2.1 million. But starting with 2009-2010, the smaller cohorts born

after 1989 will compose the population of those aged nineteen to twenty-three and the size of this population will sharply decrease (Figure 6d). The true and hard consequences of the Romanian population decline after 1989 will severely show after 2025 (Table 7).

Table 7. Assumptions and main results of population projections for Romania produced by the Population Research Center of the Romanian Academy (PRCRA), Population Division of the United Nations (PDUN) and Eurostat

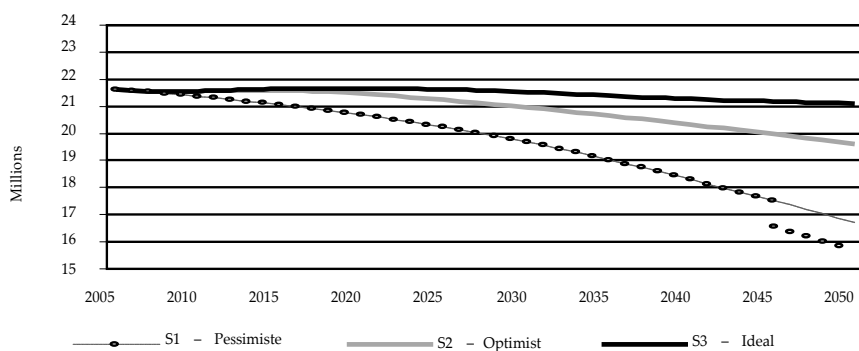
Indicator	PRCRA 2007		PDUN 2006 Revision		Eurostat 2006
	Scenario 1 Pessimist	Scenario 2 Optimist	Medium variant	Constant variant	Baseline scenario
Population					
–million					
- 2025	20.2	21.2	19.5	19.3	19.7
- 2050	16.7	19.6	15.9	14.9	17.1
Total fertility rate					
– children per woman					
- 2025	1.3	1.8	1.45	1.29	1.44
- 2050	1.3	1.8	1.70	1.29	1.50
Crude birth rate					
–per 1,000 inhabitants					
- 2025	7.8	9.7	8.1	7.1	–*
- 2050	6.6	10.1	7.9	5.4	–*
Life expectancy at birth					
– years					
- 2025					
- males	73	73	72.8	72.8	73.7
- females	79	79	79.2	79.2	79.2
- 2050					
- males	76	76	76.4	76.4	77.6
- females	82	82	82.4	82.4	82
Crude death rate					
– per 1,000 inhabitants					
- 2025	12.7	12.2	13.3	13.4	–*
- 2050	16.7	14.3	16.8	17.8	–*
Net external migration					
2005-2050	Not included		-1.1 million	- 1.1 million	- 0.5 million

* data not available.

Source: United Nations, 2007; Lanzieri, G., 2006a; PRCRA, 2007.

The fall and the conservation of a low level of fertility over such a long period of time have strongly deteriorated the population age structure and have accelerated of population ageing. Without a consistent restoring of fertility, the birth rate will reach extremely low levels after 2020-2025 and Romania will face a dramatic demographic skid (Figure 5).

Figure 5. Romania. Three scenarios of population projections, 2006-2050



Assumptions:

Total fertility rate: – S1=constant-1.3; – S2= increase to 1.8 in 2010 and conservation of this level; – S3=increase to 1.8 in 2010, to 2.1 in 2020 an conservation of this level;

Life expectancy: increase from 68 to 76 years for men and from 75 to 82 years for women;

Migration: not included.

Source: Ghețău, 2007.

1.6. Factors influencing national demographic development

Demographic phenomena have different determinants and consequences and these are important in order to identify the factors modeling national demographic development.

A number of determinants and mechanisms of the Romanian demographic trends are identical with those acting in other populations.

On the other hand, national, economic, social, cultural and historical factors adjust demographic trends and add a specific hall-mark.

Mortality is the mirror of the past and present economic, social, cultural and medical environment. The low level of life expectancy at birth in Romania integrates all these factors.

A low standard of living, imbalanced food, nutritional status of a number of unhealthy practices (smoking, drinking), poor housing conditions for a large part of the population (including access to safe water), improper environment (pollution), low levels of education for some population groups, an inefficient public healthcare sector, high cost of good quality private medical services and other factors are behind this low level of life expectancy. Only the general progress of the country is expected to improve the health status.

The high level of external migration has its origin in the national economic and social context. Poverty, in rural areas particularly, has pushed hundreds of thousands of Romanians to look for a better life abroad. This labour migration is, mainly, a temporary migration. Despite some negative consequences, it can be appreciated as highly beneficial for migrants, for their families and for the country. On the other hand, new and alarming enough facettes of this migration can recently be observed. Some of the migrant parents in Spain and Italy bring their children to the destination countries and schooling take place in the language of the country of residence.

As the dimension of the labour migration is extremely high and increasing, the migration of children will increase the problems of the Romanian education system, including the tertiary level.

Fertility is the most complex demographic phenomenon. The role of economic and social factors cannot be underestimated but more and more attention is given to cultural factors.

New attitudes concerning cohabitation, marriage, sexuality, divorce, the child-rearing, the economic position of women, new and efficient contraception and other non-economic factors play now an increasing role in fertility determination (van de Kaa, 1987).

Without a strong increase in fertility, Romania's population will experience a terrible deterioration of the age structure and a catastrophic decline of its number (Figure 5), with serious economic and social implications. The ageing process will arrive at a dangerously low level – near forty per cent of the population being sixty years and over, the elderly dependency ratio reaching eight-five per cent of those aged sixty years and over.

From 2007 to 2009, the tertiary-age population will still be composed of birth cohorts born before 1990 and its size will remain at 1.7 million but starting with 2010 the smaller cohorts born between 1990 and 2006 will enter this population and will rapidly and constantly diminish its size, from 1.7 million in 2007 to one million in 2024 (Table 8 and Figure 6).

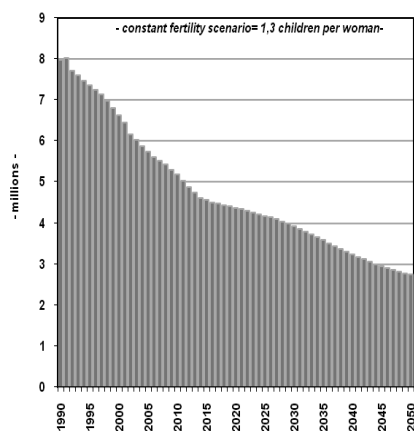
Table 8. Population aged 19-23, 2007-2024 (birth cohorts 1983-2005)

Year	19 years	20 years	21 years	22 years	23 years	Together 19-23 years	Males 19-23 years	Females 19-23 years	Birth cohorts
2007	350	367	329	340	307	1,694	866	828	1988-1983
2008	339	350	367	329	340	1,724	880	845	1989-1984
2009	340	339	350	366	329	1,723	878	845	1990-1985
2010	255	340	338	350	366	1,649	840	809	1991-1986
2011	256	255	340	338	350	1,538	784	754	1992-1987
2012	237	256	255	339	338	1,425	726	699	1993-1988
2013	236	237	256	255	339	1,322	675	647	1994-1989
2014	222	236	237	256	254	1,204	616	589	1995-1990
2015	223	222	236	237	255	1,172	599	573	1996-1991
2016	215	223	221	236	236	1,131	578	553	1997-1992
2017	223	214	223	221	235	1,116	571	545	1998-1993
2018	222	222	214	222	221	1,102	564	538	1999-1994
2019	222	222	222	214	222	1,102	564	538	2000-1995
2020	213	222	222	222	214	1,092	559	533	2001-1996
2021	206	212	222	221	222	1,084	556	528	2002-1997
2022	206	206	212	222	221	1,067	547	520	2003-1998
2023	208	206	206	212	221	1,054	541	513	2004-1999
2024	213	208	206	206	212	1,045	536	509	2005-2000

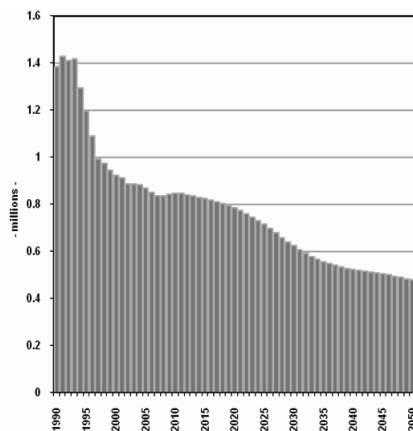
Source: Population projections of the PRCRA, 2007.

Figure 6. Romania. School-age population 1990-2006 and projected levels for 2007-2050

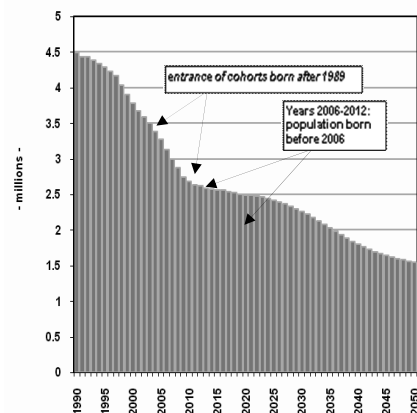
6.a. Population aged 3-23 years



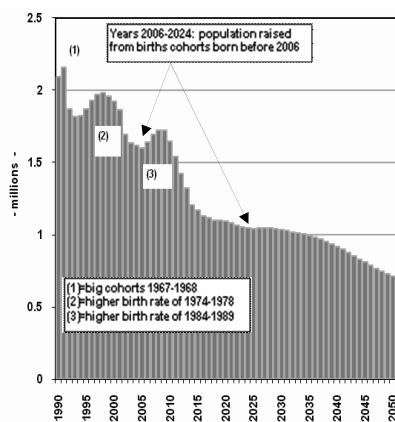
6.b. Population aged 3-6 years



6.c. Population aged 7-18 years



6.d. Population aged 3-6 years



Source: Ghețău, 2007.

After 2024 the tertiary-age population will depend of the unforeseen future developments of fertility.

The conservation of its present low level will push the tertiary-age population to 700,000 only in 2050 (one third of its 1990 size).

An increase of the fertility level after 2010 will reduce the magnitude of the deterioration of the tertiary-age population by 2050 but only moderately.

1.7. A brief demographic prospective view on the number of students in higher education

The number of students was 166,000 only in the academic year 1989/1990 and attained 716,000 in 2005/2006. The increase is a spectacular one – 3.4 times in fifteen years. The ratio students/population aged nineteen to twenty-three years was eight per cent only and reached forty-five per cent in 2005/2006. The number of the population aged nineteen to twenty-three years is 1.6 million today and it will still remain at 1.6 to 1.7 million until to 2011.

In other words, the “*demographic offer*” will continue to be a favourable one for the next few years. If the annual increase of students will remain at the level of the last two years (we cannot see now any reason for a declining movement), the number of students should reach the historical threshold of one million by 2010, representing nearly sixty per cent of the population aged nineteen to twenty-three years (the level of fifty per cent should be registered in 2008). The population aged nineteen to twenty-three years will rapidly decrease after 2010, as the smaller birth cohorts born after 1989 will enter the population group aged nineteen to twenty-three years, and the number of students in higher education will automatically and objectively decline. The speed of this decline could be lower than expected: for two to three years, by opposite compensating effect of increasing the enrolment ratio, but the downward trends will reach a dramatic speed after 2015.

The demographic construction and its interactions with socio-economic factors are a very complex fabric. The fall of the school-age population, already beginning in Romania and having worse dimension during the following years, will certainly have a number of negative economic and social consequences, related to the education infrastructure and teaching staff.

The adjustments to a new demographic landscape should be the commitments of the ruling class and policy-makers.

What is important is the enrolment ratio in tertiary education and, implicitly, the share of the population having a higher education degree.

1.8. Some final demographic remarks

The school-age population is just a subpopulation. Its size depends on the level of birth rate and any important upward or downward change of the birth rate directly entails this subpopulation. The Romanian population decline is essentially the result of decreasing birth rates. After eighteen years of low fertility the entire demographic construction is seriously deteriorated and its internal dynamic will automatically lead to a higher future decline and accelerating ageing. Without a consistent and long-term fertility increase, the demographic skid and the strong depopulation are inevitable. Building a realist, coherent and responsible population policy is now not an alternative but the unique way for diminishing the magnitude of such a deterioration.

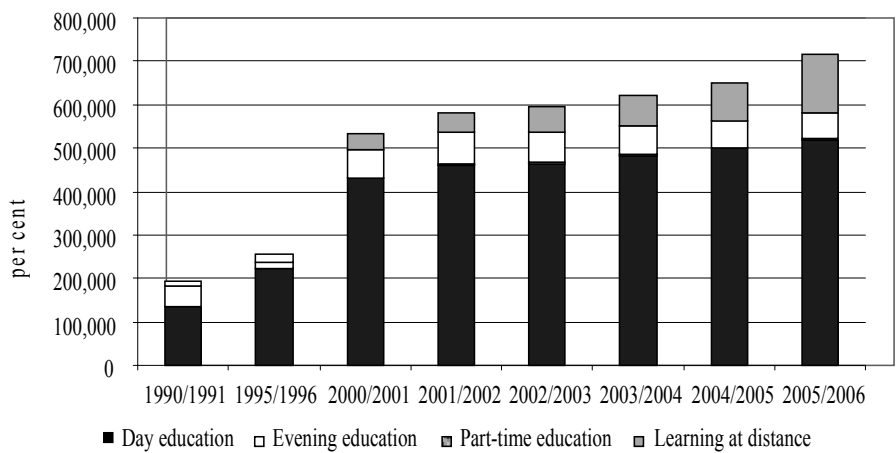
The higher education system is directly affected by the population crisis and the dimension of its breakdown is going to dramatically increase after 2010. A redressing of fertility rates will have positive effects in twenty years.

2. The Demographic Challenge for Romanian Higher Education

2.1. Enrolment rate for tertiary education in Romania

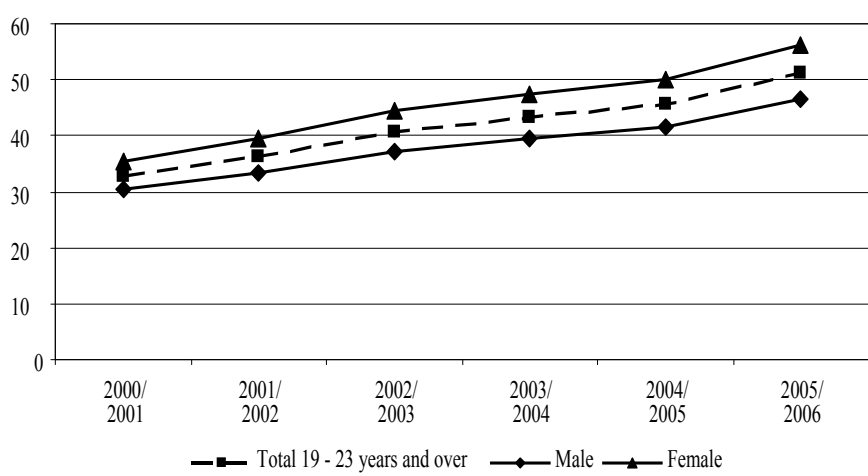
The enrolment rate in tertiary education presents an ascending trend in Romania. During the period from 2000 to 2004 the enrolment rate grew from 32.9 per cent (academic year 2000-2001) to 51.2 per cent (academic year 2005-2006); this evolution shows the sustenance of an ascending trend for tertiary education (Figures 7 and 8). During this period the enrolment rate for women was superior to that for men, the difference growing from five per cent in the academic year 2000-2001 (35.5 per cent over 30.4 per cent) to ten per cent in the academic year 2004-2005 (56.1 per cent over 46.5 per cent).

Figure 7. Romania. Students in tertiary education, 1990/1991-2005/2006



Source: INS, 1997; 2005; 2006.

Figure 8. Romania. Enrolment rate for tertiary education, 2000/2001-2005/2006



Source: INS, 2006.

One factor considered responsible for this growth is the increasing number of private universities.

2.2. Public versus private tertiary education

Starting its development at the beginning of the 1990s, private higher education has mostly been orientated towards areas that consider mostly labour market requirements.

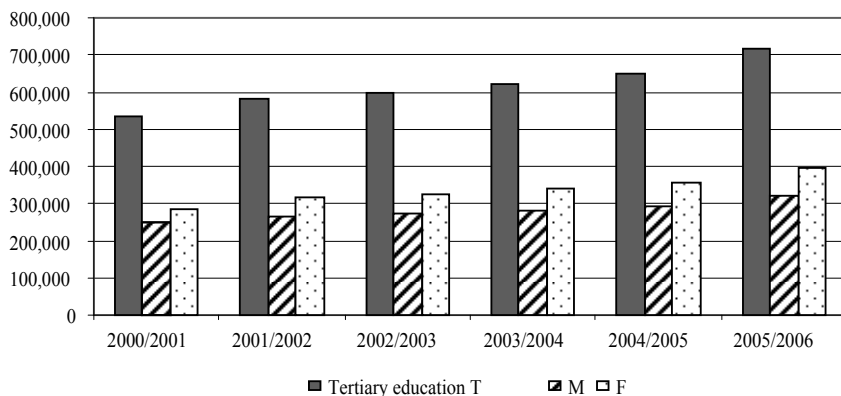
Private higher education institutions provide study programmes mainly in the economic, legal, philological and theological fields. On the other hand, although the public system of tertiary education continues to be very important, a growth of the share of students in private universities can be observed. The rapid expansion of private higher education in Romania after 1990, in the new political, economic and social environment, had, still has and seems to continue to bring direct and indirect complex, significant and mostly undesirable effects on the entire national higher education. Private universities have low admission criteria, attracting a large number of students. This fact might disadvantage public universities that traditionally have strong admission criteria and a higher quality. In consequence, the expectation is that the quality of higher education moves to a lower standard.

As population projections clearly show a dramatic fall in the number of the young population during the next decades, it is almost certain that public universities will continue to be seriously affected.

2.3. Gender gap

Gender differences exist in Romanian tertiary education. Women represented a percentage of fifty-five per cent of the enrolled students in tertiary education, in the academic year 2005-2006, with an increasing trend from 285,305 students in 2000/2001 to 396,793 students in 2005/2006 (Figure 9).

Figure 9. Romania. Students in tertiary education by gender, 2000/2001-2005/2006



Source: INS, 2006.

The high percentage of females among tertiary students in Romania is comparable to the general trend expressed by international comparative data. The gender gap is much more obvious in the case of the students' distribution according to fields of study.

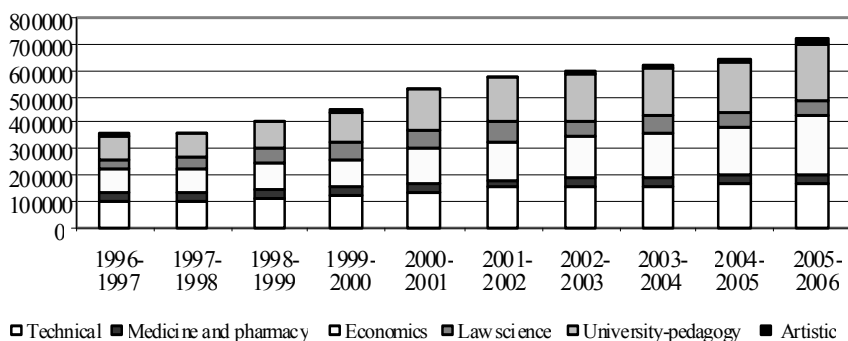
The weight of female students attending mathematics, sciences and computer technology is part of the benchmarks established by the *Lisbon Strategy* for 2010. The total number of graduates in mathematics, science and technology (MST) in the European Union should increase by at least fifteen per cent by 2010, while at the same time the level of the gender imbalance should decrease. In Romania, in 2005, the number of graduates in MST, aged twenty to twenty-nine years per 1,000 inhabitants, has been 10.3 as compared to 13.1 on average in the EU-27. In Romania the average annual growth rate from 2000 to 2005 by number of graduates in MST per 1,000 inhabitants, aged twenty to twenty-nine, has been 6.7 as compared to 4.7 in the EU-27.

Regarding the average annual growth rate of MST graduates per year in 2005 in Romania the data was 4.2 which is quite close to 4.8 in the EU-27 for the same year (Commission of the European Communities, Brussels, 2007).

2.4. Tertiary education by group of specializations

The indicator of specialization in tertiary education shows the situation of students' orientation in their career according to the most recent developments on the labour market (Figure 10).

Figure 10. Romania. Students in tertiary education by group of specialization, 1996/1997-2005/2006



Source: INS, 2006.

Major changes occurred in students' orientation towards specific fields. Some specializations (law, economics) were favoured to the detriment of those focused on sciences.

While students attending the first type are in a hurry to finish their studies and to take well-paid jobs, students in physics, mathematics or ITC (Information Technology and Communication) are looking to obtain access to postgraduate studies, scholarships and good career opportunities for a well-paid job, including employment abroad. In Romania, a qualification at the level of a university diploma has become increasingly accessible to a large number of young adults. As a real market for qualifications starts to form, the numbers of students will regulate itself according to market demands.

Romanian realities require reconsideration in terms of increasing the number of student enrolment in certain specializations and also promote the need to orient students towards new fields offering increased numbers of employment opportunities. One expanding demand is for ITC.

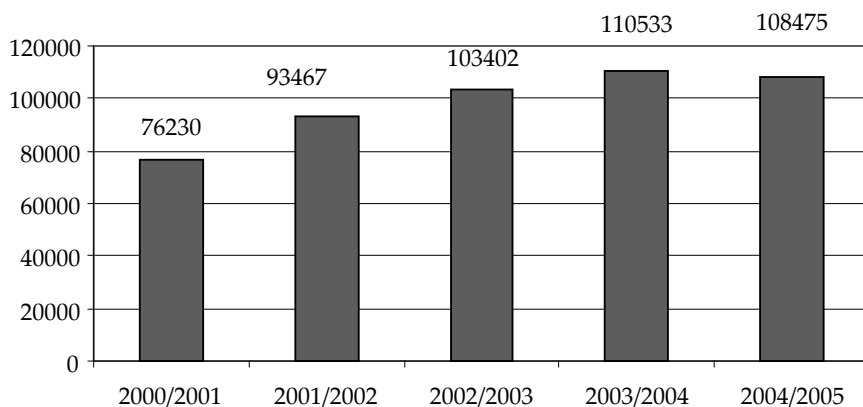
2.5. Student numbers

There is no doubt that over the last seventeen years Romania has seen an important expansion in the number of students. The number of students per 100,000 inhabitants reached the level of 3,409 in 2004/2005.

These data are relatively similar to those in Croatia (3,632); Belarus (3,694); Moldova (3,170); Bulgaria (3,082); Slovak Republic (3,058). But, in Central and Eastern Europe, there are also higher values such as those in: Latvia (5,651); Slovenia (5,618); Lithuania (5,567); Estonia (5,028); Poland (5,023); Hungary (4,166) (UNESCO, 2005).

The number of students who graduated tertiary education keeps evolving on an ascending trend. More and more young people finish this form of education. The number of graduates had an ascending trend except for the academic year 2004-2005, when the number of graduates was two per cent lower (Figure 11).

Figure 11. Romania. Graduated students in tertiary education, 2000/2001-2004/2005



Source: INS, 2006.

The indicator of the graduate ratio in Romania was thirty per cent in 2004 and is comparable to other European countries and quite close to some developed countries such as Japan and the United States.

2.6. Projection of school-aged population

Demographic projections are a major instrument in developing programmes and strategies for economic and social development. The prognosis of the school-aged population is difficult but it would offer information about the expected future evolution of its numbers and structure: age groups, gender or territorial profile. It derives from the demographic projection of the total population, conducted on the *Components Method* basis.

The authors focus on the determination of school-age population for 2025, and especially on the student population. The school-age population projections are taken from the *National Statistical Institute* (INS, 2006b). Knowing the structure of total population by age groups, the projection of the higher education population must take into account the levels of gross and net enrolment rate.

The gross enrolment rate (GER) represents the total number of students enrolled in tertiary education divided by the number of people in an appropriate age range for tertiary education (nineteen to twenty-three years). In higher education, in the academic year 2004/2005, the gross enrolment rate was 40.2 per cent.

It is important to mention that it has rapidly grown over past years, particularly due to the evolution determined by the growth of the private education (Table 9).

Table 9. Romania. Tertiary gross enrolment rate by gender, selected years (in percentage)

	1991	1999	2002	2004	2004 European region average
Total	10	22	32	40	54
Male	10	21	28	36	48
Female	9	23	35	45	60

Source: UNESCO, 2006.

The net enrolment rate (NER) shows the attendance of pupils that have the standard age adequate for each level of education.

By subtracting the gross enrolment rate from net enrolment rate, we show the incidence of the enrolment at ages under and above the official

age. In the academic year 2004/2005 the net enrolment rate in higher education was twenty-nine per cent.

The projections are based on two assumptions regarding both the gross and net enrolment rate:

- *Hypothesis 1.* Constant hypothesis in which enrolment rates registered in 2004/2005 were supposed to remain constant over the entire time period.
- *Hypothesis 2.* Average enrolment rates registered for the period 2001-2005.

The predictable changes in the education level structure under the assumption of constant gross enrollment rate are shown in Table 10.

Table 10. Romania. Number of pupils and students by level of education, 2005, and projected number for 2015 and 2025 (assumption of constant gross enrolment rate) (in thousand)

Level of education	2005	2015	2025	Change 2005–2025 (in thousand)	Change 2005–2025 per cent
Pre-primary	644.9	605.3	482.6	-162.3	-25.2
Primary	962.6	934.2	806.2	-156.4	-16.2
Gymnasium	1,012.6	785.4	757.3	-255.3	-25.2
High school	773.8	484.8	472.9	-3,001.0	-38.9
Vocational	289.5	183.9	176.2	-113.3	-39.1
Post-high-school	48.7	34.3	35.5	-18.2	-37.4
Tertiary	650.3	410.5	385.2	-265.1	-40.8

Source: INS, 2006b.

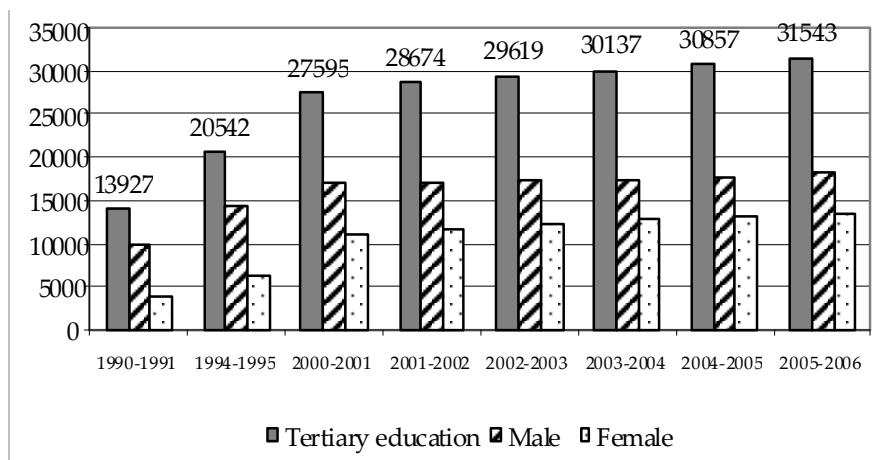
The number of students in higher education is expected to diminish by forty-one per cent reaching 383,000 persons in 2025.

2.7. Academic staff

The academic profession remained an attractive career for young specialists given the social prestige it grants and the possibilities for a relatively personal autonomy. However, the main disincentives are the difficulty in finding convenient housing at affordable prices in university environments and the desire to earn a higher wage.

The number of teaching staff involved in higher education has grown (Figure 12), mostly during the period 1995-2000, by thirty-four per cent.

Figure 12. Romania. Teaching staff in tertiary education by gender, 1990/1991- 2005/2006



Source: INS, 1996; 2005; 2006.

Almost three quarters (seventy-two per cent) of the teaching staff in the Romanian education system is female. The tertiary level is the only one where men are more numerous than women.

The gender structure of academic staff evolved spectacularly: in the 1990 the percentage of male teachers was seventy-two of all personnel, and in 2006 it was fifty-seven.

The institutional recruitment policy as carried out by chairs and faculties is focused on the recruitment of mostly young teaching assistants and lecturers.

2.8. Student/teacher ratio

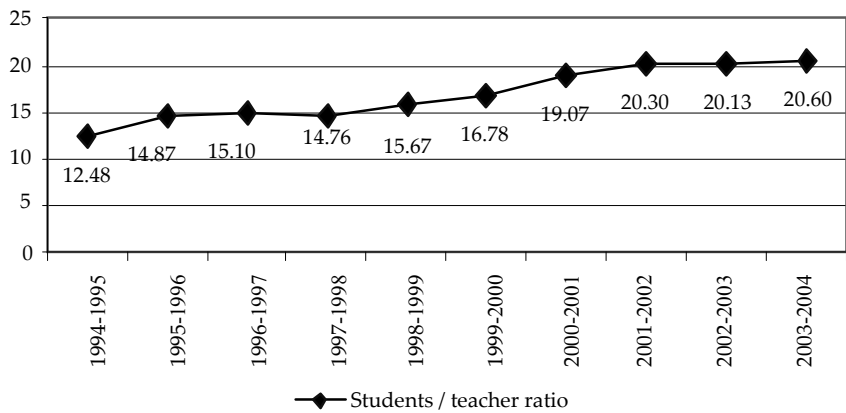
The ratio between the number of students and the number of teachers is important as it is a starting point for efficient policies in education.

It may also influence the quality of the educational process. The link between these two elements is strongly tied to the salaries of academic staff.

This may explain the fact that some countries spend more per student than others even when the student teacher ratio is the same.

In Romania, the ratio is 21:1. Between 2000 and 2004 the number of students per teacher has gradually increased (Figure 13). This was a predictable situation since the teaching staff in the same interval grew at a smaller pace than the number of students.

Figure 13. Romania. Students/teacher ratio in tertiary education, 1994/1995-2003/2004



Source: INS, 2004.

Given the circumstances of the increasing number of students, the possibilities for direct, individualized work with students have decreased. It has become clear that on the qualifications market, greater chances for success are offered through postgraduate studies, and undergraduate studies alone no longer seem to be highly competitive.

2.9. Demographic shifts and expected challenge for Romanian universities

The following part will briefly present some of the most important challenges of the demographic shifts for Romanian higher education institutions.

2.9.1. Lifelong learning (LLL)

Participation in lifelong learning activities means participation in any learning activities (formal, non-formal or informal) of persons aged twenty-five to sixty-four. In Romania participation in LLL is estimated to represent a percentage of just 1.6 per cent. According to *EUROSTAT*, Romania is on the last position, considering participation in any type of learning activities, as a percentage of population aged twenty-five to sixty-four. The EU average level of participation in lifelong learning (one of the Lisbon five targets in education and training) should be, by the year 2010, at least 12.5 per cent of the adult working age population (twenty-five to sixty-four age group).

Some of the results from the complementary survey “*Characteristics of Lifelong Learning*” that has been carried out as a complementary module to *Survey on Household Labour force (AMIGO)* are further presented. According to this survey from the registered population aged twenty-five to sixty-four, the participation rate in lifelong learning of persons aged fifteen and over was of 18.1 per cent [larger for men (18.5 per cent) than for women (17.7 per cent)]. On average, for the population within the work age interval fifteen to sixty-four years, the participation rate to an education form was of 20.8 per cent (25.1 per cent in urban and 15.1 per cent in rural areas). Out of all higher education graduates, approximately a third continued education in the following twelve months (31.8 per cent), under one of the lifelong learning forms. The participation rate in at least one form of education was higher (55.8 per cent) among those with PhD studies. From the higher education graduates, 27.1 per cent became specialized in economic, social, financial and juridical sciences, followed by engineering and architecture (26.4 per cent), and by exact sciences (15.4 per cent). Out of those who studied within the national education system those aged between fifteen and twenty-four years represented 91.9 per cent, of which 51.1 per cent were represented by women. Among the persons with post-university studies including the PhD, 36.3 per cent became specialized in social, economic, financial, legal sciences and, respectively, 22.2 per cent of the graduates specialized in exact sciences.

In the first half of April 2007, a survey entitled “*Companies’ attitudes towards a business-education partnership*” was carried out in Bucharest (Bogoi and Burtoiu, 2007). The objective was to identify companies’ opinions

regarding higher education curricula (with an economic profile) and their degree of openness towards a potential partnership with business. The survey involved the human resources representatives from thirty companies located in Bucharest. The investigation was performed on-line, by means of a questionnaire sent by e-mail.

The companies that filled in the questionnaire came from a diverse range of fields of activity: consultancy, FMCG (fast moving consumer goods – dairy products), marketing research, telecommunications, banking, tourism, recruitment & employer branding services, media monitoring and software development. The countries of origin of the respondent companies were: Romania, France, Austria, the United Kingdom and Sweden. As regards the share of employees with higher education this was greater than eighty per cent within all the companies involved in the survey. This highlights the fact that the respondent companies are important recipients of higher education graduates. As consumers of education (Senge, 2000), companies are affected directly by the quality of schooling, because the companies' productivity is influenced by their employees' knowledge and skills, which are shaped by their schooling.

Despite the cliché that there is no significant correlation between the theory and practice, the percentage of answers in favour of the correlation, meaning that the universities' curricula reflect the private sector practices and standards, was high, at the level of forty-two per cent. The majority (eighty-three per cent) of the respondent companies proved to be learning companies that provide training to their employees, whereas only seventeen per cent did not develop training programmes for their employees at all.

All respondents considered that the practical training should take place in the framework of a *business-education partnership*. The programmes mentioned by the companies that develop programmes are: job fair that helps students and recent graduates to find a suitable job for their profile; portal where students can get career advice from professionals in that field; summer internships which include lectures and workshops in the company's field of activity; company tours that imply entering the company and taking part in the activities of each department; practice stages under the guidance of professionals from the company; trainee programmes within specific departments.

The ageing of the population is a concern in Romania. Traditionally, there is a misconception that age and productivity are negatively correlated and that the ability to acquire new skills may disappear with age. Romania has a strong tradition of family responsibility for children and care for elderly. There is a demographic imbalance, which brings about problems for retirement systems, but it is not just a matter of financial pressures from retirement and pension systems. In developed nations, volunteer organizations provide a range of services to assist mostly the elderly. In Romania, local organizations supported by international NGOs have started to develop similar, cost-effective community services. But these are just at the beginning.

2.9.2. Romanian international student mobility

In the last seventeen years, emigration has started to be a serious problem, as people counteract the lack of opportunities in Romania by migration. Moreover, it is the skilled and young who are the most likely to move abroad and, unfortunately, they usually choose permanent migration (Păunescu, 2003). It is not a surprise that the number of Romanian students that migrate towards Western educational systems, without ever coming back home, is constantly increasing.

Student and teaching staff exchange programmes were set beginning with 1991 within the *TEMPUS programme* between Romanian universities and universities in EU countries. Higher education institutions in Romania have been involved in *SOCRATES* and *LEONARDO da VINCI* programmes, as of 1997. Starting with 1998, Romanian universities have taken part in projects developed within the *CEEPUS Programme (Central European Exchange for University Students Programme)* that promote student mobility for full academic studies, master and PhD programmes, as well as exchanges between teaching staff and researchers. The *National Office for Student Grants Abroad* was created in January 1998. It manages grants through which the Government of Romania supports Romanian students, in order to study abroad for relatively short periods of time.

In 2004, out of those Romanian students who chose to study abroad (Table 11), twenty per cent went to France, eighteen per cent to Germany, fourteen per cent to the USA, thirteen per cent to Hungary, seven per cent

to Canada, five per cent to Italy, three per cent to the United Kingdom, and two per cent to Spain, Switzerland, Austria, and Belgium.

Table 11. Most important host countries of Romanian students (benefiting from international mobility programmes)

Country	per cent
France	20
Germany	18
U.S.A.	14
Hungary	13
Canada	7

Source: Vass A., 2007.

Romanian student mobility was mainly financed by scholarships (*e.g.*, *Erasmus*, *Raiffeisen*, *ONBSS*, etc.) and, very little, by loans. It seems that now only two banks in Romania grant loans for university studies abroad: *HVB* *Țiriac* and *Transilvania Bank* (Dobre, 2007). Private expenses were also among the sources of finance.

At the same time, students from various EU countries have studied in Romania. Foreign students who wish to study in Romania are admitted at higher education institutions provided that they pay tuition fees, without entrance contest, if they prove to have the qualification necessary to access higher education in their home country. The percentage of foreign tertiary students of all tertiary students in Romania has diminished from 2.78 per cent in 2000 to 1.54 per cent in 2004. The main countries of origin have been the Republic of Moldova (forty-three per cent), Greece (nine per cent) and Ukraine (6.5 per cent). The percentage of students (ISCED level 5 and 6) studying in another EU-27, EEA or candidate country as a percentage of all students has increased in Romania from 1.5 per cent in 2000 to 2.4 per cent in 2004, and 2.3 per cent in 2005 (Commission of the European Communities Brussels, 2007, p. 137). The inward and outward of Erasmus students in 2004/2005 and corresponding 2005/2006 for Romania include:

- Students sent: 2,962 in 2004/2005 to 3,261 in 2005/2006;
- Students received: 602 in 2004/2005 to 653 in 2005/2006;

- Per 1,000 students (sent/received) in 2004/2005: 4,320 (students sent) and 0.88 (students received).

More and more programmes are offered in foreign languages in Romania, especially in English. If a foreign student has started a programme in his/her home country or in another country, she/he may continue it in Romania, after recognition of her/his diplomas and after an analysis of the segment of programme followed. *The National Centre for Recognition of Diplomas*, a structure affiliated to the *ENIC/NARIC Networks*, functions within the *Ministry of Education, Research and Youth*. There is a simple axiom afferent to brain drain, stating that the receiving country benefits from the capitalization of the foreign talents whereas the sending country faces the loss of the value added that could have been directed towards the society's development. This applies in the event of students not coming back to their home country. But, provided that a change paradigm is performed within the higher education system, brain drain could be easily turned into a *brain gain*.

Final remarks

Due to demographic shifts, there will be a high competition among higher education institutions in order to attract students from all the three cycles according to the *Bologna Process*. Universities should strongly differentiate themselves to prospective students, in order to be selected. This could be done by providing very competitive educational packages in line as much as possible with the high European standards.

A reduction in the number of young people in Romania does not mean that their access to the labour market will be facilitated. Factors such as education and suitable skills will be essential in securing stable employment. It is of vital importance to provide quality education for young people, thereby meeting the needs of the labour market and of a knowledge-based society.

In the context of *an ageing society* it is also very important to develop *lifelong learning*. International student mobility has also to be taken into account by policy-makers in the Romanian higher education system.

3. From Challenge to Opportunities

As illustrated in the previous sections, Romania is facing and will continue to face significant demographic shifts (declining fertility and birth rates, longer life expectancy and new patterns of migration) that will affect the mid-term, but mostly the long-term higher education enrolments. Yet the issue of demography is receiving only minimal or short-sighted attention among decision-makers in the Romanian education system both at political and institutional level.

The existing higher education institutional policies in Romania do not seem to be effectively related to the demographic shifts.

How demographic shifts are expected to affect higher education enrollments? The demographic challenge of diminishing fertility and birth rates requires that each higher education institution (HEI) should focus more on finding new tools in order to sustain the attractiveness of their institution. An increasingly ageing population also requires a special focus on *lifelong learning perspective (LLL)*.

The key areas of interest for Romanian higher education policy-makers would be:

- Increasing the attractiveness and wide access to higher education;
- Better university management and alternative financing systems;
- Employability and career development perspectives;
- Meaningful lifelong learning (LLL);
- Student mobility and brain circulation;
- Challenges of multiculturalism, intercultural sensitivity in a global knowledge-based society.

3.1. Attractiveness and wide access

Romanian HEIs need to raise their attractiveness. In order to do so and ensure a wide access a range of practices have to be identified. Some of them shall be discussed here.

Considering the standard entrance age to higher education (eighteen to nineteen years), for attracting more students HEIs could initiate a sort of

“junior” university courses (both in a formal, informal and non-formal way). These would be courses or other more flexible ways of marketing, and promoting a HEI’s *“brand,”* such as summer schools especially dedicated to preparing or motivating young people to take an interest in becoming a student at that higher education institution. HEIs may target specific secondary schools in order to attract the best students and to establish a long-term effective partnership between secondary and tertiary institutions. Attention should be also given to foreign students mostly by *e-marketing* and *e-branding* tools and by developing international networks for teachers and student exchanges.

If we look at the end of the age spectrum, *“senior” university* courses would also contribute to the diversification of the educational offer, mostly in terms of LLL and alternative financial sources.

These might include participation in *computer-based learning & online Internet-based web education, e-learning* courses by the use of LMS (*learning management systems*), etc. A more inclusive higher education system might enlarge access to HEIs, particularly for people with disabilities and/or from rural areas.

We expect that some of the HEIs will try to adopt and find *creative, efficient and effective* solutions. Some of them may merge; some other may even close, but many can also be expected to diversify their educational offer and target different student profiles. In order to increase students’ trust in the career and employment opportunities after graduation, HEIs would have to develop partnerships with the business sector. Some might even think of becoming *entrepreneurial universities*. Lifelong learning agendas will also challenge institutions to re-orient provisions and to enable a broader range of individuals to fulfill their potential in terms of *career management*.

Flexible admission policies and *customized learning paths* are of growing importance. Promoting the attractiveness of HEIs would be made easier as the transparency and comparability of Romanian higher education degrees is made real by the development of a framework of qualifications. Competitiveness in Romanian higher education aims at developing diverse, quality, efficient, effective and well-performing universities. Competition should not be necessarily seen in opposition to cooperation. An academic cooperation, through networks and common projects (including R&D

projects) that would strengthen critical mass of quality higher education institutions, can largely increase the competitiveness of Romanian higher education system.

Attractiveness is a broader concept than competitiveness, since it extends to non-economic aspects as well.

Attractiveness of HEIs can be reached by ensuring and improving the quality of education and research and by developing a good international network of co-operation with various partners.

Raising attractiveness of HEIs requires major transformations such as:

- *More flexibility and openness*: if Romanian universities are to become more attractive locally and globally, profound curricular revision is required – not just to ensure a higher level of academic content, but also to respond to the changing needs of labour markets;
- *Learning needs to encompass transversal skills* (communication, teamwork and entrepreneurship) in addition to specialist knowledge;
- *Interdisciplinary approaches* need to be strengthened;
- The potential of *ICT* should be fully exploited in teaching/learning (*distance learning, e-learning*), including special practices for *lifelong learning (LLL)*;
- Diversify the continuing training offer for teachers and increase the quality of the training offer by encouraging competition between training programmes. Focus will be on: constructivist vision; task-oriented and problem-solving methods; learner-centered curriculum by which students are activated and could become responsible for their own learning, competence based curriculum plan, etc;
- Romanian higher education institutions are slowly moving away from a system of *teacher-driven provision* towards a *student-centered* concept of higher education. The reforms of Romanian higher education system require a more flexible respond to a growing variety of student needs;
- Developing further some of the *Bologna tools*: *ECTS, Diploma Supplement* and *Qualifications Frameworks*. According to the need of re-structuring the curricula, and to develop flexible learning paths for

students, HEIs have to take responsibility for driving the development of ECTS in a way which enables them to respond effectively to the challenges of an open Romanian university integrated within *the European Higher Education Area (EHEA)*.

A related challenge to attractiveness is to develop further the processes of *quality assurance* within systems and institutions.

3.2. *Better internal university management and alternative financing systems*

Most Romanian higher education institutions also have to cope with increasing budgetary constraints. In order to modernize Romanian universities, we consider that it is important to allow universities greater autonomy and accountability and review funding systems in order to make them more focused on „outputs”. Romania has the largest percentage (ninety-eight per cent) of teaching professionals who agree that universities are in need of a better internal management. Romania is followed by Bulgaria (ninety-six per cent) and Italy (ninety-four per cent) (European Commission, 2007). Better internal university management is also connected with the quality assurance process, which is a necessity at the moment, since relatively few HEIs seem to take a holistic approach to quality improvement.

There is also a need for supporting partnerships with businesses that will reinforce universities. Romanian universities have to develop partnership with the business sector. As illustrated in section 2, it seems that the higher education system still gives preference in training to theoretical knowledge rather than practical skills. Ninety-three per cent of Romanian teaching professionals are likely to agree that partnerships with businesses will reinforce universities.

By developing effective and efficient partnerships between universities and business (including, where the case, the new perspective of an entrepreneurial university) would contribute to a substantial increase of HEIs' attractiveness, that has a significant importance for graduates employability and career development perspective.

3.3. *Employability and career development perspective*

Romania's education system should be strengthened in order to maintain and upgrade the country's human capital at the same time with further development of active labour market policies including education and training programmes. In line with this perspective, some priority areas were identified, where progress is needed and where monitoring should be carried out also in the context of Romanian Employment Policy: improve the adaptability of the higher education system to the long-term needs of the labour market; develop capacity for training unemployed people; encourage employers to invest in people and skills.

Flexible and modernized curricula should be created and developed at all levels, which correspond to the needs of the labour market. Changing the life cycle and lifestyle patterns in Romania, due to a more longevive population, will require also refocusing curricula to allow greater participation at later stages of the life cycle. A changing mentality is needed. Study and training programmes should encompass more generic competences (communication, teamwork and entrepreneurship). It has been found that the highest percentages of respondents who agree that study programmes need to be changed to answer better the needs of labour market and the knowledge-based society and economy is in Turkey (ninety-seven per cent), followed by Romania (ninety-one per cent), Slovakia (eighty-nine per cent) and Bulgaria (eighty-nine per cent). Eighty-two per cent of Romanian teaching staff think that more opportunities should be created for joint degrees at the Bachelor and Master level, while fifty-four per cent agree that joint degrees should also be promoted at PhD level.

This supports also the idea of a *trans- and interdisciplinary approach* in the Romanian higher education system.

Employability seems to be a high priority in the reform of curricula in all cycles. However, there is still much to be done to translate this priority into institutional practice.

Romanian higher education institutions should be more responsive to the needs of a changing knowledge and innovation-based society and to the corresponding changes that take place on the labour market. In order to get close to the European employment targets set for 2010 (an overall employment rate of seventy per cent, of which sixty per cent for women

and fifty per cent for workers aged fifty-five to sixty-four), Romanian people have to be enabled and encouraged to spend more time in employment (there is also an ambitious European target to increase the effective retirement age by five years) and in school over their life cycle (LLL).

3.4. *Meaningful lifelong learning (LLL)*

The combined effects of a decline in birth rates and a rapid increase in the ageing population produce fundamental changes in Romanian society. HEIs need to think of *lifelong learning* as a core mission. Thus they need to develop further their strategies and activities in the field of lifelong learning. Higher education institutions have a major role to play in giving substance to the rhetoric of lifelong learning. As a result, important changes in the relative amounts of time that people spend on education, paid work, unpaid house work, care and leisure are expected, and this means *a new paradigm over intergenerational relations, life cycle and lifestyles*.

In Romania there is a need to promote *an age management policy* with an age specific re-design of education, jobs and work systems, allowing people to work and learn beyond the mid-1960s.

The challenge is to remain active and engaged in a healthy lifestyle as much as possible and even after retirement. Good practices in age management require promoting a life cycle orientation to cover a variety of actions such as: learning, training, lifelong learning, career development, flexible time practices, health protection, job recruitment, etc. Active ageing policies must be sensitive to differences in gender since there are important differences in the health risks between women and men when they get older.

As a trend, it is expected that, in order to design and implement more specific measures for age management, the future focus would be on training and skill development under the umbrella of LLL. We do not expect in the near future for Romania to implement projects such as the 'universities of the third age' (www.u3a-info.co.uk). But we expect actions in line with LLL. Effective training measures are needed since "old" people will mostly need to feel involved.

Demographic changes and mostly those that are reflected in changes in life cycles and lifestyles challenge the viability of traditional time use arrangements. Most of the economic, social, cultural, political and demographic changes that took place in Romania ask to redefine traditional family and social structures and intergenerational relationships. Policy adjustments and mostly HEIs policies adjustments are needed to reflect the new realities. A change of mentalities is strongly needed in Romania and LLL has an important role in this respect. Almost all the stages in the life cycle are tracked from early childhood to stages late in the working life.

Promoting new policies with a life cycle orientation in Romania asks to underline the important role of LLL. This role is connected to the principal aims of lifelong learning in Romania:

- to build *an inclusive society* which offers equal opportunities for access to quality learning throughout life to all people, based mostly on the needs and demands of individuals;
- to adjust the ways in which education and training is provided and at the same time to ensure that people's knowledge and skills match the changing demands of jobs and occupations;
- to encourage people to participate in all spheres of modern public life, especially in social and political life at all levels of the community.

Non-formal and informal education offers are still poor in Romania. In order to support their development there are some major courses of action needed, such as: developing *extra-curricula and out-of-school activities* in the context of the formal curriculum; social recognition of youth non-formal activities, especially within civil society.

Lifelong learning (LLL) has to be a priority of education and training policies in Romania such as it is on the European Agenda. However, despite some favourable evolutions, Romania still lacks an integrated LLL policy.

To give LLL a higher priority and relevance, it is necessary to outline means to reach the LLL targets for Romania. As a country involved directly in the Bologna Process, Romania has to get close to the European target for LLL in 2010 that is 12.5 per cent. Corresponding Romanian policy-makers established a target for Romania of seven per cent that represents a

significant increase as compared to the present level of 1.6 per cent, the lowest level in Europe (Eurostat, 2006).

3.5. International student mobility

As illustrated in section 2, outgoing and incoming student mobility has increased in most Romanian universities. However, there is a clear imbalance of outgoing over incoming students. Although there are still major deficits in capturing reliable information on student mobility, brain drain versus brain gain, many Romanian higher education institutions have a general perception that student mobility is increasing.

In terms of mobility flows, there is evidence that many Romanian higher education institutions would continue to “export” more students and staff than they are “importing”.

Nearly sixty per cent of the teaching staff at higher education institutions in Romania are likely to state that mobility should be an obligatory part in the curriculum for students in general; sixty-five per cent of the teaching staff in HEIs consider that mobility should be obligatory also for PhD candidates. Romanian HEIs, both public and private, have to make constant efforts to support the European dimension of academic collaboration, mobility of students, joint teaching and research programmes (academic mobility).

In order to stimulate student and academic staff mobility, HEIs need to promote further programmes of teacher and students exchange with national and foreign universities and to increase transparency and expand access to the system of mobility grants.

Moreover, a paradigm shift is needed also in Romania in the way brain drain is perceived. The idea is to move away from the negative concept of brain drain and start talking about “brain circulation”.

Many of the global gains from migration – the creation and transfer of knowledge, the emergence of a skilled and educated workforce – can be shared to some extent by countries on both sides of the equation. That could be valid for Romania, too – mostly under the auspices of the “virtual participation” that is now made easier through interactive technology that facilitates knowledge sharing (for instance e-learning) as well as the conversion of specialized expertise into economic, social and cultural

capital. We can think of some Romanian Diaspora networks' that might offer a major opportunity to transform brain drain into 'brain gain'.

3.6. Challenges of multiculturalism. Intercultural sensitivity in a global knowledge-based society

On its road towards a knowledge-based society and economy, Romania has to focus on the broader challenges of multiculturalism: globalization, interculturalism. It is necessary to provide a framework for *a new type of interdisciplinary dialogue* between emerging disciplines in the region, such as ethnic studies, sociology of childhood and gender studies.

Some of the Romanian universities have now experience with multilateral consortia and are involved in joint courses or double degree arrangements. This will, however, only be possible if Romania makes a serious effort to promote the quality of its universities, and to increase their attractiveness and visibility worldwide. The complex area of mutual recognition of higher education's qualifications should be also addressed. As a particularly good case of international cooperation in which Romania is involved, the Francophonie cooperation, encompassing both members and non-members of the Bologna Process, illustrates the great potential for cooperation between groups of countries. Romania also needs to strengthen its alumni-networks worldwide.

Last but not least, a network of ambassadors of Romanian higher education promoters in major third countries could be established. Romania has some tradition in this respect.

3.7. Final remarks

HEIs have to start taking actions regarding demographic challenge. There is a need to shift from rhetoric to action and from demographic challenge to opportunities.

Suggested actions can be grouped into two broad categories:

- actions addressing the traditional age group of young students (nineteen to twenty-three years old);

- actions addressing other categories such as adult people (LLL) and foreign students.

Actions are intended mostly:

- to attract towards HEIs virtually all potential learners (under a social inclusion perspective);
- to keep students within HEIs, by strengthening Romanian higher education institutions quality and increasing HEIs capacity to ensure a better management;
- to give them strong reasons to come back to education almost at any time in all their life (LLL) and by fighting old mentalities and promote new lifestyles that will bring back adult and elderly people to universities by means of formal, informal and non-formal learning activities under the umbrella of lifelong learning.

4. Conclusions and Recommendations

The future demographic landscape of Romania is a somber one, having its origins in the long-term consequences of the past, forced and brutal pro-natalist policy, the political, economic and social deep changes of the transition period, the mistakes and even the lack of political will in managing the building of a democratic society. The increase of mortality and the huge external labour migration are the direct consequences of this reality. The decline of fertility and birth rates have more complex causes and mechanisms, but the economic and social crisis has certainly amplified the dimension of downward trends.

As has been mentioned in Section 1, the size of the population aged nineteen to twenty-three years was 2.1 million in 1990, and reached 1.7 million in 2006 and will decrease to one million only by 2025. This last figure has no association with the potential magnitude of birth cohorts to be born in the coming years, as it will be composed by cohorts born between 1990 and 2006. If the fertility level during the next few decades will preserve its present low level, the population aged nineteen to twenty-three years will reach 700,000 only by 2050. What strategies and means should be conceived and implemented to reduce the negative impact? A few may be advanced.

The Romanian education system is now at a turning point. The economic and social changes the Romanian society is experiencing and the occurrence of the first effects of the change in population age structure could explain the situation.

4.1. Main findings regarding the Romanian higher education system and the challenges of the demographic shifts

Romania has experienced a considerable increase in student numbers over the last seventeen years but, unfortunately, it was not always possible to maintain high standards of quality regarding teaching and learning.

Despite a recent improvement, the higher education system still has serious problems mostly in terms of attracting funding to support reform and development. Corporate and other sectors have a weaker relationship with the higher education institutions.

Romanian HEIs face also a scarce management capacity and institutions building capacity.

LLL is not developed enough and Romania is far away from the average European target of 12.5 per cent established by the Lisbon Agenda for 2010.

Romanian HEIs are not marketing themselves abroad well enough in order to attract students mostly from non-EU countries.

4.2. Challenges and opportunities ahead the Romanian HEIs facing demographic shifts

There is a need for a clear vision, strategy and an appropriate mix of policies to take seriously into account the expected demographic challenges.

HEIs have to focus on restructuring and development in line with the European Higher Education Area (EHEA) in the context of a global knowledge-based economy and society. Romanian higher education policy will have to support co-operation by developing geographically and functionally meaningful clusters and networks of excellence with a shared mission that will build greater institutional strength for higher education in Romania as part of the EHEA. These clusters might develop administrative, functional, research and subject based co-operation. This is an important

turning point, HEIs being defined less as individual institutions and more as *networks of excellence*.

HEIs have to commit themselves to provide higher education for all those who have the ability to benefit from it. HEIs have to be able to progressively attract more students from disadvantaged communities and marketing themselves more effectively both at home and overseas. By using e-learning and other ITC efficiently there should be a broadly geographic spread of provision of higher education across Romania that will better reflect the regional needs of local communities.

The Romanian higher education system has to become a diverse sector with a clear vision, an explicitly defined strategy, goals and targets. Priorities and principles have to be identified within HEIs' strategies both in the short-term, mid-term and long-term. They will have to include broader issues such as: long-term sustainability to counter-balance demographic challenges, social inclusion, equal opportunities and the development of multicultural and intercultural sensitivity in the content of a global knowledge-based society. Each HEI will have to protect its academic freedom to specialize in subjects according to their missions, ensuring that there is a responsive and appropriate coverage of subjects at the local, regional and national level.

The future success of the higher education system regarding the expected demographic trends, both in the mid-term and long-term, will depend mostly on the excellence of its results (education-research-innovation); strength of its reputation (marketing promotion would be important); and, the quality of its engagement with the community, its partners in business that might strength its profile locally, nationally and internationally.

Each HEI has to aspire to *quality and performance* variously through teaching, research, community involvement in line with network, cluster and partnership perspective.

Romanian higher education institutions need to adopt a more *learner-centered* and *customized learning* approach such as to bring people later back to school, mostly adults and even the elderly, since, from a demographic perspective, an ageing population would be a real challenge for HEIs.

In the light of national and international needs, we believe that the aim of higher education should be to support Romania in becoming a learning society by sustainable LLL investment in education.

The demographic factor will have a considerable impact on the future of higher education and its multiple consequences. Diminishing these consequences is the big challenge for the politicians, professionals and of the entire Romanian society.

References

- ANDREI, T., TUȘA, E. and HERȚELIU, C. 2006. The Perception of Gender Discrimination at the Level of Young Educated Romanians – A Quantitative Approach. *Journal for the Study of Religions and Ideologies*, 14, pp. 51-62.
- BOGOI, L. and BURTOIU, C. 2007. *Long-run Partnership: Universities – Private Sector* [Presented at the] *ASE Students' Scientific Research Session*, April 2007, Bucharest.
- CAMPBELL, F. 2006. The Bologna Process and Higher Education in the Context of Europe and Globalization. [Presented at the] *Bologna Process Official Seminar "The Cultural Heritage and Academic Values of the European University and the Attractiveness of the EHEA"*. Vatican City, 30 March – 1 April, 2006.
- COMISIA NAȚIONALĂ PENTRU STATISTICĂ (Romania). 1994. *Recensământul populației și locuințelor din 7 ianuarie 1992, Vol. I – Populație – Structura demografică; Vol. II – Populație – Structura socio-economică, Vol. III – Clădiri, Locuințe, Gospodării* [Population and Housing Census of 7 January 1992, Vol. I – Population - Demographic Structure; Vol. II – Population-Socioeconomic Structure; Vol. III – Buildings, Houses, Households]. Bucharest: CNS.
- COMMISSION OF THE EUROPEAN COMMUNITIES. 2007. *Progress Towards the Lisbon Objectives in Education and Training Indicators and Benchmarks*. Brussels: CEC. (Commission Staff Working Document SEC(2007) 1284).
- , 2006. *Progress Towards the Lisbon Objectives in Education and Training. Report based on Indicators and Benchmarks*. Brussels: CEC (Commission Staff Working Document, SEC(2006) 639).
- , 2003. *The Role of the Universities in the Europe of Knowledge*. Brussels: EC.
- COUNCIL OF EUROPE. 2006. *Recent Demographic Developments in Europe – 2005*. Strasbourg: CE.
- DARVAS, P. 1998. The Future of Higher Education in Central-Eastern Europe: Problems and Possibilities. *European Review* 6 (4), pp. 44-52.
- DINCĂ, G. and DAMIAN, R. 2005. *Financing of Higher Education in Romania*, Bucharest: Editura Alternative.

EUROPEAN COMMISSION. DIRECTORATE-GENERAL FOR EMPLOYMENT, SOCIAL AFFAIRS AND EQUAL OPPORTUNITIES.

UNIT E1. 2003. *Council Resolution on Social and Human Capital — Building Social and Human Capital in the Knowledge Society: Learning, Work, Social Cohesion and Gender*. Brussels: EC.

-----, 2004. *Education and Training 2010 – The Success of the Lisbon Strategy Hinges on Urgent Reforms*. Brussels: EC.

-----, 2006. *The Demographic Future of Europe, From Challenge to Opportunity*. Brussels: EC.

EUROPEAN COMMISSION. DIRECTORATE-GENERAL FOR EDUCATION AND CULTURE. 2001. *Making a European Area of Lifelong Learning a Reality*. Brussels: EC.

-----, 2003. *Implementing Lifelong Learning Strategies in Europe: Progress Report on the Follow-Up to the 2002 Council Resolution. Reply to the Commission Questionnaire*. Brussels: EC. (Lifelong Learning Policy Development).

-----, 2004. *Education and Training 2010 – The Success of the Lisbon Strategy Hinges on Urgent Reforms*. Brussels: EC.

-----, 2005a. *Implementing the Education and Training 2010. Work Programme, Progress Report, Romania*. Brussels: EC.

-----, 2005b. *Study on the Returns to Various Types of Investment in Education and Training*. Brussels: EC (Projects in Economics of Education).

-----, 2006. *Progress Towards the Lisbon Objectives in Education and Training*. Brussels: EC (Commission Staff Working Document).

EURYDICE. 1997. *Supplement to the Study on the Structures of the Education and Initial Training Systems in the European Union: The Situation in Bulgaria, the Czech Republic, Hungary, Poland, Romania, and Slovakia*. Brussels: EURYDICE.

GALLUP ORGANIZATION. 2007. *Perceptions of Higher Education Reforms. Survey Among Teaching Professionals in Higher Education Institutions in the 27 Member States, and Croatia, Iceland, Norway and Turkey. Flash Eurobarometer 198*. Brussels: EC.

GHETĂU, V. 2007. *The Population Decline and the Future of Romania's Population*. Bucharest: Alpha MDN Publishing House.

ISTRATE, G. M. 2006. Gender Statistics by Life Cycle Stages in Romanian Time. Use Survey. [Presented at the] EUROSTAT Seminar on Time Use Surveys, 12 October 2006, Brussels.

- LANZIERI, G. 2006a. *Long-Term Population Projections at National Level*. Statistics in Focus. (Population and Social Conditions, 3). Luxemburg: EUROSTAT.
- , 2006b. Population in Europe 2005: First Results. Statistics in Focus. (Population and Social Conditions, nr.16). Luxemburg: EUROSTAT.
- MESLÉ, F., VALLIN, J. and ANDREYEV, Z. 2002. Mortality in Europe: the Divergence Between East and West. *Population*, 57(1), pp. 157-197.
- MIHĂILESCU, I. 1998. *The System of Higher Education in Romania*. Bucharest: Editura Alternative.
- MIROIU, M. 2003. *Guidelines for Promoting Gender Equity in Higher Education in Central and Eastern Europe*. Bucharest: UNESCO-CEPES.
- MIRON, D. 2007. Romania In: *Bergen to London 2007. Secretariat Report on the Bologna Work Programme 2005-2007*. London: Department for Education and Skills.
- OPRE, A. and OPRE, D. 2005. The Gender Stereotype Threat and the Academic Performance of Women's University Teaching Staff. *Journal for the Study of Religions and Ideologies* 14, pp. 41-50.
- PĂNESCU, C. A., 2003. *Brain Drain and Brain Gain: A New Perspective on Highly Skilled Migration*. Bucharest: Ministry of Foreign Affairs.
- ROMAN, M. 2006. Gender Difference in Allotting Leisure Time in Romania. *Journal for the Study of Religious and Ideologies*, 14, pp. 63-73.
- ROMANIA. COMISIA NAȚIONALĂ PENTRU STATISTICĂ (CNS).1994. *Recensământul populației și locuințelor din 7 ianuarie 1992, Vol. I – Populație – Structura demografică; Vol.II – Populație – Structura social-economică, Vol. III – Clădiri, Locuințe, Gospodării* [Population and Housing Census of 7 January 1992, Vol. I – Population - Demographic Structure; Vol. II – Population-Socioeconomic Structure; Vol. III – Buildings, Houses, Households]. Bucharest: CNS.
- ROMANIA. INSTITUTUL DE ȘTIINȚE ALE EDUCAȚIEI (ISE) (Romania) 2001. *Lifelong Learning – A Priority of Educational Policies in Romania. Survey on Key Messages of EC Memorandum on Lifelong Learning*. Bucharest: ISE.
- ROMANIA. INSTITUTUL NAȚIONAL DE STATISTICĂ (INS). 2003. *Characteristics of Lifelong Learning as an Additional Module to “Survey on Household Labourforce (AMIGO)”*.
- , 2005. *Recensământul Populației și al Locuințelor 18 martie 2002, Vol. I – Populație – Structura demografică; Vol. II – Populație – Structura social-economică; Vol. III – Clădiri, Locuințe, Gospodării* [Population and Housing Census of 18 March 2002. Vol. I: Population-Demographic Structure; Vol. II:

Population-Socioeconomic Structure; Vol. III: Buildings, Houses, Households]. Bucharest: INS. (In Romanian)

- , 2006a. *Anuarul demografic al României* [Demographic Yearbook of Romania]. Bucharest: INS. (In Romanian)
- , 2006b. *Migrația externă în anul 2006* [External Migration in 2006]. Bucharest: INS. (In Romanian)
- , 2007a. *Mortalitatea în anul 2006* [Mortality in 2006]. Bucharest: INS. (In Romanian)
- , 2007b. *Natalitatea în anul 2006* [Natality in 2006]. Bucharest: INS. (In Romanian)
- , 2007c. *Populația României la 1 iulie 2006* [Romania's Population on July 1st 2006]. Bucharest: INS. (In Romanian)
- , 2007d. *Proiecția populației școlare 2005-2025*. [School-age Population Projection 2005-2025]. Bucharest: INS (In Romanian).
- , 2007e. *Schimbări de domiciliu în anul 2006* [Changes of Permanent Residence in 2006]. Bucharest: INS. (In Romanian)
- ROMANIA. MINISTERUL EDUCAȚIEI ȘI CERCETĂRII (MEC). 2005a. *Raport asupra stării sistemului național de învățământ* [Report on the State of the National System of Education]. Bucharest: MEC.
- , 2005b. *Romania: National Report Lisbon Process 2002 – 2004*. Brussels: EC (Implementing the “Education and Training 2010” Work Programme. Progress Reports).
- ROMANIA. MINISTERUL MUNCII, FAMILIEI ȘI EGALITĂȚII DE ȘANSE (MMFES). 2007. *Formarea profesională continuă în procesul dezvoltării tehnologice din economia românească* [Lifelong Professional Learning within the Process of Technological Development of Romanian Economy]. Bucharest: MMFES.
- SADLAK, J. 1995. In Search of the ‘Post-Communist’ University – The Background and Scenario of the Transformation of Higher Education in Central and Eastern Europe. In: K. Hüfner. *Higher Education Reform Processes in Central and Eastern Europe*. Frankfurt: Peter Lang.
- SCHOENMAEKERS, R. and KOTOWSKA, I. 2005. *Population Ageing and its Challenges to Social Policy Population Studies*, 50. Strasbourg: CE.
- SCHOTTE-KMOCH, M., ASSUNÇÃO, M., BRACKE, L., MIARITI, Z. and OLLIKAINEN, A. 1999. *A European Strategy: Higher Education Policy Statements of Institutions in Central and Eastern Europe in Comparative Perspective*. Geneva: CRE.

- SENGE, P. M. 2000. *Schools That Learn: A Fifth Discipline Fieldbook for Educators, Parents, and Everyone Who Cares About Education*. New York: Doubleday/Currency.
- SUCIU, M. C. 2000. *Investiția în educație* [Investing on Education]. Bucharest: Editura Economică (In Romanian).
- UNESCO INSTITUTE FOR STATISTICS (UIS). 2006. Education Counts: Benchmarking Progress in 19 WEI Countries World Education Indicators – 2006. Montreal: UIS.
- UNITED NATIONS. ECONOMIC COMMISSION FOR EUROPE (UN ECE) *Economic Survey of Europe*, Vol. 1, New York, Geneva: UN.
- , 2000. *Economic Survey of Europe*, Vol.1. New York, Geneva: UN.
- , 2002. *Economic Survey of Europe*, Vol.1. New York, Geneva: UN.
- UNITED NATIONS POPULATION DIVISION. 2007. *World Population Prospects. The 2006 Revision*. New York: UN.
- VALLIN, J. and MESLÉ, F. 2004. *Convergences and Divergences in Mortality*. Rostock: Max Planck Institute for Demographic Research (New Approach to Health Transition. Demographic Research, Special Collection 2).
- , 2001. Trends in Mortality in Europe since 1950: Age, Sex and Cause Specific Mortality. In: *Trends in Mortality and Differential Mortality*. Strasbourg: CE (Population Studies, 36).
- VAN DE KAA, DIRK, J. 1987. Europe's Second Demographic Transition. *Population Bulletin*, 42(1). Washington: Population Reference Bureau.
- VASS, A. 2007. Romanian Brain Drain between Risks and Opportunities. *Financial Market*, April 2007, pp. 78-80.
- WORLD HEALTH ORGANIZATION. REGIONAL OFFICE FOR EUROPE. 2006. *European Health for All Database (HFA-DB)*, table A. www.euro.who.int/hfad (Accessed 22 February 2008).
- WROBLEWSKA, V. 2006. Changing Mortality Patterns in Central European Countries. Poland's Experience. [Paper presented at the] *International Seminar Mortality in Countries of the Former USSR. Fifteen Years After Break-up: Change or Continuity?* 12-14 October 2006, Kiev. www.iussp.org (Accessed 22 February 2008).

Demographic Challenges and Risks for Russian Higher Education

Mark AGRANOVITCH and Sergey VASIN

1. The demographic situation and demographic trends in Russia

The demographic situation in Russia has, in an international comparison, some similarities, while also showing a number of national specificities. Some of these most pertinent aspects and their impact on higher education will be discussed in this paper. Concerning fertility, today more and more Russian families are limited to one child, less men and women form legally registered marriages, the number of extramarital children is growing, marriages and child births are increasingly postponed until a later age. The most recent sample surveys show that the practice of time planning of the first-born arrival has eventually become widespread in Russia. These shifts in marital and reproductive behaviour might testify to the hypothesis that changes similar to those that take place in the countries entering the so-called “second demographic transition” are taking place in Russia. The lengthening of the time spent in education has been playing an important role in the delay of nuptiality and the declining fertility in the countries which have undergone this transition. However, abortions, still prevalent in Russia, add to such shifts in the reproductive cycle.

There is an evident connection between life expectancy and life cycle. An individual is developing one's life plans in many respects on the basis of one's implicit conception of the horizon of a life course and behaves in line with it. A short span of the life ahead (the relative closeness of the horizon) is not favourable for an investment in additional education. As will be shown in the paragraph on life expectancy trends, Russia differs from the majority of the developed countries by its very high mortality of adult population.

1.1. Population and population change

At the beginning of the 1990s, Russia entered a phase of population loss. Reaching its historical maximum at the beginning of 1993, the total size of the population started to decline dramatically and at an increasing pace (Table 1) so that between 1993 and 2006 the total population decreased by 5.76 million. The population decrease would have been even more pronounced without the rise of net migration during this period.

Table 1. Components of the total population size changes (in thousand)

Selected years	Population, beginning of the year	Annual change			Total annual increase, per cent	
		total increase	natural increase	net migration		
						due to changes in a settlement's category
Total population						
1990	147665,1	608,6	333,6	275,0		0,4
1993	148561,7	-205,8	-732,1	526,3		-0,1
2000	146890,1	-586,5	-949,1	362,6		-0,4
2005	143474,2	-720,7	-846,6	125,9		-0,5
Urban population						
1990	108736,2	668,9	245,8	349,2	73,9	0,6
1993	108668,4	-363,6	-553,6	260,4	-70,4	-0,3
2000	107419,5	-347,8	-674,9	365,2	-38,1	-0,3
2005	104719,3	-614,5	-558,9	148,5	-204,1	-0,6
Rural population						
1990	38928,9	-60,3	87,8	-74,2	-73,9	-0,2
1993	39893,3	157,8	-178,5	265,9	70,4	0,4
2000	39470,6	-238,7	-274,2	-2,6	38,1	-0,6
2005	38754,9	-106,2	-287,7	-22,6	204,1	-0,3

Source: ROSSTAT, 2006, pp. 21-23.

Migration changes, however important they were, have not affected the demographic decline in Russia. However, high mortality is the main feature in rapid population decrease. The entrance into the phase of the demographic decline was accompanied by another important change: since 1996, the natural decline of the rural population has started to exceed the loss of urban population.

Whereas the high mortality of population between 1992 and 2005 adds special scale to the depopulation of the country, the very fast natural

decrease of population of Russia was predetermined by the reproduction mode, which was formed in Russia by 1960's (Vishnevsky, 2005). Net reproduction rate is positioned on the level below 1 from the middle of 1964 (except 1986-1988), *i.e.*, for more than forty years. According to the estimates of S. Zakharov (Vishnevsky, 2007) not a single generation of Russian women born after 1910 reproduced themselves. Thus, the lasting history of low fertility in many respects predetermined today's demographic situation.

According to the medium scenario of the projection prepared by Center of Demography and Human Ecology (CDHE) of the Russian Academy of Science in 2006¹, the depopulation of Russia will continue at least until 2050 (Table 2).

Table 2. Prospective estimates of total population (in thousand)

Selected years	Scenario:		
	Low	Medium	High
2008	141329	141,634	141,654
2020	131,753	138,257	142,420
2030	120,446	131,465	145,170
2040	107,332	126,005	149,358
2050	95,620	123,136	158,542

Source: ROSSTAT 2007; Institute for Demography, [2006, unpublished].

Likewise, as it occurred between 1993 and 2005, the natural loss of population, will be compensated partly by a migration increase.

1.2. Fertility and nuptiality

By the end of the 1980s, the rate of marriages in Russia corresponded to the Eastern European model, which is characterized by little celibacy, early marriage and high marriage rates (Ivanova, 1996). The appearance of the

¹ Three scenarios of this projection offer results very close to the latest published version of the ROSSTAT's projection, but the horizon of CDHE's projection is much longer (2050 versus 2025 as in the case of the ROSSTAT projection). Here and after when we refer to the prospective estimates of populations after 2025 we use the CDHE's projection.

tendency to get married at a later age, under favourable conditions of the marital market, is new for Russia and might be considered as an indicator of the beginning of the second demographic transition (Zakharov, 2006).

The tendency to delay marriage is also confirmed by the census data from 2002. The sharp decline in the number of marriages at and age of less than twenty-five years had been accompanied by an increase in the proportion of extra-marital births, including those followed by the joint parental declaration. Indirectly this is indicated by the increasing expansion of informal partner unions. The census of 2002 confirmed this hypothesis, showing a considerable rise in unregistered partner unions in comparison to the data of the micro census of 1994.

The Gender and Generation Survey (GGS) of the Russian families, that was conducted in June-August 2004 in thirty-two Russian regions and is representative on the national level², provides a more precise view of the spreading of different categories of partner unions. Zakharov (2005) demonstrated that in ages below twenty-five, half of those men and women who have been living together with a partner have constituted an informal partnership. At the same time, an informal partnership usually has features of a trial marriage, that would possibly be registered later on. Like decades before, more than eighty per cent of women still have experienced cohabitation with a partner, but the case of a partnership starting with a marriage registration becomes increasingly rare. Such an evolution of marital relations – when informal unions replace the formal ones – is particular to the group of “North-Western” developed countries, while in the countries of South Europe cohabitation is not yet so widespread, although the mean age of marriage is also rising there (Ivanov, 2002).

The change in marriage relations and in the age pattern of marriage, observed in the developed countries, is determined by the rise of the educational level of the population and by the increase in the duration of acquiring a professional education, *i.e.*, by the process of a rise in human capital. This trend, however, is not applicable to Russia. For some time the

² see <http://www.unece.org/ead/pau/ggp/Welcome.html>; http://www.socpol.ru/research_projects/proj12.shtml; <http://www.mpidr.de> (Laboratory of Contemporary European Fertility and Family Dynamics).

“rejuvenation” of nuptiality was occurring simultaneously with the rising educational attainment of women. On the contrary, in the last intercensal period a decline of this attainment is observed (Vishnevsky, 2006). At the same time, these trends should not be overestimated since they are far less significant than those that occurred not only in the countries of Eastern Europe, but also in the Baltic States.

In spite of the increase in unregistered partner unions, marriage is still dominating in Russia. During the 1990s a considerable worsening of the official divorce statistics took place; sampling surveys provide an insight in the changes in the stability of marriages. According to GGS the proportion of marriages ending in divorce is increasing from one generation to the next. Vishnevsky (2005; 2007) observes an increase in divorced marriages: “During ten years span the share of marriages ended by divorce constituted sixteen per cent of those registered between 1969 and 1973, eighteen per cent of marriages registered between 1979 and 1983 and twenty-three per cent of marriages registered between 1989 and 1993” (ibid).

Concerning fertility, the trend of the crude birth rate from 1990 to 2005 shows a period of decline, which lasted up to 2000, and a period of increase, starting after 1999. From 1990 to 1999, the number of births declined approximately from two to 1.2 million, and increased to 1.5 million afterwards. At first, the changes of the age and sex structure were adverse to the dynamic of the number of births, but from 1994 onwards the influence of the structural factor became positive and especially noticeable in the period from 2001-2005 (Vishnevsky, 2007). Nevertheless, the change in another factor – that of fertility – was of critical importance for the changes in the number of births (Vishnevsky, 2007; Arhangelskii, 2006: 8-11). The fact that the trends in the crude birth rate and total fertility rate (TFR) coincide gives evidence of this.

The TFR levels of 1990 in Russia can be considered high for developed countries. It complies with the upper bound of TFR in this group of countries in between 1980 and 2000. But for just three years it has already dropped to 1.4, *i.e.*, below “the security zone” (Macdonald, 2006). Thus, in 1993 Russia found itself among the countries with low fertility, and six years later – although the decline had slowed down – among the countries with very low fertility. Among forty industrialized countries the same or lower levels were observed in only five countries (Spain, Latvia, Bulgaria, Ukraine, and

Switzerland). It is assumed that the drastic decline which lasted up to 1994 was the consequence of the pronatalistic policy in 1980s: women's generations, influenced by this policy, realized their reproductive plans much earlier, and thus births, which might have taken place in the 1990s, shifted to the 1980s (Zakharov, 2006).

Table 3. Total Fertility Rate

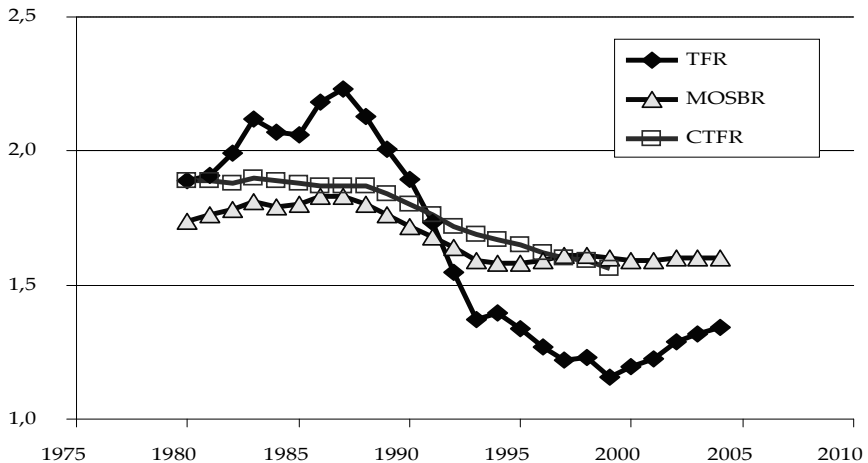
Years	Total population	Urban population	Rural population
1990	1,892	1,698	2,600
1991	1,732	1,531	2,447
1992	1,547	1,351	2,219
1993	1,369	1,200	1,946
1994	1,394	1,238	1,917
1995	1,337	1,193	1,813
1996	1,270	1,140	1,705
1997	1,218	1,097	1,624
1998	1,232	1,109	1,643
1999	1,157	1,045	1,534
2000	1,195	1,089	1,554
2001	1,223	1,124	1,564
2002	1,286	1,189	1,633
2003	1,319	1,223	1,666
2004	1,340	1,247	1,665
2005	1,287	1,197	1,589

Sources: ROSSTAT, 2006, p. 93.

To support this conclusion, Figure 1³ presents changes in the period of the TFR as compared to changes in two other fertility measures which are not influenced by fluctuations in the timing of births (cohort complete fertility rate for the generations born between 1951 and 1975) or are quite resistant to them (mean order of specific birth). Trends and levels of these two measures differ much from the ones of the period of TFR indicating that during the entire period a number of shifts in timing took place.

³ The picture shows the index for real generations within a twenty-nine year interval, hence the complete fertility for women born in 1951 compared with the total fertility rate in 1980 calendar year; birth cohort of 1952 with 1981 calendar year and so on.

Figure 1. Changes in the period total fertility rate (TFR), cohort complete fertility rate (CTFR) and mean order specific birth rate between 1980 and 2005 (per one woman)



Source: The Authors.

The reason for the further decline in the period from 1994 to 1999 was a delay of births by the cohorts of women who entered the reproductive age after the effect of the demographic policy of 1980s had declined. The transformation of age fertility pattern points this out.

In addition to changes in birth timing from the late 1980's onwards, a real decline of fertility has taken place. Since 1990, the mean order specific birth has fallen from a level of 1.8 to 1.6.

Changes in marital structure of population of reproductive age have negative effects on fertility levels. The proportion of extra-marital births grew from 14.6 in 1990 to thirty per cent in 2005 (DYR, 2006). However, the concepts of "extra-marital births" and "single mothers" do not coincide. The considerable part of extra-marital births is registered on a basis of joint declaration of the mother and the father (forty-three to forty-six per cent). But even when birth is registered on a basis of the mother's declaration only, it still does not mean that it occurred out of the partner union. According to

GGS, from 2000 to 2004 only seven per cent of children of the crude number of newborns were born to single mothers⁴ (Vishnevsky, 2007).

1.3. Abortion and contraception

The high prevalence of abortions is a distinctive feature of the reproductive behaviour of the Russian population. In 2005, there were 120 abortions per 100 live births. This abortion level is the highest in Europe. However, statistics of abortions differ from one country to another with regard to their completeness and quality (Henshaw et al., 1999). In Russia the completeness of this registration is quite high (Philipov et al., 2004), including also spontaneous abortions outside of the medical institutions (ten per cent of all abortions), which makes these rates seem higher in comparison to other countries. The subtraction of this kind of abortions from the crude number of abortions in Russia would move it from first second place in Europe, after Romania (Vishnevsky, 2006a).

Preventing birth (rather than conception) has been common practice since Soviet times, when “the Soviet state and its public health service... were hindering [the contraceptive revolution], which took place in almost all the developed countries...” (Vishnevsky, 2006).

Ineffective contraceptive methods and the inability to use them correctly are still an important factor in the high number of abortions. In contrast to abortion statistics, the current statistics of contraception collected by the Ministry of Health and Social Development is incomplete and refers to a biased sample of women. The only possible conclusion based on these statistics is that sterilization as a contraceptive method is almost not used at all (with c. 20,000 surgeries per year), giving way to hormonal contraceptive methods (Ministry of Health, 2002; GEOTAR-MED, 2004).

⁴ Mothers who declared that on the moment of childbirth they did not cohabitate with a partner.

Table 4. Main indicators of abortion prevalence

Years	Abortions (thousands)	per ,1000 women at age 15-49	per 1,000 live-births	Percentage of abortions to number of pregnancies ¹
1990	4,103.4	113.9	205.9	67,4
1991	3,608.4	100.1	200.7	66,8
1992	3,436.7	94.7	216.1	68,4
1993	3,244.0	88.9	235.0	70,2
1994	3,060.2	82.2	217.0	68,5
1995	2,766.4	72.8	202.6	67,0
1996	2,652.0	68.9	203.0	67,0
1997	2,498.7	64.4	198.3	66,5
1998	2,346.1	60.0	182.6	64,6
1999	2,181.2	55.5	179.4	64,2
2000	2,138.8	54.2	168.7	62,8
2001	2,014.7	50.9	153.6	60,6
2002	1,944.5	49.0	139.2	58,2
2003	1,864.6	47.0	128.7	55,7
2004	1,797.6	45.5	122.0	54,9
2005	1,732.3	44.1	121.4	54,3

¹ abortions plus live-births

Source: ROSSTAT, 2004.

The prevalence of ineffective contraception is not the only reason for the wide spread occurrence of abortions. Lack of skills in using the effective contraceptive methods plays an important role as well (David et al., 2003).

Even though the tendency to have an abortion is still very strong among Russian women, the situation is changing. Over the last fifteen years the total number of abortions, as well as the total abortion rate have been falling; the abortion rate per 100 women at the reproductive age has decreased 2.5 times. This decrease is steady and does not depend on changes in the fertility level, and can be observed in all ages, though in the age groups below twenty and above thirty-five it is accelerated.

Since 1990, life expectancy at birth has dropped by five years for men and almost two years for women. However, its trend was so irregular that it should be divided into four periods.

Table 5. Life expectancy at birth (years)

Years	Total population		
	males and females	males	females
1990	69,19	63,73	74,30
1991	68,92	63,37	74,19
1992	67,80	61,91	73,66
1993	65,03	58,75	71,80
1994	63,85	57,42	71,08
1995	64,52	58,12	71,59
1996	65,80	59,62	72,40
1997	66,73	60,85	72,84
1998	67,07	61,22	73,13
1999	65,92	59,87	72,40
2000	65,34	59,03	72,26
2001	65,23	58,92	72,17
2002	64,95	58,68	71,90
2003	64,85	58,55	71,84
2004	65,27	58,89	72,30
2005	65,30	58,87	72,39

Source: ROSSTAT, 2006, p. 101.

The first period, from 1990 to 1994, deserves special attention due to unprecedented decrease in life expectancy (-6.4 years for men and -3.2 for women). In absence of catastrophic events, such mortality upheaval seemed to be incomprehensible. Its coinciding with a break-up of the Soviet Union at the end of 1991 and the beginning of the subsequent social-economic transformations gave grounds to considering these events as cause-and-effect⁵.

However, in 1995 – which was neither better economically nor socially than the three previous years – the trend was reversed, and for the period from 1995 to 1998 the life expectancy increased by 3.8 years for men and two years for women. In the next period from 1999 to 2004 life expectancy again declined, until in 2004 it started to increase again until, in 2005, reaching 58.8 years for men and 72.3 years for women. Among 155 countries, with total population one million or more, life expectancy is

⁵ Namely since 1992 life expectancy had began to decline in such an unexpected way.

higher in 104 countries for men and in eighty-one countries for women (PRB, 2006). The life expectancy gap between men and women in Russia is the highest in the world. Although changes in the level of life expectancy at birth depend on mortality changes at all ages, in the period studied the trends of child and adult mortality were opposite.

Infant mortality trend has a unique character against the background of the dramatic changes in life expectancy. Since 1993, it has permanently been in decline (from 19.9 pro mille in 1993 to 11 in 2005). An increase in 1993 was determined mostly by adoption of the WHO's live birth definition. However, the present criteria of live birth do not entirely comply with WHO's recommendations (Vishnevsky, 2006a.). This is why ROSSTAT's estimates of infant mortality rates are lower than those of the WHO by fourteen to sixteen per cent. With WHO's definition of live birth infant mortality, the rate in Russia in 2005 should be equal to 12.7 per 1,000 live births instead of 11 (Vishnevsky, 2007). With this correction, the rank of Russia is one of the highest among fifty-two countries of the WHO Europe region (between thirty-eight and forty-two).

Table 6. Infant mortality

Years	Infant deaths per 1,000 live births		
	total population	urban population	rural population
1990	17.4	17.0	18.3
1991	17.8	17.2	19.1
1992	18.0	17.6	19.1
1993	19.9	19.2	21.4
1994	18.6	17.9	20.1
1995	18.1	17.4	19.8
1996	17.4	16.4	19.4
1997	17.2	16.1	19.6
1998	16.5	15.7	18.3
1999	16.9	16.1	18.8
2000	15.3	14.7	16.8
2001	14.6	14.0	16.2
2002	13.3	12.7	14.9
2003	12.4	11.7	13.9
2004	11.6	10.8	13.4
2005	11.0	10.3	12.7

Source: ROSSTAT, 2006.

The decline of infant mortality has been occurring due to early neonatal and post-neonatal mortality, whereas late neonatal mortality (from seven to twenty-eight days) remained stable. Both its components, including stillbirths and perinatal deaths, have declined considerably. Mortality during the first week of life has been declining especially fast, confirming that the Russian health system quite successfully controls infant mortality in maternity hospitals, whereas mortality at age seven to 365 days has declined very moderately, and its high level indicates a great reserve for declining mortality of newborns (Vishnevsky, 2007). At a lesser pace, mortality of children under the age of has been declining. However, in spite of all these achievements, the current level of infant and child mortality is three to four times as high as in the EU-15 countries.

Between 1990 and 2005 both a drop in life expectancy and fluctuations of that trend are determined by the changes in the adult mortality only. The biggest changes occurred in the age groups of thirty to forty-four and that of ages forty-five to fifty-nine. A similar, but smaller change in mortality trends could be seen in the age groups fifteen to twenty-nine and sixty to seventy-four.

Table 7. Changes in life expectancy in years by broad age-groups and sex

Calendar period	Total change	due to mortality change by broad age groups, years :					
		0-14	15-29	30-44	45-59	60-74	75+
Urban and rural population							
Male							
1990-1994	-6.37	-0.15	-0.82	-1.99	-2.22	-1.04	-0.15
1994-1998	3.81	0.22	0.23	1.16	1.46	0.61	0.13
1998-2003	-2.71	0.31	-0.15	-0.97	-1.25	-0.59	-0.06
2003-2005	0.28	0.14	-0.03	-0.08	0.13	0.10	0.01
1990-2005	-4.99	0.52	-0.77	-1.88	-1.88	-0.92	-0.07
Female							
1990-1994	-3.25	-0.17	-0.25	-0.65	-1.06	-0.79	-0.33
1994-1998	2.06	0.17	0.03	0.41	0.74	0.52	0.18
1998-2003	-1.31	0.28	-0.07	-0.47	-0.65	-0.33	-0.06
2003-2005	0.51	0.20	-0.02	-0.10	0.14	0.19	0.10
1990-2005	-1.99	0.48	-0.31	-0.81	-0.83	-0.41	-0.11

Source: Vishnevsky, 2007.

Between 1990 and 2003, the two leading causes of death, namely violent deaths and cardiovascular diseases, determined almost completely the decline of the life expectancy at age fifteen and an amplitude of fluctuations in its level for men and women as well. The contribution of both causes of death was more or less equal for men, while in the case of women cardiovascular diseases clearly dominated.

Russian men and women die very early. Table 8 presents the mean age of death by seven groups of causes of death, calculated on a basis of multiple causes of death life tables for Russia and a group of sixteen western countries.

Table 8. Mean age of death (calculated on the base of life tables by causes of death)

Major classes of causes of death	West, 2000		Russia, 2004		Difference	
	Male	Female	Male	Female	Male	Female
Infectious diseases	73.5	79.6	46.8	50.3	26.7	29.3
Neoplasms	74.5	75.5	64.3	67.1	10.2	8.4
Cardiovascular diseases	79.1	85.1	67.8	77.8	11.3	7.3
Respiratory diseases	81.5	84.5	63.1	71.4	18.4	13.1
Digestive diseases	74.0	81.5	57.0	65.9	17.0	15.6
External causes	58.4	73.5	43.5	51.9	14.9	21.6
Other causes	77.5	83.5	53.9	61.1	23.5	22.5
All causes of deaths	76.5	82.0	60.6	73.7	15.9	8.3

Source: Based on the WHO "MortDB" data base and "Rusmort" data base (see details in Vasin, S., 2006).

There are many premature deaths in Russia; avoidable mortality contributes substantially to the gap in life expectancy between Russia and western countries. An analysis of the contribution of death causes to the difference in life expectancy at birth in the UK and Russia revealed that in 1999 almost half of the difference (roughly seven years for men and 3,5 years for women) was stipulated by deaths which were identified as avoidable (Andreev et al., 2003). Public health institutions bear responsibility for a considerable part of avoidable deaths.

While considering a concept of health expectation which partitions overall life expectancy into periods lived at different levels of health (Andreev et al., 2003), large differences in life expectancy between Western countries and Russia seem even more drastic. This is especially true for

women. The expectation of a healthy life for Russian women is so low that the gender difference in overall life expectancy in Russia is almost close to nil. It supports the conclusion that “even though Russian women may be more likely than men to survive into old age, very few do so in good health” (Andreev et al., 2003). In general, there are two main challenges: a large toll of premature male mortality and a substantial burden of ill health among women.

1.4. Alcohol as a main feature of adult mortality

Excessive consumption of alcohol is the most important behavioural factor influencing mortality rates in Russia. Since the official statistics of alcohol-related deaths, as well as alcohol production, sale and consumption are far from being complete and reliable (Nemtsov 2000, 2001, 2003; Nikitina and Kozeeva, 2006; Khalturina and Korotaev, 2006), they neither confirm or disprove this assumption. However, there is ample evidence that high mortality at working age, especially of men, and its dynamics over the last two decades were related to alcohol consumption (Shkolnikov and Chervyakov, 2000; Mesle et al., 2000; Andreev, 2001; Andreev and Vishnevsky, 2004; Shkolnikov et al., 2001; Bobak et al., 2004). Directly or indirectly, alcohol plays a role in nine to fourteen per cent of deaths in Russia (Kharchenko et al., 2004) and maybe reaching thirty per cent (Nemtsov, 2003).

The strong link between alcohol and mortality is due to: (a) a specific structure of alcohol consumption in Russia, in which the strong alcoholic drinks predominate (from eighty-two per cent to 71.3 per cent – according to an estimate by Kharchenko et al. (2005); (b) the low quality of the consumed beverages, in particular concerning the consumption of manufactured ethanol-based liquids not intended to be ingested.

Statistics of mortality by social characteristics in Russia have been limited since the Soviet times, and by 1999 it had come to an end. Nationally representative surveys on this subject were not carried out, either. Nevertheless, available studies only allow one possible conclusion: social differentiation in mortality has been and still is a highly significant structural factor of life expectancy in Russia.

Between 1970 and 1979, the decline of life expectancy during working age was concerned with an increase of mortality among manual workers and non-workers (Andreev et al., 2005; 2006), who certainly had low educational levels.

During the 1990's the mortality of adults with a university education had declined, so that the sharp drop of life expectancy was due to a rise in mortality among persons with lower educational levels. Such opposite mortality dynamics was due to the increase of the gap in life expectancy at age thirty between educational groups: in 1998 the difference between those with a university education and those with an educational level at less than secondary schooling was ten years for women and thirteen years for men (Shkolnikov et al., 2006). At the end of the 1990s, the level of mortality among Russians with a higher education was comparable to that of that population group in leading developed countries.

1.5. Migration

Before proceeding to a review of the migration situation, it is worth making a brief note about migration statistics in Russia.

First, after the collapse of the USSR, legislation on migration and regulating norms of statistical registration of migrants had undergone permanent transformations, varying both in compatibility and coverage of statistical account of different types of migrations (Vishnevsky et al., 2007; Mkrtchan, 2003; Chudinovskih, 2004). Among them, the most important developments are the following: since 1996 migrants who registered for a period of less than one year dropped out of the statistical account. Since 1999, new restrictive intentions in migration policy have considerably lessened the number of legal immigrants. Since 2002, the undercount of international migration statistics has become greater, due to the fact that a normative base for statistical registration of foreigners in Russia was lost.

Second, an important part of migration data collected by the Federal Migration Service (the FMS) of the Ministry of Internal Affairs is out of statistical treatment. Since 2002, ROSSTAT has published its own data collected at the place of residence where a migrant was registered. This data differs from the data of the Ministry of Internal Affairs. Migration data officially published by ROSSTAT referred to migrants who have already

obtained Russian citizenship while only the FMS registered non-Russian citizens. There are two sets of ROSSTAT's officially published international migration data: 1) current estimates as they are; 2) estimates corrected based on the undercount. The latter are used for current estimates of the Russian population, while the former are published in statistical tables with structural characteristics of migrants (ROSSTAT, 2005).

Recently, ROSSTAT has published a new data set based on intercensal estimates. This data set differs much from others (Table 9), but there are serious doubts that ROSSTAT selected the right way of distributed error of closure⁶ (Makrtchan, 2004; Chudinovskih, 2006; Population of Russia, 2005).

Table 9. Net migration according to ROSSTAT publications (in thousand)

Years	Current estimates (set 1)	Revised current estimates (set 2)	Estimates corrected on the base of population census of 2002 (set 3)	set2 – set3
1989	115.3	82.9	82.9	0.0
1990	183.8	164.0	272.0	-108.0
1991	16.7	51.6	136.1	-84.5
1992	252.9	176.1	266.2	-90.1
1993	440.3	430.1	526.3	-96.2
1994	809.6	810.0	978.0	-168.0
1995	502.4	502.2	653.7	-151.5
1996	343.5	343.6	513.5	-169.9
1997	364.7	352.6	514.1	-161.5
1998	300.2	284.7	428.8	-144.1
1999	164.8	154.6	269.5	-114.9
2000	213.6	213.6	362.6	-149.0
2001	72.3	72.3	278.5	-206.2
2002	77.9	77.9	230.8	-152.9
2003	35.1	93.1	93.1	0.0
2004	39.4	98.9	98.9	0.0
2005	107.4	125.9	125.9	0.0

Source: Vishnevsky, 2007.

⁶ The census of 2002 enumerated 1.8 million more people than current population estimate. This error of closure was completely attributed to international immigration.

International migration⁷

The 1990s were a particular period in the history of international migration in Russia⁸. After the collapse of the USSR in 1991, the migration exchange between the former Soviet Union (FSU) countries attained the status of international migration, and this brought Russia up to the third place in net migration, following the USA and Germany. But, in contrast to these countries, net migration of Russia was also due to the repatriation of Russians from the Baltic and CIS countries. During the period between 1989 and 2005, net migration was 5,8 million (ROSSTAT estimate): this number was obtained only due to post Soviet countries, whereas in exchange with other world countries Russia lost more than 1,3 million.

After reaching its peak in 1994, net migration started to decline. in connection with the beginning of the war in Chechnya (Vishnevsky, 2006). The further decline of immigration from the former USSR countries was generated by the financial default in 1998 and by a turn towards restrictive immigration policies. However, it is supposed that not real in-flow, but only statistics of immigrants were influenced by these restrictive measures (Makrtchan, 2003; Chudinovskih, 2004).

A real factor leading to a decline in net migration in these years has been a new policy concerning ethnic Russians in these countries. An increase of 5.6 million in the Russian population during the intercensal period (1989-2002) due to migration was possible because four million Russians came from the post Soviet countries, mainly from Kazakhstan and Central Asian countries. Since 2000, a number of these countries adopted a policy directed at preserving ethnic Russians on their territory (Vishnevsky et al., 2007).

The number of emigrants during the period studied has also dropped sharply, and the flow of immigrants from outside the former USSR region has become especially small. At the same time, the geography of emigration has expanded. In the first part of the 1990s Moscow and St. Petersburg had been in first place with almost forty per cent of emigrants in 1992

⁷ Here and so on, if not mentioned apart, the matter concerns registered migration according to ROSSTAT data.

⁸ To a great extent the review of the migration situation is based on ch.5 of *Naselenie Rossii* 2006.

combined), but in 2000 their share decreased to 9.3 per cent, and in 2005 to 7.5 per cent. Both cities gave more or less equal number of emigrants, but Moscow gave approximately an equal number of emigrants to CIS and other countries, whereas emigration originating in St. Petersburg to other countries exceeded that to CIS by three times (Vishnevsky, 2006a).

The current situation is characterized by moderate registered rates of the international migration, although since 2005 the net migration has started to grow again, and constituted 107,400 (or 7.5 pro mille) in comparison to 39,400 in 2004. The increase occurred due to ongoing decline in number of emigrants (69.8 thousand in 2005 and 79.8 thousand in 2004) and raise in number of immigrants from 119.2 thousand to 177.2 thousand⁹. The latter had not happened since 1992 and was perhaps connected with the task formulated by the Russian President in March 2005 of "stimulation of migration processes"¹⁰, and first of all from CIS (Vishnevsky, 2007). Nevertheless, in comparison to the 1990s the number of those who came to Russia is far from being high.

Migration between Russia, CIS and the Baltic countries

As has been already mentioned, the FSU countries are the main source of Russia's net migration gain. Table 10 allows to identify the main donor-countries of origin for Russia between 1989 and 2005. Apart from Belarus, the Russian population grew due to migration from all former Soviet Union countries. One third of the net migration during this period migrated from Kazakhstan and another third from the other four Central Asian countries. The contribution of Transcaucasian region is also significant with twenty per cent.

The process of the repatriation of Russians played the decisive role in the great flux of migrants in the 1990s. The majority came from Ukraine and the Baltic countries (more than eighty per cent of the net migration), Kazakhstan, Kyrgyzstan and Turkmenistan (more than seventy per cent). In 2005, Russians were still prevailing in the movements from the Baltic

⁹ Those who came to stay or those who had been previously settled, and were finally registered.

¹⁰ The introductory speech of V.V. Putin at the Security Council meeting on March, 17 2005.

countries, from Kazakhstan and Transcaucasia. Yet, while speaking about immigration in Russia, it has to be remembered that statistics register mainly the immigration of Russian citizens (they constitute ninety-two per cent of all registered migrants, who had come from CIS in 2005, and this complies approximately with the situation in the previous years). Not only immigration to Russia but also the emigration to the Baltic countries and CIS has been decreasing over recent years. The main reason is an exhaustion of Russia's ethnic migration potential of the native Russians of these countries.

Table 10. Net migration between Russia, CIS and Baltic countries between 1989 and 2005^(*)

Countries and regions	Net migration in 1989-2005			2005	
	Total (in thousand)	Annual average (in thousand)	Annual average (per cent)	Total (in thousand)	Annual average (per cent)
<i>Western region of CIS</i>	527.0	31.0	9.7	29.5	19.4
Belarus	-9.1	-0.5	-0.2	1.5	1.0
Moldova	114.6	6.7	2.1	6.5	4.3
Ukraine	421.5	24.8	7.8	21.5	14.1
<i>Transcaucasion region</i>	1063.1	62.5	19.7	17.0	11.2
Azerbaijan	406.7	23.9	7.5	3.8	2.5
Armenia	238.6	14.0	4.4	7.8	5.1
Georgia	417.8	24.6	7.8	5.4	3.6
<i>Central Asian region</i>	1747.9	102.8	32.4	59.2	39.0
Kyrgyzstan	360.7	21.2	6.7	16.8	11.1
Tadjikistan	388.9	22.9	7.2	4.8	3.2
Turkmenistan	153.3	9.0	2.8	4.4	2.9
Uzbekistan	845.0	49.7	15.7	33.2	21.8
<i>Kazakhstan</i>	1811.2	106.5	33.6	45.1	29.7
<i>Baltic countries</i>	246.7	14.5	4.6	1.0	0.7
Total	5395.9	317.4	100.0	151.8	100.0

(*) 1989-2002 - current population statistics data, 2003-2005 - ROSSTAT postcensal estimates.

Source: Vishnevsky, 2007.

Table 11. Net migration of Russians from CIS and Baltic countries in 1989-2005 (*)

Countries and regions	Number of Russians in 1989		Net migration of Russians in 1989-2005		
	in thousand	percentage of total	in thousand	percentage of total	percentage to 1989
A	1	2	3	4	5 = 3 / 2
<i>Western region of CIS</i>	13,260.0	52.4	442.6	12.7	3.3
Belorussia	1,342.0	5.3	8.6	0.3	0.7
Moldova	562.0	2.2	71.6	2.0	12.7
Ukraine	11,356.0	44.9	362.4	10.4	3.2
<i>Transcaucasion region</i>	785.0	3.1	397.4	11.3	50.6
Azerbaijan	392.0	1.6	197.3	5.6	50.3
Armenia	52.0	0.2	35.0	1.0	67.3
Georgia	341.0	1.4	165.1	4.7	48.4
<i>Central Asian region</i>	3,292.0	13.0	1,137.9	32.5	34.6
Kyrgyzstan	917.0	3.6	263.7	7.5	28.8
Tadjikistan	388.0	1.5	237.1	6.8	61.1
Turkmenistan	334.0	1.3	106.4	3.0	31.9
Uzbekistan	1,653.0	6.6	530.7	15.2	32.1
<i>Kazakhstan</i>	6,228.0	24.7	1,318.2	37.7	21.2
<i>Baltic countries</i>	1,725.0	6.8	203.0	5.8	11.8
Total	25,290.0	100.0	3,499.1	100.0	13.5

(*) Current population statistics data.

Source: *Naselenie Rossii*, 2005.

While return migrations are falling, an economic migration is starting to play a leading role. Among labour migrants, coming to Russia in last years, the influx of Uzbeks and Tajik is more evident. Although the registered range of labour and educational migrants is extremely low, it does not exceed much the flow out of the country, where – on the opposite – ethnic Russians have started to prevail (*Naselenie Rossii*, 2006).

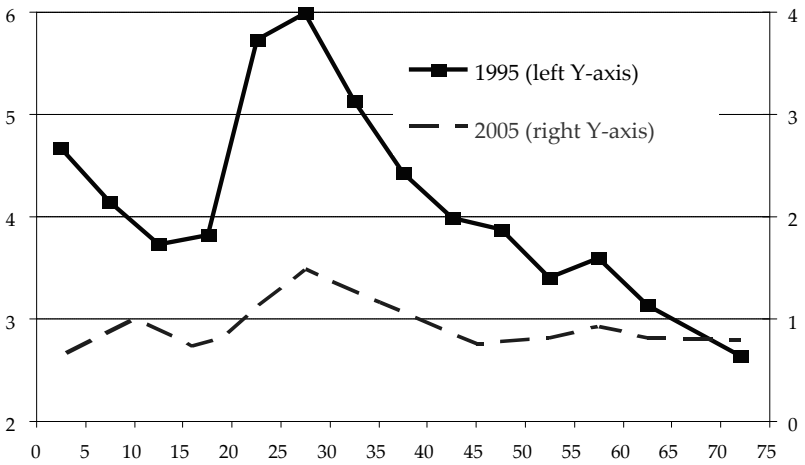
Table 12. Net migration between Russia and CIS and Baltic countries by nationality (ethnicity) of migrants (in thousand)^{a)}

Nationality (ethnicity)	1989-1992	1993-2000	2001-2005
Russians	739.3	2,454.2	305.8
Byelorussians	11.5	19.8	0.4
Moldavians	-5.8	15.6	3.9
Ukrains	-43.1	312.2	36.0
Transcaucasion peoples	73.0	405.1	36.7
Azerbaijanians	-6.4	91.9	6.1
Armenians	84.8	261.8	26.3
Georgians	-5.4	51.4	4.3
<i>Peoples of Central Asia</i>	-18.7	58.7	15.8
Kirghizs	-6.0	1.8	2.3
Tadjiks	-0.9	32.6	5.0
Turkmens	-3.4	2.3	1.0
Uzbeks	-8.4	22.0	7.5
Kazakhs	-20.8	17.7	-6.3
Baltic peoples ^{b)}	-4.0	4.6	0.2
Others ^{c)}	179.0	531.5	137.6
Total	910.4	3,819.4	530.0
percentage of Russians	81.2	64.3	57.7

^{a)} current estimates^{b)} Lithuanians, Letts, Estonians^{c)} including: "nationality (ethnicity) not stated"Source: *Naselenie Rossii*, 2005.

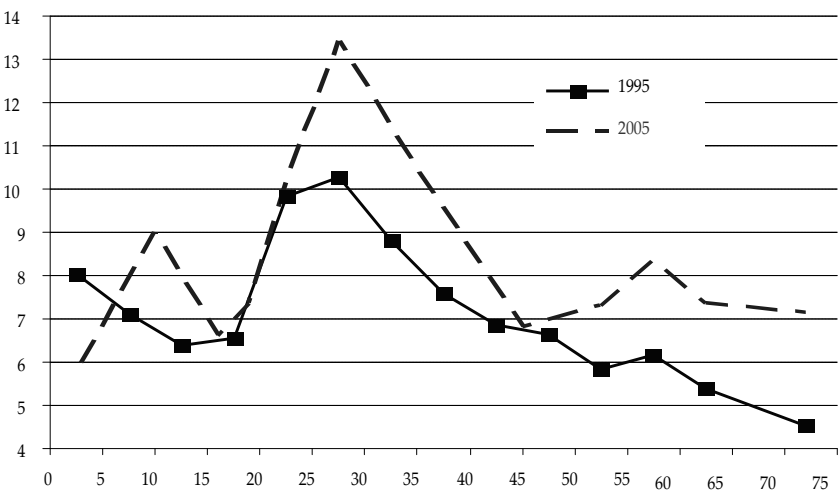
The features of the migration age profile indicate that labour migration predominates in the migration from the Baltic countries and CIS. For a decade since 1995 the level of net migration rate has dropped from 4.2 to 1.2 pro mille, but the shape of the age pattern of the net migration rates has rather slightly transformed.

Figure 2. Age-specific net migration rates between Russian Federation and the CIS and Baltic countries in 1995 and in 2005 (per 1,000 population in corresponding age groups)



Source: The Authors.

Figure 3. Age composition of net migration rates between Russian Federation and the CIS and Baltic countries in 1995 and in 2005 (per cent to the sum of age-specific net migration rates)



Source: The Authors.

The age pattern of the net migration rate is a slightly younger than that of the Russian population. The relative young age composition is determined only by the ages twenty to thirty-nine, whose weight is seven to ten per cent higher than in the population.

Migration between Russia and other countries

The inflow of migrants from CIS and the Baltic countries is accompanied by the outflow to other countries. Emigration to these other countries exceeds five to eight times the levels of immigration. Since 1989 nearly 1.2 million persons left the country and only 170,000 entered. Germany, Israel and the USA are the primary target countries for Russians for permanent residence. Only 100,000 or seven per cent immigrated to other countries (*Naselenie Rossii*, 2007: 206). However, from 1990 to 1998 there was a significant undercount of immigrants to these countries (Denisenko, 2002).

Emigration from Russia to the countries of traditional emigration has an ethnic character. Between 1989 and 2004, 535,000 Germans, 250,000 Jews, 430,000 Russians and 180,000 persons of other ethnicities and of those who did not mention their ethnicity, left the country. Since 1998, Russians have had the biggest share among emigrants (Vishnevsky et al., 2007).

Published data concerning non-Russian citizens entering Russia are essentially absent, but indirectly it can be estimated by the number of people having Russian citizenship (Vishnevsky et al., 2007). According to the last census, at the time about one million people had the citizenship of other countries, 400,000 claimed they have no citizenship and almost 1,3 million did not mentioned their citizenship.

At present, the scale of migration exchange with the countries situated outside of the FSU region is very modest: 33,000 emigrants and only 7,000 immigrants were registered in 2005. The age pattern of both flows is similar: high rates at ages twenty to forty and low rates at ages sixty-five and over. There are two distinctive features in the age distribution of emigrants: the increased share of children below age of eighteen and a decreased share of young people aged twenty to twenty-four. In contrast to the emigration to the Baltic countries and CIS, emigration to other countries is mostly "female": women predominate at all ages, starting from the age of twenty, and especially at ages twenty-five to twenty-nine. On the contrary, there are much more men among immigrants at ages from

seventeen to forty-nine. This flow of registered international migration is the only one where men prevail.

In spite of extremely low rates of international migration to and from traditional foreign countries, some particular kinds of migration are widely discussed: "Russian export of children for adoption" (Rjazancev, 2001; Nekipelova, 2004); "Marital emigration from Russia abroad" (Mahovskaja, 2004; Ryklina, 2004) and "Brain drain". Estimates of highly skilled emigrants from Russia vary significantly. One of them is based on the analysis of scientific and technological communities in Western countries and show rather impressive level of brain drain from Russia (Amosov, 2003). In contrast, estimates based on official statistics are almost negligible (Zajonchkovskaja, 2003). Some nationally non-representative surveys give information on migrant attitudes: almost ten per cent of scientists are actively seeking the job abroad and twenty per cent more are looking for temporal work migration outside the country (Perminova, 2004); there are five to ten per cent of students with positive attitude towards immigration abroad (Chudinovskih et al., 2003).

A set of different factors caused rather considerable emigration of highly qualified population from Russia in the 1990s (Ushakov, 2000). However, in the 2000s the situation was radically changed so that the brain-drain process converted to a routine labour circulation (Karachurina, 2007).

Internal (interregional) migration

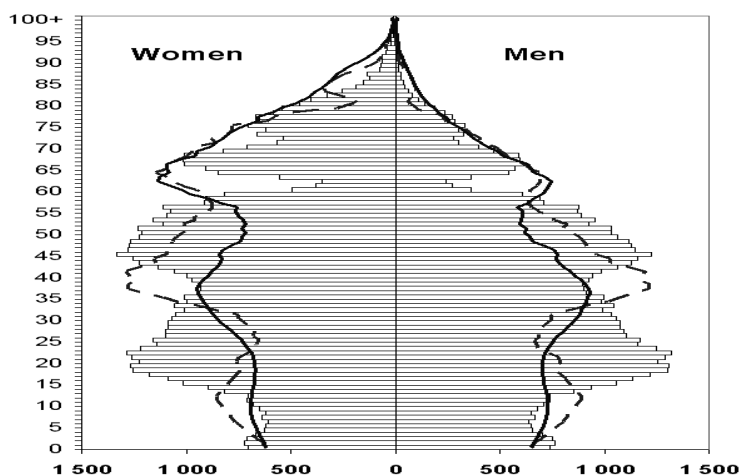
The collapse of the USSR influenced not only international migration but internal (interregional) migration as well. In comparison to the Soviet period, the geographical mobility of the population has declined drastically. The situation is further aggravated by the fact that a centripetal tendency, which characterized the 1980s, has remained the same or has even intensified: about seventy per cent of the net migration is concentrated in the centre, namely in Moscow and Moscow *oblast'* (province). Being second on the list of regions that attract migrants, Saint-Petersburg far exceeds Moscow. In general, internal migration is directed from the North and the East to the West and the South. While Moscow is a gravitational pole, drawing internal migrants, the Far East is a pole of pushing them out. Siberia serves as a transshipment point – it receives migrants from the Far East and gives them to more Western and Southern Federal districts

(*okrugs*). It is important to underline that “the outflow of population from the Far East has happened for the first time since it had been developed by Russians” (Vishnevsky, 2006) and there are no grounds for expecting a turn in this trend. On the contrary, inequality in the economic and demographic development of Russia’s regions contributes to the further outflow of population from behind Ural.

Population age structure and demographic ageing

The age/gender structure of the population results from the extended history of changes in fertility, mortality and migration, including demographic catastrophes. The consequences of the Second World War are stored in the pyramid of the Russia’s population until today. Even in 2006 its profile remains strongly broken. Furthermore, the high mortality of adult men, a general tendency towards birth rate reduction during the four last decades and its situational fluctuations during the last quarter of the last century remain strongly visible.

Figure 4. Age pyramid of population of the Russian Federation in 2006 (bars), and according to medium scenario of projection in 2025 (dashed line) and in 2050 (solid line) (in thousand)

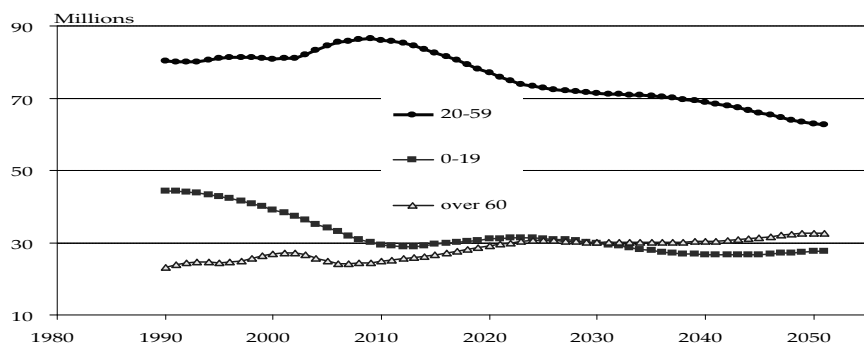


Source: The Authors.

Between 1959 and 2005 the median age increased by ten years and reached thirty-four years for men and forty-two years for women, the

segment of the persons of pension age (both sexes) increased from nine to seventeen per cent, and the percentage of minors went down from thirty-seven to twenty-four per cent¹¹. The share of the working age population grew by five points and reached the highest value within the whole period: fifty-nine per cent. As a result, the total demographic dependency ratio was reduced as compared with 1959 by sixteen points, and reached its historical minimum. Because of the breaks in Russia's population pyramid, the indices changed over time in waves. The last period stands apart - the period of depopulation.

Figure 5. Trends in the number of population by broad age groups, medium scenario, both sexes



Source: The Authors.

However, already in the near future a break within these tendencies will occur. First, in 2008 the number of elderly persons will start to grow, then, after 2010, the working age population will start to decline, and after 2012 the youngest population group will enter a period of growth. The first two tendencies will continue at least until 2050. However, the most powerful changes will occur during the next fifteen years, and this is already predetermined by the existing age distribution of the population.

¹¹ Actual boundaries of working age in Russia are from sixteen to fifty-four for women and from sixteen to fifty-nine years for men. Here we use another age classification: from zero to nineteen – child ages; from twenty to fifty-nine – working ages; sixty and over – old ages.

The projected changes in the population size of these three age groups will re-occur as it was between 1993 and 2005, against the background of the decline in total size of population. However, in 1993-2005 the proportions of these age groups changed due to the decrease in the number of children, while in the nearest future proportions will change due to population decrease at working ages. As it leads to very different situations, let us examine these two periods in more detail.

The demographic dividend

The simultaneous decline in the number of children and an increase in the adult population produced fast changes in the proportions of all three groups. In particular, the youth-dependency ratio declined substantially. This has led to a reduction in the total age-dependency ratio; hence Russia has entered a short-term period of receiving a “demographic dividend (bonus)”, “paid out” to all countries for transition to low fertility. The major portion of the ‘payment’ occurred between 2001 and 2005, when the generations of the 1980s entered their working age while small cohorts of the 1940’s had left it.

Due to this sequential demographic wave, the decline of the youth-dependency ratio was supplemented by a temporary reduction of the dependency ratio of the elderly, hence the total dependency ratio immediately dropped by fourteen per cent and reached its historically lowest level of sixty-seven (thus far in 1983 this index was seventy-four per cent of working age population).

Obtaining this demographic dividend does not prevent the further ageing of the population which clearly demonstrates the trend in the median age, that increased from 33.1 years up to 37.4 years. The rise in the median age occurred as a result of both a population decrease in ages below twenty as well as the ageing of the able-bodied population. The latter process was slower than the ageing of total population; therefore the difference in the median age between them was reduced from 4.2 years in 1990 down to 2.3 years by 2006. Thus, the first period of depopulation of Russia was characterized by very favourable situations in terms of changes in age-dependency ratios.

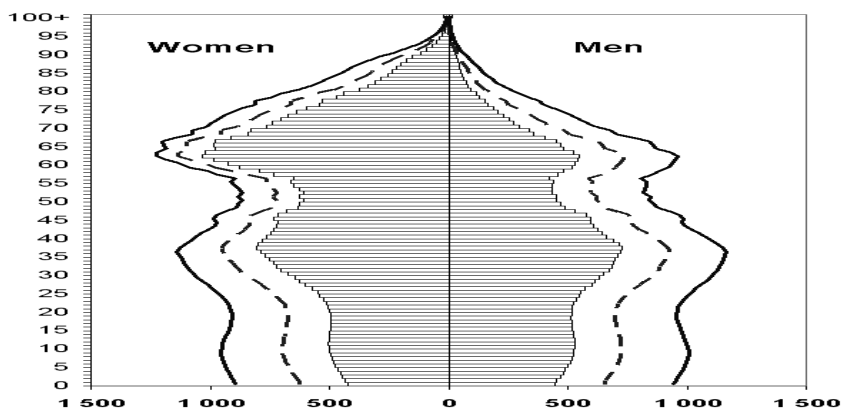
Estimated changes in the population age structure until 2050

Russia has not yet exhausted its demographic dividend, but it is getting close. Following the medium scenario of the population projection, by 2010 the total dependency ratio will reach its historical minimum, and the working age population will be slightly younger. However, shortly after that, the ratio will grow very rapidly, so that in fifteen years its level will be the same as it was at the beginning of the 1990s.

Thus, 2010 opens the new stage of a demographic evolution, in which the decrease of the working age population accelerates, since only in the late 2020s and only for the scenario with low mortality, high fertility and migration, the population decrease could possibly be halted.

Meanwhile, with the present age structure of Russia, the opening of the next “window of demographic opportunity” in the second-half of the 2020s is already predefined. The size of the next dividend strongly depends on the scenario: the worse the scenario, the higher the bonus. By 2025 the pyramid of 2006 will be transformed due to a decline in the number of young people at aged between fifteen and thirty and the increase of the number of the elderly. Within the following twenty-five years, with a certain increase of the number of elderly, the number of minors will slightly decrease, but main drop will occur again among the able-bodied: this time between the ages of thirty-five and fifty-five.

Figure 6. Age pyramid of the population of the Russian Federation in 2050 according to three scenarios: “Low” (bars), “Medium” (dashed line) and “High” (solid line) (in thousand)



Source: The Authors.

Thus, at present, Russia completes the first stage of a “depopulation with the demographic dividend”, during which the depopulation is accompanied by an increase in the total size of the able-bodied population, and stays on the eve of the second stage during which the population decrease for working ages will become inevitable and rapid.

By the mid-2020s, the situation will be back to “square one”: the level of the total age-dependency ratio will be approximately the same as in the mid-1990s, but the population will be much older (the median age will increase by approximately five years), since the ageing process of population will not stop.

Ageing and prospective age

Russia does not belong to the countries with the oldest population. Ageing in the Russian population occurs only “from the bottom”, *i.e.*, due to a decline in fertility, whereas in the majority of developed countries the population has been ageing for already three decades, *i.e.*, ageing “from the top”. Such a mortality decline, on the one hand, makes people live longer, whereas, on the other hand, it makes the population grow older. Both of these dimensions have until recently been examined separately. For their integration, Sanderson and Scherbov (2005a, 2005b) came forward with the concept of prospective age. “With two median ages to consider, populations can simultaneously grow younger according to one measure and older according to the other”. They demonstrated that while a population ages in terms of chronological age in some developed countries it gets younger in terms of prospective age and that as a rule prospective median ages rise less rapidly than median ages in the developed countries. In contrast, mortality trends in Russia lead to the current situation in which its population is ageing more quickly along the line of prospective age than along the line of retrospective age. An especially big gap was observed from 1990 to 2004. Thus, having a relatively low median age, as compared with other developed countries, from the standpoint of the prospective median age the population of Russia is much older.

Table 13. Median age and period prospective median age for Russia with reference to 1965 calendar year (*)

Year	Median age	Prospective median age	Difference
Male			
1965	25.5	25.5	0.0
1970	26.0	28.2	2.2
1975	27.1	29.9	2.8
1980	28.2	32.4	4.1
1985	29.5	32.5	3.1
1990	31.0	33.2	2.2
1995	32.5	40.6	8.0
2000	33.8	40.9	7.0
2004	34.1	42.1	8.0
Female			
1965	31.6	31.6	0.0
1970	33.5	33.9	0.4
1975	35.3	36.0	0.6
1980	34.7	35.8	1.1
1985	34.7	35.7	1.1
1990	35.6	35.9	0.2
1995	37.2	39.9	2.6
2000	39.0	41.1	2.2
2004	40.2	42.5	2.3

(*) The table is produced using the life table for the Russian Federation in 1965 as a standard for each sex separately.
Source: The Authors.

2. Overview of the impact of demographic trends on Russia's national higher education system¹²

2.1. Demographic changes: implications for higher education

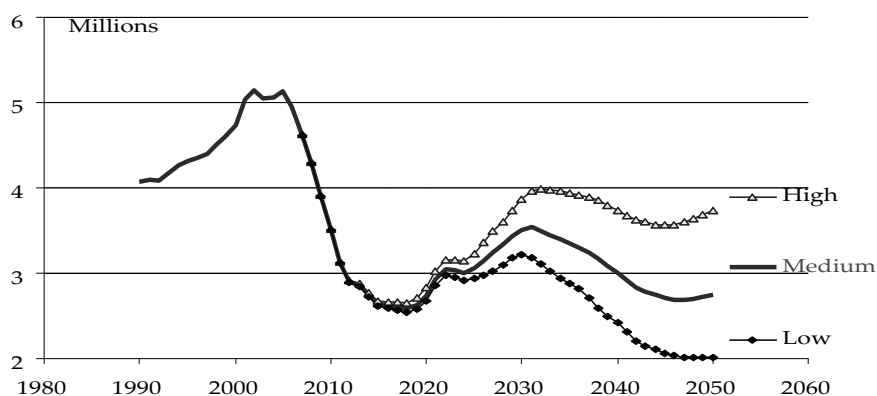
The decrease of the population always presents a challenge to the system of higher education. A particularly sharp decrease in the number of students is being observed in Russia. Competition between universities for the seventeen

¹² *Technical notes:* 1. This section is based on comparisons of the Russian education system with the international benchmarks and educational indicators of OECD and non-OECD countries participated in the international programmes of Indicators of Education Systems (INES) and World Educational Indicators (WEI); 2. the Russian education system is described in terms of International Standard Classification of Education (ISCED-97), rather than using the national system terminology. The conformity of the national education system to ISCED-97 is attached; 3. In some comparisons countries divided by groups in accordance with the GDP per capita: first group includes countries with GDP per capita 25,000 and above USD PPP; second group – between 10,000 and 25,000 USD PPP GDP per capita; third group – less than 10,000 USD PPP GDP per capita. Use of this classification is going to be made. 4. Statistical data are both from national and international sources: Russian Federal Statistics Service; OECD and UNESCO (*Education at a Glance* and some others); World Development Report, the World Bank; Center for Monitoring and Statistics of Education (Russia).

to eighteen-year-olds will inevitably increase in the years to come, taking into consideration obligatory military service. The enormous university facilities will experience a lack of students and thus will be forced to reorganise. The situation from this point of view resembles the one in Europe.

One of the possibilities for restructuring is to be found in attracting foreign students, while the other implies the development of 'lifelong learning' programmes. Regarding the former, however, a number of limitations might be listed.

Figure. 7. Population at ages 17-18 years according to three scenarios of population projection, both sexes



Source: The Authors.

The first obstacle is the difficulty encountered by many in mastering the Russian language. Second, there is the European competition: high tuition fees coupled with the living costs in Russia's big cities, where the majority of foreign students are concentrated, are not proportional to the level of education that is often lower than in the rest of Europe. Another factor is the lack of correspondence with international standards – Russian diplomas are often ignored by non-Russian employers. Finally we cannot fail to notice the extreme watchfulness of politicians, as well as that of the public opinion with regard to attracting immigrants.

The other possibility of restructuring higher education depends on whether the demand for 'lifelong learning' will be addressed. This in turn

depends on the emergence of the lifestyles and a particular type of life cycle, similar to other European countries, in Russia. This question can thus be reformulated in a demographical terminology: *does the resemblance of demographic situations in Russia and Europe imply a similarity of the demographic processes on which they are founded?*

Regarding the demographic changes that affect lifestyles and life cycles, for example ageing, the question remains open. The primary reason resides in mortality, for population ageing in Russia stems only from decreasing fertility. The level of adult mortality is extremely high in Russia and does not contribute to the ageing of the population, but, as has been shown previously, contributes to the ageing of individuals: the prospective median age grows faster than the median age of the population. The life horizon of those in their early twenties (*i.e.*, life expectancy at age twenty) is significantly lower in Russia than in Europe. One can hardly expect any serious improvement in the future (Andreev et al., 2003). It might have been supposed that the problem of high mortality among adults applies exclusively to the male population, but the situation is worsened by poor health among women whose expectation of healthy life is almost as low as for Russian men. This does not favour the appearance of the challenges, already encountered in Europe (*i.e.*, impeding the changes in lifestyle and life cycle analogous to those experienced in Europe), and thus does not present or modify demographical challenges to the system of higher education.

On the other hand, a strong mortality differentiation by education level and a significant part of the population possessing higher education (according to the 2002 census, 19.4 million have obtained higher education, among those aged twenty and over) seems to indicate that the formation of a portion of the population leading a 'European' lifestyle is to some extent possible.

This is especially true of the female population, for in terms of life expectancy, the life horizon of highly educated Russian women is comparable to that of 'European women', while their early retirement (at age fifty-five) results in them spending a larger portion of their lives spent in retirement as compared to an average European woman. At the same time an early retirement may cast doubt on the necessity of investments into corresponding education (human capital), even more so, since the period of

working career is reduced by the necessity of giving birth to at least one child, for a voluntary refusal to have a child is still not widespread in Russia. But it is exactly these two factors that can stimulate the demand for lifelong learning. In particular, the pronatalistic policy carried out in recent years does not stimulate the combination of labour and family (reproductive) careers among women. This is why it is possible that the mothers' return to the labour market will commence by obtaining additional higher education. Moreover, certain shifts in life cycles have already been observed: fertility and nuptiality are ageing; matrimonial behaviour is also changing towards the European model (spread of informal family unions). One can suggest that these alterations are provoked by the changes in lifestyle, namely by an increased time needed to complete a professional education, and consequently by a later acquisition of a firm economic position, by a preference shift towards a professional career, social success and individual interests and values. Late childbearing makes a difference between women with higher education and others (Maleva and Sinyavskaya, 2006), but as these changes are not yet substantial, these conclusions cannot be made with absolute certainty.

As to early retirement resulting in a long post-career period among women: it can lead to an increased demand for lifelong learning, provided that the level of pensions will remain low. This is also the case for men. The male population in Russia is extremely heterogeneous with respect to the risk of death (Shkolnikov et al., 2003). As has been previously mentioned, among men aged twenty to fifty-five the group with a very high risk of death amounts to twenty per cent and it is this group in which eighty per cent of deaths in this age interval occur. It follows that the other significant part of the male population may have a life horizon close to the European one, during as well as after their working age.

Another obstacle for a rising demand for 'lifelong learning' is a low migratory mobility of the population, enormous distances in Russia and an uneven distribution of universities across the country. But this may have as much an effect on the demand itself as on the mode of teaching. Perhaps various extra-mural modes of instruction will be called for, in particular long distance teaching.

Examining the global parameters of the demographic situation in the Russian Federation, it is impossible to overlook both the distinctions and

resemblances to the situation in Europe and in other developed countries. Just like in many other countries, the population of Russia is ageing, while decreasing in number as a consequence of the fact that the number of deaths exceeds the number of births; also the working age population is ageing and diminishing. However, at this point the similarities seem to end. The very high adult population mortality and low migration mobility as well as the distinctions in certain important parameters of the lifestyle and life cycle make the whole difference.

Even the obvious similarity contains an important difference. The scale and the speed of depopulation processes differ in Russia and in Europe. Population decrease is considerably faster in Russia, while the shifts in balance between age groups are rather moderate.

Due to the drastic decrease of fertility in 1990s, the loss of a working-age population is also expected to be dramatic. This will lead, under the conditions of successful economical development, to considerable changes in the demand/supply ratio on the labour market. For the small sized generations just entering the labour market the competition would be lower and thus easier career paths may become available, which might reduce the motivation to get additional higher professional education. For the older generations the possibilities on the labour market will become wider in scope, too.

2.2. Present schooling rates by level of education and education attainment

The Russian education system is one of the most developed education system in the world. In terms of education attainment, Russia is at the top of the world rating, as the share of population with the tertiary education is the highest in the world (Table 14).

Table 14. Share of population with the tertiary education

Programme number (prog. <ISCED level> <number within level>)	ISCED level	Programme destination	Name of the programme according to ISCED 1997	National name of the programme	National name of the programme in English	Programme orientation	Position in the national degree/ qualification structure (intermediate, first, second, etc.)	Theoretical starting age	Theoretical duration of the programme	Programme specifically designed for part-time attendance (yes/no)
prog.00.01	0		Pre-primary education (initial stage of education, aimed to prepare small children for school)	<i>Дошкольное образование</i>	Pre-school education			1,5	4-5	Yes
prog.01.01	1		Primary education (aims to provide basic skills and knowledge in reading, writing and mathematics.)	<i>Начальное образование</i>	Primary education	general		6-7	3-4	no
prog.02.01	2		Lower secondary education (lowest level of secondary education, continues programmes of the primary level, mostly focuses on individual subjects, presupposes a more specialized teaching staff)	<i>Основное общее образование</i>	General secondary education	general		10	5	no
prog.03.01	3	A	Upper secondary education (Programmes to ensure further instruction on the programmes of ISCED 5A)	<i>Полное среднее образование</i>	Full secondary education	general		15	2	no
prog.03.02	3+5	B	Tertiary education	<i>Среднее профессиональное образование</i>	Secondary vocational education	vocational	first	15	4	yes
prog.03.03	3	C	Upper secondary education (no direct transition to ISCED 5A/B, direct entry to the labour market, continued studies on ISCED 4 programmes or other ISCED 3 programmes.)	<i>Начальное профессиональное образование</i>	Primary vocational education	vocational		15	1-2	no
prog.04.01	4	C	Post secondary, non-tertiary education (In int'l comparison between upper secondary and post-secondary education; within national systems, could be referred to upper (post-secondary level, usually not more advanced than ISCED 3), serves to widen knowledge beyond ISCED 3, students usually older.	<i>Начальное профессиональное образование</i>	Primary vocational education	vocational		17	2	no
prog.05.01	5	B	Tertiary education (more practical/ technical/ professional, than ISCED 5A programmes)	<i>Среднее профессиональное образование</i>	Secondary vocational education	vocational	first	17	3	yes

Programme number (prog. <ISCED level>. <number within level>)	ISCED level	Programme destination	Name of the programme according to ISCED 1997	National name of the programme	National name of the programme in English	Programme orientation	Position in the national degree/ qualification structure (intermediate, first, second, etc.)	Theoretical starting age	Theoretical duration of the programme	Programme specifically designed for part-time attendance (yes/no)
prog.05.02	5	A	Tertiary education (programmes leading to a scientific degree, focus on detailed deep studies in individual subjects and independent research.)	Всёобщее профессиональное образование (бакалавриат)	Higher education	vocational	first	17	4	yes
prog.05.03	5	A	Tertiary education (programmes leading to a scientific degree, focus on detailed deep studies in individual subjects and independent research.)	Всёобщее профессиональное образование	Higher education	vocational	first	17	5-6	yes
prog.05.04	5	A	Tertiary education (programmes leading to a scientific degree, focus on detailed deep studies in individual subjects and independent research.)	Всёобщее профессиональное образование (магистратура)	Higher education	vocational	second	21	1-2	yes
prog.05.05	5	A	Tertiary education (programmes leading to a scientific degree, focus on detailed deep studies in individual subjects and independent research.)	Всёобщее профессиональное образование	Higher education	vocational	second	22-24	1	yes
prog.06.01	6		Advanced research programmes (conductive to receiving a scientific degree)	Послеуниверситетское образование (аспирантура)	Post-graduate education – advanced research programmes (Candidate studies)			22	3	yes
prog.06.02	6		Advanced research programmes (conductive to receiving a scientific degree)	Послеуниверситетское образование (докторантура)	Post-graduate education – advanced research programmes (Doctorate studies)			26	3	yes

Source: The Authors.

At the same time, it should be underlined that the achievement of the highest rank resulted from very high enrolment rate at the first level of tertiary education (ISCED 5B programmes) and from the share of enrolment at non-fulltime (part-time and distant) programmes is much larger than the world average.

Table 15. Education expectancy by type of study by countries, 2003

	All programmes	Full-time programmes	Part-time programmes	
Group I	Luxembourg	14,8	14,6	0,2
	Ireland	16,7	15,7	1,0
	Norway	18,2	16,8	1,4
	United States	16,8	14,9	2,0
	Denmark	18,3	17,2	1,0
	Iceland	19,2	16,9	2,4
	Canada	m	m	m
	Switzerland	16,7	16,1	0,5
	Austria	16,1	15,9	0,2
	Australia	21,1	14,8	6,3
	Netherlands	17,3	16,7	0,6
	Belgium	19,7	16,4	3,3
	Japan	m	m	m
	Germany	17,2	17,1	0,1
	France	16,8	16,8	n
	Finland	19,7	17,8	1,9
	United Kingdom	20,4	14,9	5,5
	Italy	16,8	16,7	0,1
	Sweden	20,1	16,9	3,3
Group II	New Zealand	18,6	15,5	3,0
	Spain	17,0	16,4	0,6
	Israel	15,9	15,3	0,6
	Greece	16,5	16,3	0,1
	Portugal	16,9	16,2	0,7
	Korea	16,4	16,4	n
	Czech Republic	16,6	16,3	0,3
	Hungary	17,2	15,3	1,9
	Slovakia	15,3	14,6	0,7
	Argentina	17,6	15,1	2,6
	Poland	17,2	14,4	2,8

	All programmes	Full-time programmes	Part-time programmes
Chile	15,0	15,0	n
Malaysia	13,1	13,0	0,1
Russia	14,9	12,1	2,8
Mexico	13,2	13,2	n
Uruguay	16,4	16,4	n
Brazil	16,1	16,1	n
Thailand	15,8	13,0	2,8
Tunisia	4,4	4,4	n
Turkey	12,0	12,0	n
Peru	13,6	13,6	n
China	11,1	10,9	0,2
Paraguay	13,8	12,8	n
Philippines	12,0	11,3	m
Jordan	12,6	12,6	n
Jamaica	12,6	12,6	m
Egypt	10,4	10,4	n
Indonesia	11,9	11,9	n
India	8,5	8,3	0,2
Zimbabwe	11,3	11,2	0,1
Median	16,4	15,1	0,6
Group 1	17,3	16,7	1,0
Group 2	16,9	15,5	0,7
Group 3	12,6	12,6	N
Russian Federation	14,9	12,1	2,8

Source: The Authors.

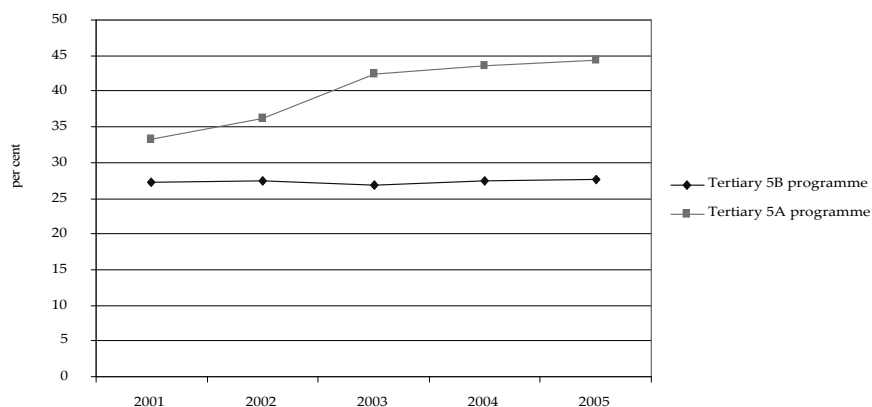
The situation within country is quite complex. On the one hand, there are no gender disparities in the access to tertiary education: forty-six per cent of females aged over fifteen years attained tertiary education in comparison with forty-one per cent of men. On the other hand, there is a substantial differentiation in access to tertiary education by regions depending on economic development and rural versus urban population.

2.3. Graduates and drop out rates

This very high level of education attainment is successfully reached by a wide participation in education. For the last five years graduation rates

have been stable for ISCED 5B programme at the level of twenty-seven to twenty-eight per cent and have been risen for ISCED 5A programme by one third from thirty-three to forty-four per cent.

Figure 8. Graduation rates in tertiary education by type of programmes



Source: The Authors.

Table 16. Tertiary graduation rates in Russia Federation, (2001-2005)

	2001-02	2002-03	2003-04	2004-05	2005-06
Type B programmes	0.27	0.28	0.27	0.28	0.28
Type A programmes	0.33	0.36	0.42	0.44	0.44

Source: The Authors.

The serious gap in enrolment rates in tertiary type 5A education between men and women has decreased over five years: the gender ratio (relation of number of females to number of males) in 2005 was 1.33 in comparison with 1.37 in 2001.

The current situation with the young people participation in education is very similar with that of education attainment. At the national level the indicators characterizing involvement in education are quite impressive, and gender differences are not considerable.

Table 17. Gross enrolment ratio in upper secondary education by type of programmes and sex in Russian Federation, (2001-2005)

	2001-02	2002-03	2003-04	2004-05	2005-06
All upper secondary education, all students	0.98	0.96	0.99	1.02	1.03
of which					
Males	0.99	0.97	1.01	1.04	1.06
Females	0.97	0.95	0.97	1.00	1.00
ISCED 3A, all students	0.58	0.57	0.58	0.58	0.58
of which					
Males	0.50	0.49	0.50	0.50	0.50
Females	0.67	0.66	0.66	0.67	0.66
ISCED 3B, all students	0.11	0.11	0.12	0.14	0.15
of which					
Males	0.12	0.12	0.13	0.15	0.16
Females	0.10	0.10	0.11	0.12	0.14
ISCED 3C, all students	0.28	0.28	0.29	0.30	0.31
of which					
Males	0.37	0.36	0.37	0.39	0.40
Females	0.20	0.19	0.20	0.21	0.21

Source: The Authors.

Table 18. Gross enrolment ratio in tertiary education by type of programmes and sex in Russian Federation, (2001-2005)

	2001-02	2002-03	2003-04	2004-05	2005-06
All tertiary education. all students	0.53	0.54	0.56	0.58	0.59
of which					
Males	0.44	0.46	0.48	0.49	0.50
Females	0.62	0.62	0.65	0.67	0.69
ISCED 5B. all students	0.20	0.20	0.20	0.19	0.20
of which					
Males	0.17	0.17	0.17	0.17	0.18
Females	0.24	0.22	0.22	0.21	0.21
ISCED 5A. all students	0.39	0.40	0.43	0.45	0.47
of which					
Males	0.32	0.34	0.36	0.37	0.38
Females	0.46	0.47	0.51	0.53	0.55

Source: The Authors.

At the same time a considerable interregional differentiation in education enrolment can be seen. The enrolment ratio in upper secondary education varies by regions from thirty-one per cent in the Ingush Republic to eighty per cent in Yakutia Republic with the national average being fifty-seven per cent.

In addition to inter-regional differentiation in educational attainment, there are essential distinctions both inter-regional, and inter-municipal in quality and availability of education.

2.4. Mobility trends

The opportunities of access to higher education are very different in regions. These opportunities could be measured by the ratio of the number of ISCED 5A entrants to upper secondary school graduates.

More than twenty per cent of Russian universities are concentrated in Moscow and St. Petersburg, implying that a substantial part of school graduates needs to come to Moscow and St. Petersburg for higher education. More than fifty per cent of students have to pay tuition fees, which is comparatively high in capitals: in comparison with the income, the average tuition fee per semester in Moscow universities is \$2,658 (PPP), in St. Petersburg \$1,781 (PPP). The national average tuition fee per semester is \$1,082 (PPP). In addition, the living standards in the cities are quite high in comparison with the country average: subsistence minimum in Moscow, for example, is 1.6 times higher than country mean, and in St. Petersburg is 1.4 times higher.

Interregional income differentiation in Russia is quite high: the average income in the upper deciles of regions is 5.8 times higher than the average income in regions of the lower deciles. The above differentiation results in the fact that education in Moscow, St. Petersburg and in a few other university centers is not affordable for a substantial part of the young population, thus most of them have to enrol in local higher education institutions.

Taking into consideration the above, one can expect a considerable gap between regions in scope of educational opportunities and quality of education programmes delivered. This will lead to a further degradation of human resources in poorer regions, a decline in the investment attractiveness of these regions, further polarization of subjects of the Russian Federation in social and economic development, an outflow of young people wishing or having an opportunity to leave for other regions in order to obtain vocational education, further social differentiation of the population and marginalization of those young people who remain in the

region, criminalization of the youth due to unemployment and inadequate level of education, increase of social tension.

Another flow of student migration comes from abroad. Currently, the number of foreign students in Russian universities and other tertiary institutions are comparatively low. The share of foreign students (counts based on citizenship) is about 1.3 per cent, which is much lower than the OECD mean (17.5 per cent) and at the level of low income countries.

Table 19. Foreign students in tertiary education by countries, (2000, 2004)

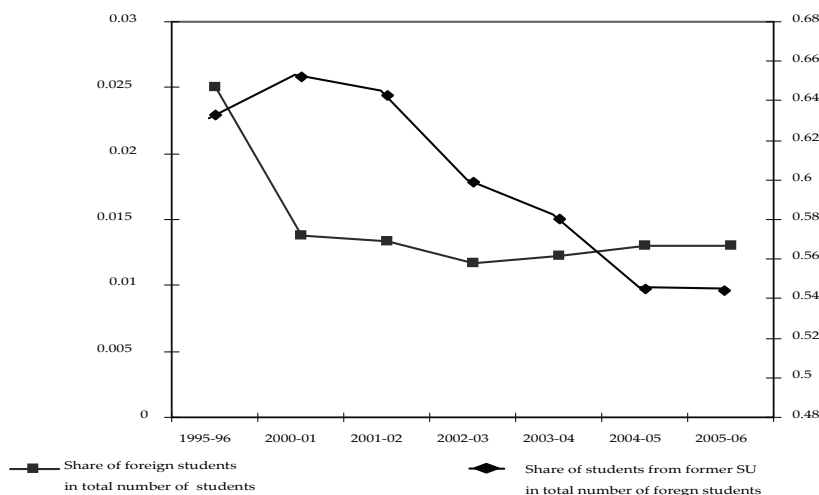
	Foreign students as a percentage of all tertiary enrolment				Index of change in the number of foreign students, total tertiary (2000=100)
	Total tertiary	Tertiary-type B programmes	Tertiary-type A programmes	Advanced research programmes	
Group I	Luxembourg	m	m	m	m
	United States	3.4	x(1)	x(1)	120
	Norway	4.5	3.4	4.3	142
	Ireland	m	m	m	171
	Switzerland	18.2	13.6	16.8	137
	Netherlands	3.9	a	4.0	152
	Australia	19.9	6.3	22.4	158
	Austria	14.1	m	15.4	111
	Iceland	3.3	1.4	3.4	121
	Denmark	7.9	9.5	7.3	133
	Canada	10.6	5.5	11.6	116
	Belgium	9.6	5.9	12.9	114
	United Kingdom	16.2	10.7	16.6	135
	Sweden	8.5	6.2	7.9	143
	France	11.0	5.2	11.4	173
	Finland	2.6	3.8	2.3	142
	Japan	2.9	2.7	3.0	x(3)
	Germany	11.2	4.1	12.4	m
	Italy	2.0	7.5	2.0	163
	Spain	2.3	2.5	1.5	17.5
	New Zealand	28.3	28.0	28.2	36.6
	Greece	2.4	2.0	2.7	n
	Israel	m	m	m	m
Group II	Korea	0.3	x(1)	x(1)	320
	Portugal	4.1	3.3	3.9	7.8
	Czech Republic	4.7	1.2	4.9	7.1
	Hungary	3.1	0.1	3.1	7.4
Group III	Slovak Republic	1.0	0.1	1.0	1.2
	Chile	0.9	0.3	1.1	5.7
	Poland	0.4	0.1	0.4	m

	Foreign students as a percentage of all tertiary enrolment				Index of change in the number of foreign students, total tertiary (2000=100)
	Total tertiary	Tertiary-type B programmes	Tertiary-type A programmes	Advanced research programmes	
Mexico	m	m	m	m	m
Russian Federation	0.9	0.3	1.1	m	184
Brazil	m	m	m	m	m
Turkey	0.8	0.2	1.0	m	87
Median	3.9	3.4	4.0	19.1	142.6
Group 1	8.2	5.5	7.9	21.3	142.5
Group 2	3.6	1.2	3.9	7.4	203.2
Group 3	0.9	0.2	1.0	3.4	132.5
Russian Federation	0.9	0.3	1.1	m	183.9

Source: The Authors.

A few years ago this level was reached mostly due to students arriving from the former Soviet Union countries. Currently the share of students from former SU countries is about forty-five per cent of total number of foreign students in Russian tertiary education.

Figure 9. Foreign students in Russian higher education



Source: The Authors.

Table 20. Number of foreign students in Russian higher education by country of origin

	1995-96	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Total number of students from	2,679,500	4,290,797	4,819,891	5,252,820	5,624,517	5,894,561	6,020,275
Russian Federation	2,612,475	4,231,808	4,755,359	5,191,324	5,555,427	5,817,550	5,942,136
Azerbaijan	1,688	1,248	3,121	1,973	877	1,078	1,367
Armenia	1,694	1,097	831	1,414	998	1,280	1,393
Belarus	4,355	3,368	4,266	2,571	4,817	4,700	5,527
Georgia	3,147	814	748	848	897	902	1,068
Kazakhstan	11,644	16,665	17,922	16,444	18,149	18,963	17,204
Kirgizia	1,700	1,230	1,191	623	657	771	825
Moldova	1,524	1,047	1,117	1,135	1,130	1,157	1,443
Tadjikistan	738	324	394	505	642	1,051	1,172
Turkmenia	650	540	675	1,428	1,298	1,089	1,065
Uzbekistan	3,176	3,221	2,380	1,414	2,307	2,964	4,099
Ukraine	9,462	4,953	5,478	4,736	5,205	5,445	5,473
Latvia	796	1,190	1,121	1,028	1,006	855	771
Latvia	984	1,547	1,564	1,708	1,658	1,352	1,007
Estonia	1,204	1,696	1,250	1,527	1,104	943	739
Other countries	24,263	20,049	22,474	24,142	28,345	34,461	34,986
Foreign students, total	67,025	58,989	64,532	61,496	69,090	77,011	78,139
Share of foreign students in total number of students	0.03	0.01	0.01	0.01	0.01	0.01	0.01
Share of students from former SU in total number of foreign students	0.64	0.66	0.65	0.61	0.59	0.55	0.55

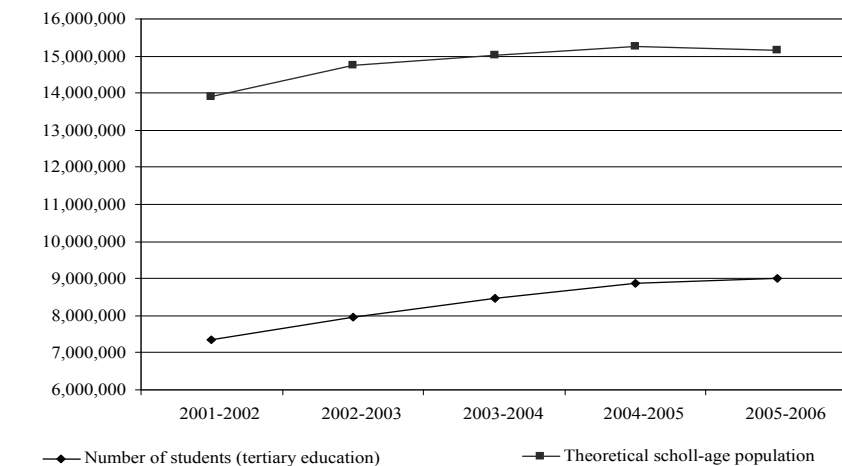
Source: The Authors.

The major obstacles for increasing the number of foreign students are difficulties of learning Russian. Russian is not widely used in former Soviet countries today and this may lead to a decreasing number of foreign

students in Russian tertiary education. The last prediction could be proved by the following fact. For three years the grants programme for getting higher education abroad has been effective in Kazakhstan. Under the President's programme, five thousand upper secondary school graduates annually get grants to pay tuition fees and living expenses for higher education abroad. In spite of this, the number of Kazakh entrants in Russian universities has been reduced from 4,233 in 2004 to 3,806 in 2005. It means that a young Kazakh prefers to obtain higher education in countries other than Russia. The share of foreign students in Russian tertiary education went down over the last five years and this trend is not expected to change in the future.

As has been discussed above, interregional migration is negatively affected by the cost of living in major university centers and by tuition fees. Therefore one could anticipate no increase of student migration, both national and international. On the other hand, the share of Russian tertiary students in OECD countries is currently about two per cent and this share increases with the annual rise of students from Russia at universities in OECD countries. With the rise of tuition fees in Russia, an increase of this indicator in the future is predictable.

Figure 10. Population in typical ages of tertiary education and number of tertiary students (persons)



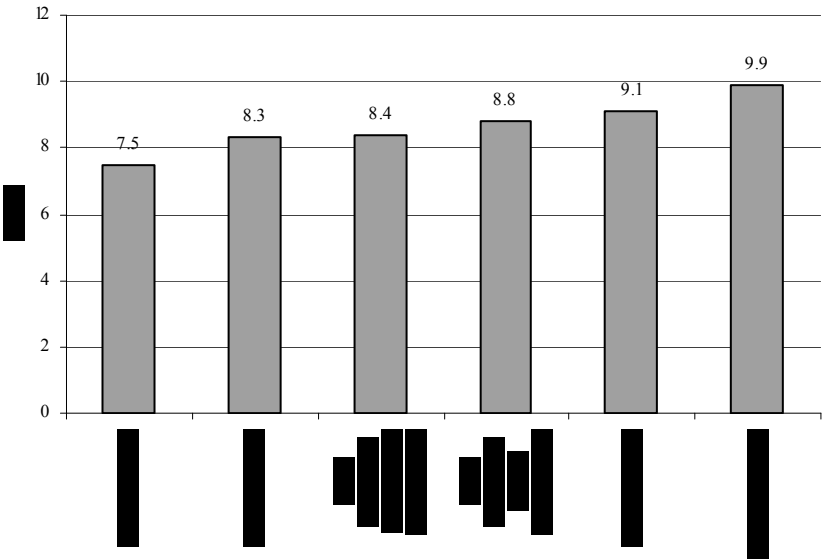
Source: The Authors.

But in accordance with the demographic forecasts, the trend changed in 2005, and the young population will be nearly halved by 2019, with a very slow growth afterwards; that means that in the nearest future universities will have to fight for students to survive, as public funding and tuition fees are the main sources of their income. To maintain the number of students enrolled, universities will have to reduce entrance requirements and offer new “fashionable” programmes, even though they may not have sufficient capacity to deliver them.

Growing graduation rates in tertiary, especially in tertiary ISCED 5A education, in the context of decreasing young population, leads to two consequences:

- (1) Graduates with a higher education have better opportunities on the labour market than those with lower educational attainment both in terms of probability, and the duration of job finding.

Figure 11. Average duration of job finding in month by educational attainment, (2005 – 06)



Source: The Authors.

However, in most cases graduates with a higher level of education are overqualified for the posts they occupy. The problem of replacement from a labour market of a less educated working force due to the occupation of their working places by people with higher educational level - «crowding-out effect» - is not unique for Russia. Developed countries have faced it as well. But in the Russian context the crowding-out effect is more significant because of high graduation rates in tertiary education and comparatively smaller share of the working places that demand tertiary degree.

- (2) Growing entrance rates under the condition of a decreasing young population leads to reduction of requirements to the level of entrants' knowledge and skills, which leads to a deterioration of quality of tertiary education and the level of graduates' knowledge and skills.

Both consequences mean inflation of higher education degrees.

3. An overview of existing higher education institutional policies relevant for the identified demographic shifts

The Russian Government considers education as a high-priority source for the country's social and economic development. This is evident from unofficial documents and statements made by political leaders, but also from the rapid growth in resource provision for the sector. Growth in education funding has outpaced economic growth in recent years, and public expenditure on education rose from 2.8 per cent of GDP in 2000 to 3.4 per cent in 2005. However, public expenditure on education in Russia is still lower, both as a share of GDP and in absolute terms, than in OECD countries and in the countries with comparable levels of economic development.

A new policy document, the *Education Development Strategy of the Russian Federation up to 2010*, was adopted by the Government in December 2004. The *Strategy* includes priorities *inter alia* related to: a) the quality of tertiary education, (b) improving access to vocational training and education for adults. The *Strategy* pays considerable attention to the content of vocational education, proving that the Government is aware of the problem of poor

relation between structure and content of vocational education and the labour market.

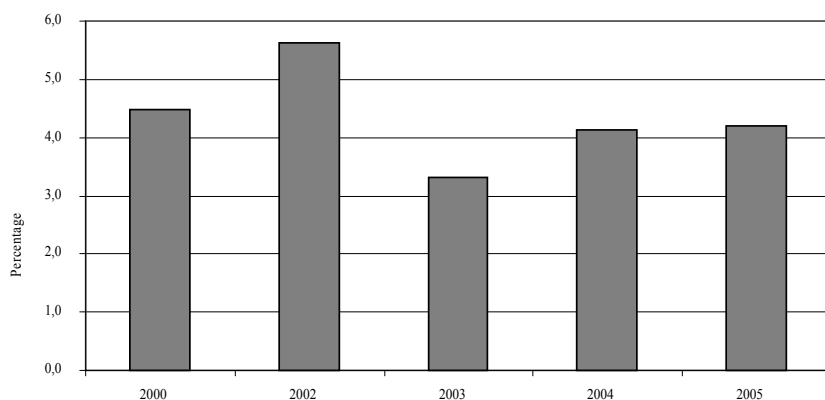
At the same time, it should be underlined that the *Strategy* pays little attention, if any, to regional differentiation in the scope, resources and quality of education, and there is every reason to believe that transfer of responsibilities for funding primary and secondary vocational education, as proposed in the *Strategy*, will only aggravate the situation.

Tertiary education quality. In order to solve the problems and to change some unfavourable trends in the Russian tertiary education, the *Strategy* proposes the introduction of two cycles of higher education, consisting of Bachelor and Master cycles. These types of programmes currently exist in the Russian education system, but for the most part (ninety-two per cent) ISCED 5A students are enrolled in the five-year so-called "specialist" programme. Furthermore, over the last five years the share of Bachelor graduates in the total number of graduates was reduced by one third, from ten to seven per cent.

Lifelong learning. There are few forms of postgraduate education in the Russian education system leading to a formal diploma. These are the second tertiary education degrees with a shorter duration than the first one, and the so-called "additional adult education" which includes long programmes of professional/vocational re-training (not less than 500 hours) and short programmes of professional/vocational skills upgrading (seventy-two hours and above).

Russian education statistics do not collect data on adult professional/vocational education and training and excludes others, namely upgrading and re-training of civil servants, teachers, former military servants, and the unemployed involved in re-training programmes. The above sectors cover only a small part of adult education programmes. Therefore the scale of lifelong learning could be assessed by some indirect factors, such as the number of university entrants who have come for second higher education diploma, and some others.

Figure 12. The share of University entrants with Tertiary type A diplomas (in percentage)



Source: The Authors.

Some indirect assessments could be made by considering data referring to re-training services provided in some non-commercial sectors mentioned above.

Table 21. Enrolment in short and long re-training programmes in Russian Federation (in thousand)

	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
All students	770.3	701.6	898.4	1,059.4	1,119.1	991.5	1,432.9	1,443.8	1,469.1
In short re-training programmes	717.8	658.1	825.3	997.4	1,059.9	923.6	1,319.0	1,325.1	1,365.2
managers and specialists	687.6	635.9	788.1	983.2	1,043.5	909	1,258.2	1,243.4	1,278.1
of which managers	119.2	103.8	146.1	183.1	190.9	178.7	225.6	200.6	188.5
former military servants	0.7	1.4	0.6	1.7	0.9	0.5	0.6	4.1	0.8
teachers at vocational institutions							37.4	56	669
unemployed by contracts with employment services	9.6	7.2	10.7	12.5	15.6	14.1	22.8	21.6	19.4

	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Long re-training programmes	52.5	43.5	73.1	62	59.2	67.9	113.9	118.7	103.9
managers and specialists	35.1	24.9	54.1	47.6	46.9	55	89.4	93.4	87.3
of which managers	9.3	4.6	12.8	11.8	11.2	13.1	18.1	21.3	17.4
former military servants	4.3	5.7	6.5	58	3.2	3.9	3.8	4.4	2.8
teachers of vocational institutions							5.7	5.8	6.3
unemployed by contracts with employment services	9.2	8.9	7.1	8.6	9.1	9	15	9.3	7.5

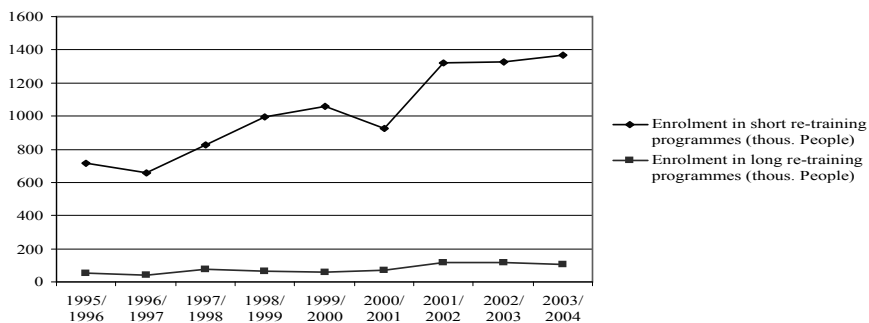
Source: The Authors.

Analyzing these data, one could forward the following conclusions:

1. The main part of re-trained employees in non-commercial sector are public servants. Their share in the total number of re-trained persons in non-commercial sector has varied over the last ten years from ninety-three to ninety-seven per cent.

There is a shift in the number of trainees from long programmes of re-training (500 hours) to short programmes of upgrading professional skills (seventy-two hours).

Figure 13. Changes of civil servant enrolment in post graduate education (in thousand)



Source: The Authors.

2. High-ranking managers tend to be involved in programmes of longer duration than middle-rank civil services employees (specialists). The share of managers involved in long duration programmes is between four and ten per cent in comparison with the share of specialists, which is between four and six per cent.
3. There is some growth of the number of unemployed enrolled in re-training programmes. At the same time, the share of re-trained unemployed persons in the total number of unemployed is still very low and varies within the limits of 0.2-0.4 per cent.

There are almost no data on the scale of vocational/professional training in the commercial sector. The only figures that can be analyzed are the share of spending on education in the total expenditures on the workforce. This share is about 0,03 per cent and has not changed over the last five years. This indicator is above the average, as could be easily expected, in the power and fuel industry. At a lower than average level is expenditure for the finance and banking sectors. It is thus possible to conclude that employers have not changed their attitudes as to how employees should be trained.

4. Conclusions and Recommendations

The decrease of the total population as well as that of their working age group always presents a challenge to the system of higher education. A particularly sharp decrease in the number of students is to be observed in Russia. Competition between universities for the youngsters aged seventeen to eighteen will inevitably increase in the years to come, taking also into consideration the compulsory military service. The enormous university facilities will experience a lack of students and they will be forced to reorganize. One possibility of a restructuration is to attract foreign students, while the other implies the development of lifelong learning programmes. Regarding the former, however, a number of limitations might be listed. The first obstacle is the difficulty encountered by many in mastering the Russian language. Second, there is European competition: high tuition fees coupled with the living costs in Russian capitals, where the majority of foreign students are concentrated, is not proportional to the

level of education that is somehow lower than in Europe. Another factor is the lack of correspondence with international standards: Russian diplomas are often not recognized by non-Russian employers. Finally, we cannot fail to notice an extreme watchfulness of politicians, as well as that of the public opinion with regard to attracting immigrants.

The other possibility of restructuring higher education depends on the demand for and capacity to develop lifelong learning programmes. This in turn depends on the emergence of the lifestyles and types of life cycles, similar to those in other European countries in Russia. This question can thus be reformulated in demographical terminology: *does the resemblance of demographic situations in Russia and Europe imply a similarity of the demographic processes on which they are found?*

Demographic changes in the near future, namely the decrease of the population of typical tertiary education ages, generate risks such as a reduction in the quality of tertiary education, because higher education institutions will try to maintain the number of students enrolled by lowering entrance requirements. At the same time, migration from abroad cannot affect the Russian education system, as the number of immigrants of school-age (31,000 in 2004 and 48,000 in 2005) is about 0.2 per cent of the total number of Russian students, and, according to forecasts, will not exceed one per cent by 2025. The share of foreign students in Russia is comparatively low and is expected to further decrease.

There are no dramatic gender disparities in education and no trends that identify possibilities of such disparities emerging in the future.

The other set of risks is related to territorial disparities in access to education. Without any relevant policy measures, this will lead to a further degradation of human resources in poorer regions, a decline in the investment attractiveness of these regions, a further polarization of the subjects of the Russian Federation in social and economic development, an outflow of young people wishing or having the opportunity to leave for other regions to obtain vocational education, further social differentiation of the population and marginalization of those young people who are not mobile, criminalization of the youth due to unemployment and the inadequate level of education, and an increase of social tensions. These risks become even more serious, when taking into consideration the growing obstacles for student's migration within the country for economic reasons.

Some facts and trends indicate indirectly that involvement of adults in education and training does not grow, especially in the commercial sector. This could become an important obstacle for the modernization of the economy and economic growth.

Policy measures of the Russian Government only partially aim to solve the above mentioned problems. Within the context of this paper, it might be important to promote additional and proactive measures for enlarging the adults' involvement in professional education and vocational training. Sufficient growth of the adults education sector, including on an informal level, will not only support the modernization of economy and economic growth. It will also help universities to survive a dramatic decrease of the school-aged population. Universities will have to pay much more attention to delivering professional re-training professional and vocational programmes of different duration with a strong orientation towards the needs of 'customers', including both companies and persons. It is crucial to establish a statistical reporting system for adult vocational education and training data as well as to conduct research on a variety of topics in this field.

A very promising way for universities to diversify their education activities is the implementation of a wide range of distant learning programmes based on the latest information technologies. This is also the way to improve access to quality education for populations of poorer regions and regions with less capacity for quality tertiary education.

References

- AMOSOV, J. 2003. Kalifornija stavit na nas [California Hopes on Us]. *Ekspert*, 2(1), sentjabrja. (In Russian)
- ANDREEV, E. M. 2001. *Izmenenija prodolzhitel'nosti zhizni* [Changes in Life Expectancy]. Moskva: Knizhnyj dom "Universitet". (*Naselenie Rossii 2000*, 8-j ezhegodnyj demograficheskij doklad), pp. 82-93. (In Russian)
- ANDREEV, E. M., CARLSON, E. D., KHARKOVA, T. L., SHKOLNIKOV, V. M., and HOFFMANN, R. 2006. Concentration of Working-Age Male Mortality Among Manual Workers in Urban Latvia and Russia, 1970-1989. [Paper presented at] *The European Population Conference*, June 2006, Liverpool: UK.
- ANDREEV, E. M., KHARKOVA, T. and SHKOLNIKOV, V. 2005. *Izmenenie smertnosti v Rossii v zavisimosti ot zanyatosti i haraktera truda* [Mortality

- Changes in Russia by Employment and Job Status]. *Narodonaselenie*, 3, pp. 68-81. (In Russian)
- ANDREEV, E. M. and KVASHA, E. A. 2002. Osobennosti pokazatelej mladencheskoj smertnosti v Rossii [Infant mortality traits (peculiarities) in Russia]. *Problemy social'noj gigieny, zdravooohranenija i istorii mediciny*, 4, pp.15-20. (In Russian)
- ANDREEV, E. M., KVASHA, E. A. and KHAR'KOVA, T. L. 2003. Ozhilat' bystrogo snizhenija smertnosti v Rossii ne prihoditsja [A Fast Decline in Mortality Has not to Be Expected]. *Voprosy statistiki*, 11, pp. 13-26. (In Russian)
- ANDREEV, E. M., MCKEE, M. and SHKOLNIKOV, V. M. 2003. Health Life Expectancy in the Russian Federation: A New Perspective in the Health Divide Europe. *Bulletin of the World Health Organization*, 81(11), pp. 778-787.
- ANDREEV, E. M., NOLTE E., SHKOLNIKOV, V.M., VARAVIKOVA, E. and MCKEE, M. 2003. The Evolving Pattern of Avoidable Mortality in Russia. *International Journal of Epidemiology*, 32, pp. 437-446.
- ANDREEV E. M., SHKOLNIKOV, V. and MAKKI, M. 2002. Prodolzhitel'nost' zdorovoj zhizni. [Healthy Life Expectancy]. *Voprosy statistiki*, 11, s. 18.
- ANDREEV, E. M. and VISHNEVSKY, A. 2004, 40 let snizhenija prodolzhitel'nosti zhizni rossijan [Forty Years since Life Expectancy Decrease of Russians]. *Demoscope Weekly*, pp. 171-172. (In Russian)
<http://demoscope.ru/weekly/2004/0171/tema01.php> (Accessed 19 March 2008)
- ARHANGEL'SKY, V. N. 2006. *Factory rozhdaemosti v Rossii* [Factors of Russian Fertility]. Moscow: TEIS. (In Russian)
- AVDEEV, A., BLUM, A., ZAKHAROV, S. and ANDREEV, E. 1997. Réaction d'une population hétérogène à une perturbation: Un modèle d'interprétation des évolutions de mortalité en Russie". *Population*, 52(1), pp. 7-44.
- BOBAK, M., ROOM, R., PIKHART, H., KUBINOVA, R, MALYUTINA, S. and PAJAK, A. 2004. Contribution of Drinking Patterns to Differences in Rates of Alcohol Related Problems Between Three Urban Populations. *Journal of Epidemiology and Community Health*. 58(3), pp. 238-342.
- BOBYLEVA, S. N. (ed.). 2004. *Doklad o razvitii chelovecheskogo potentsiala v Rossijskoj Federacii za 2004 god*. [Human Development Report. The Russian Federation in 2004]. Moscow: Ves' Mir.
- CHUDINOVSKI, O. S. 2004. O kriticheskom sostojanii ucheta migracii v Rossii [A Note on Breaking Point of Migration Account in Russia]. *Voprosy statistiki*, 10, pp. 27-35. (In Russian)

- , 2006. Pravovye osnovy gosudarstvennogo statisticheskogo nabljudenija za migracionnymi potokami v Rossii [The Legislative Base of Statistical Account of Migration Flows in Russia]. *Voprosy statistiki*, 8, pp. 33-41. (In Russian)
- CHUDINOVSKIĖ, O. S., DENISENKO, M. and DONEC, E. 2003. *Migracionnye namerenija vypusknikov Vysshih uchebnyh zavedenij. Metodika provedenija i osnovnye rezul'taty vyborochnogo obsledovanija* [Attitudes to Migrate among Graduating Students. Methodological Issues and Results of Sampling Survey]. Moskva: MAKSS Press. (In Russian)
- DAVID, P., POTEKINA, R. and KISSELEVA, N. 2003. Facility Survey 2003. 3rd Round. Report of Main Findings (*USAID/Russia Women and Infant Health Project*). Moscow: John Snow Inc., pp. 13-15.
- DENISENKO, M. B. 2002. Emigracija iz Rossii po dannym zarubezhnoj statistiki [Estimating of Emigration from Russia on the Base of Analysis of Statistics of Foreign Countries]. *Demoscope Weekly*, 65-66, 29 April – 19 May. (In Russian)
- DENISENKO, M. B., HARAEVA, O. A. and CHUDINOVSKIĖ, O. S. 2003. *Immigracionnaja politika v Rossijskoj Federacii i stranah Zapada* [Immigration Policy in Russia and in Western Countries]. *Nauchnye trudy*, 61 R. Moscow: Instituta ekonomiki perehodnogo perioda. (In Russian)
- GEOTAR-MED. 2004. *Osnovnye pokazateli zdorov'ja materi i rebenka, dejatel'nost' sluzhby ohrany detstva i rodovspomozhenija v Rossijskoj Federacii* [Main Indicators of Health of the Mothers and Children, the Activity of Childhood Protection Service and Obstetrics in the Russian Federation]. Moskva: GEOTAR-MED. (In Russian)
- HENSHAW S.K., SINGH, S. and HAAS, T. 1999. The Incidence of Abortion Worldwide. *International Family Planning Perspectives*, 25 (Supplement), pp. 30-38.
- IVANOV S. 2002. Novoe lico braka v razvityh stranah. *Demoscope Weekly*, pp. 67-68, 20 May - 2 June.
- Issledovanie izbytočnoj smertnosti mužchin trudosposobnogo vozrasta: kratkij obzor rezul'tatov issledovanija po materialam konferencii v Izhevsk* [Study of Excessive Mortality among Men in Working Ages: A Brief Review of Research Findings Reported at the Conference in the City Izhevsk]. 2006. *Demoscope Weekly*, 241-242, 3-16 April. (In Russian)
- IVANOVA, E. 1996. Brachnost' zhenshchin v Rossii. [Nuptialité féminine en Russie.] *Naselenie i obščestvo*, 12. (In Russian)
- KARACHURINA, L. B. 2007. Migracionnaja situacija v Rossii v 2006 g [Migration Situation in Russia in 2006]. *Rossijskaja ekonomika v 2006 godu: tendencii i perspektivy*. Moscow: IEPP, pp. 480 – 497.

- KHALTURINA, D. A. and KOROTAEV, A. V. 2006. *Russkij krest* [The Russian Cross]. Moskow: KomKniga. (In Russian)
- KHARCHENKO, V. I., NAJDENOVA, N. G., BUROMSKIJ, I. V., KORJAKIN, M. V., VIRIN, M. M. and UNDRICOV, V. M. 2005. Ostraja intoksikacija etilovym spirtom, a ne ego surrogatami - osnovnaja prichina smertel'nyh otravlenij alkogolem v Rossii [Acute Intoxication by Ethyl Alcohol but Not Non Bevarage Drinks is the Main Cause of Letal Alcohol Poisonings in Russia]. *Narkologija*, 10, pp. 50-59. (In Russian)
- , 2004. Sravnitel'nyj analiz alkogol'noj smertnosti naselenija Rossii: problemy diagnostiki, traktovki, registracii, kolichestvennoj ocenki [Comparative Analysis of Alcohol-Related Mortality of Population of Russia: Issues of Diagnostics, Interpretation, and Quantities Estimation]. *Novosti nauki i tehniki, ser. Medicina*, 2, pp. 1-20 (In Russian)
- KLATSKY, A. 2004. Alcohol and Cardiovascular Health. *Integrative and Comparative Biology*, 44(4), pp. 324-329.
- LEON, D. A., SABUROVA, L., TOMKINS, S., ANDREEV, E.M., KIRYANOV, N., MCKEE, M. and SHKOLNIKOV, V. M. 2007. Hazardous Alcohol Drinking and Premature Mortality in Russia: A Population Based Case-Control Study. *Lancet*, 369, pp. 2001-2009.
- MACDONALD, P. 2006. Low Fertility and the State: The Efficacy of Policy. *Population and Development Review*, 32(3), pp. 485-510.
- MALEVA, T. M. and SINYAVSKAYA, O.V. 2006. Social'no-ekonomicheskie factory rozhdadnosti v sovremennoi Rossii: empiricheskie izmereniya I vyzovy social'noi politike [Social and Economic Factors of Fertility in Modern Russia: Empirical Measuring and Challenges to Social Policy]. *SPERO*, 5, pp. 70-97. (In Russian)
- MALYUTINA, S., BOBAK, M., KURILOVITCH, S., GAFAROV, V., SIMONOVA, G. and NIKITIN, Y. 2002. Relation between Heavy and Binge Drinking and All-Cause and Cardiovascular Mortality in Novosibirsk, Russia: A Prospective Cohort Study. *Lancet*, 360, pp. 1448-1454.
- MCKEE M. and BRITTON, A. 1998. A Positive Relationship between Alcohol and Heart Deceases in Eastern Europe: Potential Physiological Mechanism. *Journal of the Royal Society of Medicine*, 91, pp. 402-407.
- MESLE, F., VALLIN, J. and SHKOLNIKOV, V. 2000. Reversal of Mortality Decline: The Case of Contemporary Russia. *World Health Stat Q*, 51, pp. 191-206.
- MKRTCHAN, N. 2003. Vozmozhnye prichiny snizhenija immigracii v Rossiju v 2000-2001 godah (Plausible Reasons for Decline in Immigration in Russia 2000-2001). *Voprosy statistiki*, 5, pp. 47-50. (In Russian)

- , 2004a. Perepis' naselenija na juge Rossii: otkuda vzjalsja lishnij million naselenija? [Population Census in the Southern Russia: Where Did Extra Million Come From?] *Demoscope Weekly*, 155-156, 19 April – 2 May 2004 (In Russian)
<http://demoscope.ru/weekly/2004/0155/tema01.php> (Accessed 19 March 2008)
- , 2004b. Zapadnyi dreif vyunrirossiiskoi migracii [Western Drift in Russian Migration]. *Otechestvennye zapiski*, 4. (In Russian)
<http://www.strana-oz.ru/?numid=19&article=904> (Accessed 19 March 2008)
- , 2005. Migracija v Rossii: zapadnyj dreif [Internal Migration in Russia: The Western Drift]. *Demoscope Weekly*, 185-186, 10-23 janvarja 2005. (In Russian)
<http://demoscope.ru/weekly/2005/0185/tema01.php> (Accessed 19 March 2008)
- MEZHDUNARODNAYA ORGANIZACIYA PO MIGRACII (MOM).
 [International Organization for Migration - IOM] 2002. *Tendencii v oblasti migracii v stranah Vostochnoj Evropy i Central'noj Azii. Obzor za 2001-2002 gody* [Migration Trends in Countries of Eastern Europe and Central Asia. Review for 2001-2002]. Moskva: MOM. (In Russian)
- NEKIPELOVA, E. 2004. Sibirjaki – vpered! [Siberians – Go Ahead of All]. *Inostranec*, 1, 12 janvarja. (In Russian)
- NEMTSOV, A. 2000. Estimates of Total Alcohol Consumption in Russia, 1980-1994, *Drug and Alcohol Dependence*, 58(1-2), February 2000, pp.133-142.
- , 2001. Alkogol'naja smertnost' v Rossii 1980-90-e gg [Alcohol-Related Human Losses in Russia in the 1980s and 1990s]. *Addiction*, 97(11), pp. 1413-1425. (In Russian)
- , 2003. *Alkogol'nyj uron regionov Rossii* [Losses of Russian Regions Caused by Alcohol]. Moscow: NALEX. (In Russian)
- NIKITINA, S.Y. and KOZEEVA, G. M. 2006. Sovershenstvovanie statistiki smertnosti ot alkogolizma [Improvements in Alcohol-Related Mortality Statistics]. *Voprosy statistiki*, 11, pp. 21-23. (In Russian)
- PERMINOVA, E. 2004. Rynohnaja grimasa na lice rossijskoj nauki [The Face of Russian Science with the Market Grimace]. *Valovoj vnutrennij product*, 3, Iuly. (In Russian)
- PHILIPPOV, D., ANDREEV, E., KHARKOVA, T. and SHKOLNIKOV, V. 2004. Induced Abortion in Russia: Recent Trends and Underreporting in Surveys. *European Journal of Population*, 20, pp. 95-117.
- POPULATION REFERENCES BUREAU. 2006. *Population Data Sheet 2006*. www.prb.org (Accessed 19 March 2008)

- RJAZANCEV, S. V. 2001. *Vlijanie migracii na social'no-ekonomicheskoe razvitie Evropy: sovremennye tendencii* [Migration Impact on Social and Economic Development of Europe: Contemporary Trend]. Stavropol: Stavropol'skoe knizhnoe izdatel'stvo. (In Russian)
- RUSSIAN FEDERATION. MINISTRY OF HEALTH. 2002. *Zdorov'e naselenija Rossii i dejatel'nost' uchrezhdenij zdravooohranenija v 2001 godu (stat. materialy)* [Health of the Population of Russia and the Activity of Health Institutions in 2001 (Statistical Data)]. Moskva: Minzdrav RF. (In Russian)
- RUSSIAN FEDERATION. FEDERAL STATE STATISTICS SERVICE (ROSSTAT). 2004. *Rossiiskij statisticheskij ezhegodnik 2004* [Statistical Yearbook of Russia 2004]. Moskva: ROSSTAT. (In Russian)
- , 2005. *Chislennost' i migracija naselenija Rossijskoj Federacii v 2005 godu.* [Population and Migration in Russian Federation in 2005]. Moskva: Statisticheskij bjulleten. (In Russian)
- , 2006. *Demograficheskij ezhegodnik Rossii. Statisticheskij sbornik 2005-2006* [The Demographic Yearbook of Russia (DYR). Statistical Handbook 2005-2006]. Moskva: ROSSTAT. (In Russian)
- , 2007. *Demograficheskij ezhegodnik Rossii. Statisticheskij sbornik 2006-2007* [The Demographic Yearbook of Russia (DYR). Statistical Handbook 2006-2007]. Moskva: ROSSTAT. (In Russian)
- RUSSIAN FEDERATION. INSTITUTE FOR DEMOGRAPHY, STATE UNIVERSITY – HIGHER SCHOOL OF ECONOMICS. [2006]. [Population Projection]. (Produced 2006, unpublished).
- RUSSIAN FEDERATION. THE STATE COMMITTEE FOR STATISTICS (GOSKOMSTAT). 2003. *Osnovnye resul'taty Vserossiiskoi perepisi naselenija* [The Main Results of the All-Russian Population Census as of 2002]. Moskva: Goskomstat. (In Russian)
- <http://www.gks.ru> (Accessed 19 March 2008)
- SAKEVICH, V. 2006. Abort ili planirovanie sem'i (Abortion or Family Planning?). *Naselenie i obschestvo*, 105. (In Russian)
- SANDERSON, W.C. and SCHERBOV, S. 2005a. Average Remaining Lifetimes Can Increase as Human Populations Age. *Nature* 435, pp. 811-813
- SANDERSON, W. C. and SCHERBOV, S. 2005b. A New Perspective on Population Ageing. Vienna: Vienna Institute of Demography of the Austrian Academy of Sciences. (*European Demographic Research Papers* 3).
- SHKOLNIKOV, V. M., ANDREEV, E. and BEGUN, A. Z. 2003. Gini Coefficient as a Life Table Function: Computation from Discrete Data, Decomposition of Differences and Empirical Examples. *Demographic Research*, 8, pp. 305-358.

- SHKOLNIKOV, V. M., ANDREEV, E. M., JASILIONIS, D., LEINSALU, M., ANTONOVA, O. I. and MCKEE, M. 2006. The Changing Relation between Education and Life Expectancy in Central and Eastern Europe in the 1990s. *Journal of Epidemiology and Community Health*, 60, pp. 875-881.
- SHKOLNIKOV, V. M., ANDREEV, E. and MALEVA, T. (eds). 2002. *Neravenstvo i smertnost' v Rossii* [Inequality and Mortality in Russia]. Moskva: Signal. (In Russian)
- SHKOLNIKOV, V. M. and CHERVJAKOV, V. V. (eds). 2000. *Politika po kontrolju krizisnoj smertnosti v Rossii v perehodnyj period*. [Policies for the Control of the Transition's Mortality Crisis in Russia]. (Project No RUS/98/G51, UNDP/Russia, Moscow), p. 8. (In Russian and English languages).
- SHKOLNIKOV, V. M., MCKEE, M. and LEON, D. A. 2001. Changes in Life Expectancy in Russia in the Mid-1990s. *Lancet*, 357, pp. 917-921.
- USHKALOV, I. 2000. Intellekturnaja migracija i bezopasnost [Migration of Intellectuals and Security]. In: G. Vitkovskaja, and S. Panarin (eds). *Migracija i bezopasnost' v Rossii* [Migration and Security in Russia]. Moskva: Moskovskij Centr Karnegi, pp.109-151. (In Russian)
- VASIN, S. 2006. The Russian and "Western" Trajectories of Epidemiological Transition From the Point of View of Structure and a Calendar of Mortality by Causes of Death 1960-2005. In: *International Seminar Mortality in Countries of the Former USSR: Fifteen Years after Break-Up: Change or Continuity?* 12-14 October 2006, Kiev, pp. 68-99.
- VISHNEVSKY, A. G. (ed.). 2003. *Naselenie Rossii 2001. 9-yi ezhegodnyi doklad* [Population of Russia in 2001. The 9th Annual Report]. Moskva: KDU (In Russian)
- , 2004. *Naselenie Rossii 2002. 10-yi ezhegodnyi doklad* [Population of Russia in 2002. The 10th Annual Report]. Moskva: KDU. (In Russian)
- , 2006a. *Demografichesкая modernizacija Rossii 1900-2000*. [Demographic Modernization of Russia 1900-2000]. Moskva: New Publishing House. (In Russian)
- , 2006b. *Naselenie Rossii 2003-2004. 11-yi – 12-yi ezhegodnyi doklad* [Population of Russia in 2003-2004. The 11th – 12th Annual Reports]. Moskva: Nauka. (In Russian)
- , 2006c. Tendencii rozhdaemosti v Rossiiskoi Federacii v sravnenii s drugimi promyshlenno razvityimi stranami [Comparative Analysis of Fertility Trends in the Russian Federation and in other Industrialised Countries]. In: [International Workshop] *Low Fertility in the Russian Federation: Challenges and Strategic Approaches*, 14-15 September 2006, Moskva: Human Rights, pp. 9-26. (In Russian)

- , 2007. *Naselenie Rossii 2005. 13-yi ezhegodnyi doklad* [Population of Russia in 2005. The 13th Annual Report]. Moskva: GU-VShE. (In Russian)
- VISHNEVSKY, A. G., DENISENKO, M. B., and ELIZAROV, V. V. 2007. *Prioritety demograficheskoi Imigracionnoi politiki* [Priorities in Demographic and Migration Policies]. Moskva: RECEP (RECEP's Reports 14). (In Russian)
- ZAIONCHKOVSKAJA, Z. 2003. Trudovaja emigracija rossijskich uchenyh (Labour Emigration of Russian Scientists). *Demoscope Weekly*, 137-138. (In Russian)
<http://demoscope.ru/weekly/2003/0137/tema01.php>. (Accessed 28 February 2008)
- ZAKHAROV S. 1999. Kogortnyj analiz smernosti naselenija Rossii (dolgosrochnye i kratkosrochnye efekty neravenstva pokolenij pered licom smerti) [Cohort Analysis of Mortality of Russian Population (Long- and Short-Term Effects of Inequality of Generations at the Face of Death)]. *Problemy prognozirovaniya*, 2, pp. 114-131. (In Russian)
- , 2006a. Demograficheskii analiz efekta mer semeinoi politiki v Rossii v 1980-h gg. [Demographic Evaluation of Effects of Family Policy Measures in the 1980's.]. *SPERO*, 5, osen'-zima 2006, pp. 33-69. (In Russian)
- , 2006b. Vozrastnaya model braka v Rossii [Age Nuptiality Pattern in Russia]. *Otechestvennye zapiski*, 4, pp. 271-300. (In Russian)

Taking Demographic Developments into Consideration in the Configuration of Higher Education Policies in Sweden

Maria STANFORS and Kirk SCOTT

Introduction

Sweden is geographically one of the largest European countries, although sparsely populated, with about nine million inhabitants (*i.e.*, on average twenty inhabitants per square kilometer). The population is unevenly distributed across the country, with concentrations in the dynamic metropolitan areas of Stockholm, Göteborg and Malmö/Lund. The Swedish economy is characterized as being highly dependent on foreign trade, with a great reliance on exports (equivalent to almost fifty per cent of GDP in 2005). Recent decades have seen dramatic shifts in the industrial sector, with a gradual move away from traditional industries (*i.e.*, wood, iron ore, pulp and paper) towards high technology industries (*i.e.*, telecommunications and pharmaceuticals). The service sector has also gained in importance during this period. In international comparison, services in Sweden are characterized by a large public sector, but private services are expanding their relative share. The large public sector is not only an important provider of social services but also one of the main employers, especially of Swedish women. In international comparison, both Swedish women and men have high labour force participation rates and unemployment rates have traditionally been quite low. Unemployment rose substantially, from 1.5 to over eight per cent during the recession of the early 1990s. The unemployment rate peaked for men at 9.7 per cent in 1993 and at 7.5 per cent for women in 1995/1996. After a decade of severe economic recession and restructuring, economic growth picked up at the beginning of the twenty-first century. This upswing in the business cycle pressed open unemployment rate to just over four per cent in 2007, which is still relatively high in a pre-1990 Swedish context.

The economic crises of the 1990s and early 2000s highlighted the importance of higher education. The higher education sector expanded throughout the 1990s, partly as a response to the bad labour market situation. Given the uncertain labour market of the period, many individuals chose to continue educating themselves while waiting for better times. Moreover, the regional policy aspect of higher education as an engine of growth as well as the role of higher education in research and innovation activities was stressed. Higher education has long been strategic when it comes to achieving equity; however, there are still systematic inequalities with respect to gender, ethnicity and social background.

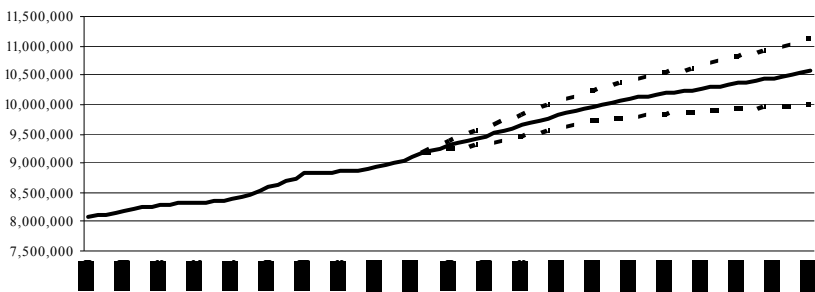
The report is organized as follows: first, an overview of the demographic situation in Sweden is provided. The main features of the current demographic situation are the ageing of the population, net immigration especially of refugees and their dependents, and the sharp variations over time in fertility rates that lead to varying cohort sizes. According to prognoses, these features are predicted to remain (Statistics Sweden, 2005). Variation in fertility rates and cohort size are of relevance to higher education since they have an impact on the potential number of people wishing to enroll in higher education. After a decline in the 1990s, the age groups in which many decide to start studying began to increase in size. The number of twenty-somethings is predicted to increase by thirty per cent compared to today, peaking in 2010. Because of the low birth rates of the 1990s, there will then be a sharp decline in potential higher education entrants until 2020, when the group will again be about the same size as it is today (Swedish National Agency for Higher Education, 2004). The demographic overview is followed by a description of the Swedish higher education system. Quantitative as well as qualitative aspects of educational expansion are discussed and special reference is given to the impact of demographic shifts on tertiary level of education. Thereafter, some higher education policies in general as well as policies specifically relevant for handling the effects of demographic shifts are discussed. Finally, the report ends with conclusions and recommendations.

1. The Demographic Situation

1.1. Country population

As mentioned above, the Swedish population today is slightly more than nine million. During the past couple of years the annual growth rate of the population has been about 0.4 per cent and according to prognoses by Statistics Sweden, the population will continue to grow by 0.42 per cent annually, on average. Figure 1 gives an overview of the population development from 1970 through today, as well as the population projections until 2050. Given the medium projection, the Swedish population is estimated to be roughly 10.5 million in 2050. Given Sweden's position as the third largest country in Western Europe, this relatively low population growth implies a continued very low population density by European standards. It should be noted that the Swedish population is unevenly distributed across the country, with the south and the Stockholm area being more densely populated while northern Sweden constitutes the most sparsely populated area.

Figure 1. Population 1970–2006 and population projection 2007–2050. Upper and lower bounds at 5 per cent



Source: Statistics Sweden. Statistical Database, <http://www.ssd.scb.se/databaser/makro/start.asp>

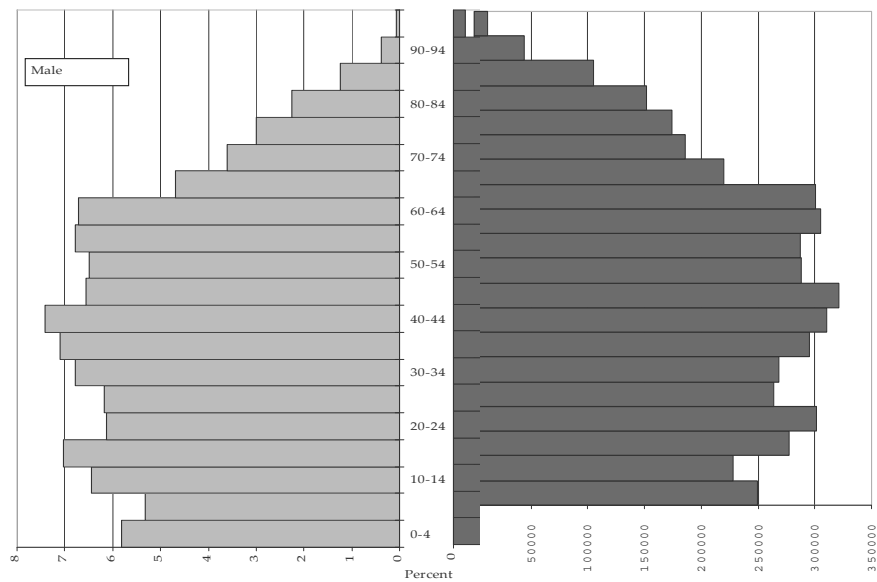
1.2. Age distribution

The age distribution of the Swedish population is similar to that of most developed countries, with a fairly rectangular age pyramid up to the

highest ages. Figure 2 shows the age distribution in 2006. From this figure, a few historical legacies are discernible. First, since Sweden was not involved in the two World Wars, there are no signs of war losses and there is more of an equal gender balance compared to countries like France and Germany. Second, the fact that Swedish fertility variations has been relatively dramatic in international comparison is noticeable in the shifts between large and small cohorts due to baby booms in the mid-1940s, early 1960s and late 1980s and early 1990s, and baby busts in the 1930s, 1970s and 1990s. The country's age distribution is likely to change somewhat in the next few decades, given the direction of demographic change in the country. Figure 3 shows the actual and projected share of the population in working ages, as well as the share of age groups under twenty and over sixty-five, which is the general age of retirement in Sweden¹. What is clearly visible from the projected age structure in Figure 3 is that the dramatic decline in the working population that has been feared is perhaps overestimated, with a drop from just under sixty per cent to around fifty-five per cent over the next four decades. What is also visible, however, is a shift in the groups constituting the numerator in the dependency ratio. Today, Sweden has a larger share of people under the age of twenty than over the age of sixty-five, which currently and in the coming years serves as a pressure on the schooling system and on higher education (see below). This relationship is projected to change to a situation where there are more elderly than young. By 2015, the number of people older than sixty-five is predicted to have increased by twenty-five per cent while the size of other age cohorts will be more constant. This means that fewer people of working ages will carry the burden to support a larger number of retired and old aged. This also means an increasing demand for health care and social services. Moreover, effects of this change on the financing of pensions and various other public transfer systems will be considerable.

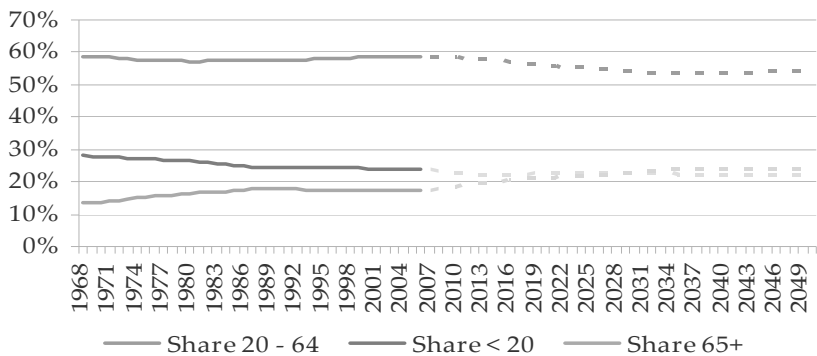
¹ Employees now have the right to continue working until the age of sixty-seven. The actual average age of retirement is, however, lower than sixty-five. It varies according to gender, educational background and income. In the early 2000s, it was calculated to be, on average, about sixty-two.

Figure 2. Swedish population by age in 2006



Source: Statistics Sweden. Statistical Database, <http://www.ssd.scb.se/databaser/makro/start.asp>

Figure 3. Share of population in working age 1968–2006 with projections 2007–2050

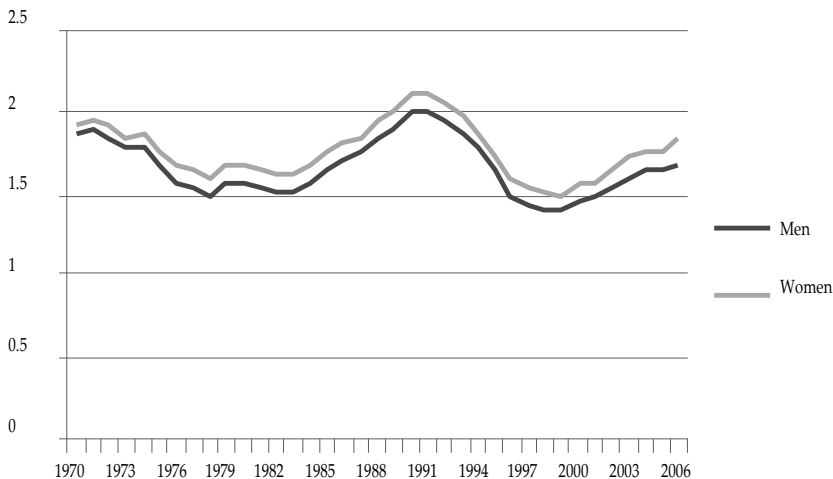


Source: Statistics Sweden. Statistical Database, <http://www.ssd.scb.se/databaser/makro/start.asp>

1.3. Fertility rates

The majority of this shifting age structure has been caused by declining fertility. Figure 4 shows the total fertility rates for men and women from 1965 through 2006. Despite being characterized by low fertility during most of this period, Sweden has been among the countries with the highest fertility in Western Europe. The volatility of the Total Fertility Rate (TFR), however, is much greater in Sweden than in most other European countries, with a peak in 1990 and a trough in the end of the 1990s. It should be noted that Sweden, during the late 1990s and early 2000s has had higher fertility rates than, for example, Italy, Spain and a number of Eastern European countries. Sweden's statistics project that TFR will stabilize around 1.65 under the low-fertility assumption and that it will stabilize around 2.05 under the high-fertility assumption. Given stabilization in fertility levels, we should see the age structure starting to be influenced by other demographic changes.

Figure 4. Total fertility rate (male and female) 1970–2006



Source: Statistics Sweden. Statistical Database, <http://www.ssd.scb.se/databaser/makro/start.asp>

The sharp decline in total fertility and the all-time low fertility rates all over Europe in the last decades, have caused serious concern among both demographers and politicians, and raised several questions about the

determinants of fertility dynamics. One of the main explanations for this decline in total fertility is the increasing age at childbearing (Bongaarts, 1999; Kohler et al., 2002; Lesthaeghe and Willems, 1999). In order to understand the development of fertility period and the postponement of childbearing it is crucial to study the determinants of the decision to become a parent and have a first child. Research on the determinants of becoming a parent suggests several factors that make late childbearing a rational response to socio-economic change. These factors include, first and foremost, increased incentives to invest in higher education and labour market experience, chances of establishing a career as well as a lasting relationship with a partner, and the role of economic uncertainty that may be particularly acute in early adulthood.

The future development of fertility rates is very likely to be highly correlated to the educational orientation of young people. Higher education not only helps to delay the transition into adulthood but also the timing of first birth for men as well as for women (Dribe and Stanfors, 2007). Much of the literature on delayed childbearing and childlessness has stressed the increased involvement of women in education and the increased opportunities for women to pursue a career as the most important explanations. Numerous studies have shown that educational enrolment has a negative effect on fertility and so has educational attainment, and thus women with higher education postpone first births longer and have fewer children than less educated women. Studies on the contemporary situation in the United States as well as in a number of European countries show that women with higher education are more likely to remain childless than women with lower educational attainment.

In the economic theories of fertility, low education is associated with higher fertility at younger ages because less educated women tend to specialize early in home production and the rearing of a family. Higher education is associated with low fertility at increasingly older ages, as these women are more career-oriented, have better job prospects and thus specialize in market work. It may also be an issue of self-selection, *i.e.*, that women who invest in higher education have little family orientation and do not want children, or that attitudes toward childbearing and family formation change while in education.

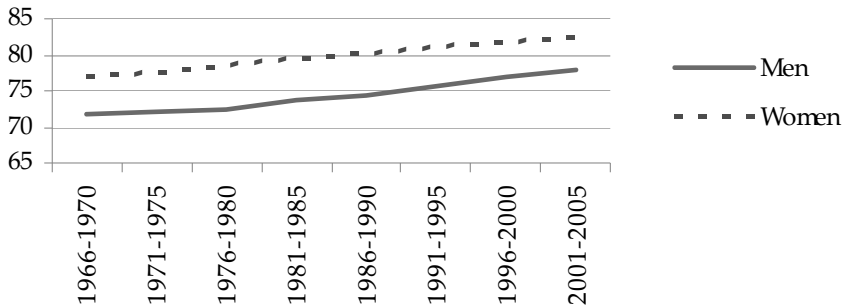
Educational attainment or enrolment has usually been seen as incompatible with reproduction for women, which is indicated by the negative effects of early childbearing on educational attainment found in some studies. Other studies show no or only a very limited effect of early childbearing on educational attainment. Educational attainment seems to be less of a problem for men as there actually seems to be a positive association between education and fertility, probably working through higher income and relative attractiveness in the marriage market for men that are more educated. Whereas women with higher education have somewhat lower fertility and are more likely to stay childless than are other women, men with higher education have higher fertility and are less likely to stay childless than are less educated men. Nevertheless, educational enrolment may pose the same problem for young men as for young women and thus education, as a current activity, may be seen as incompatible with reproduction, irrespective of gender, and decrease the probability of becoming a parent. Education is a time-intensive investment and it affects the ability to live an 'adult' independent life and have a family of one's own. Moreover, in Sweden, although less dependent on their parents than in many countries, students are highly dependent on government loans and thus end their educational careers with considerable debt. Higher education is also challenging and demanding. Thus, finishing higher education and starting a career may be a prerequisite for childbearing. Only if it is much easier for men than for women to combine educational enrolment with being a parent, the effect of enrolment on men's fertility will be small.

Well-educated women also seem to respond strongly and postpone fertility the most when economic conditions worsen. The delay in first births in Sweden in the 1990s, for instance, was to a high degree caused by a combination of unfavourable economic conditions with increased unemployment and economic insecurity, and an increase in the share of women of childbearing ages in education. The postponement of fertility in the 1990s resulted in a catching-up process in the early 2000s as the economy improved and the future for many young adults became more prosperous.

1.4. Life expectancy

Another development in Sweden that should begin to affect the age structure in coming decades is the increase in life expectancy that has been occurring in a near-linear fashion throughout the past 150 years. Figure 5 shows the actual development in life expectancy at birth for both men and women from 1970 through 2006. The projections predict the trend of increasing average age of inhabitants to continue to rise and call for a life expectancy at birth of over eighty-six years for women and almost eighty-four years for men by 2050.

Figure 5. Life expectancy at birth (men and women) 1966–2005



Source: Statistics Sweden. Statistical Database, <http://www.ssd.scb.se/databaser/makro/start.asp>

1.5. Morbidity

General morbidity figures are difficult if not impossible to obtain for Sweden. The two potential sources are both flawed and as such deemed unusable for any international comparison. One source is the hospital discharge register, but this only has records on sickness requiring an overnight stay at the hospital. Given varying praxis concerning out-patient treatment, this source would yield biased results. The other potential source of information is from registers of transfers due to sickness absence from work. This source is also unusable since it only includes individuals who are in the labour force and, more seriously, there are multitudes of reasons

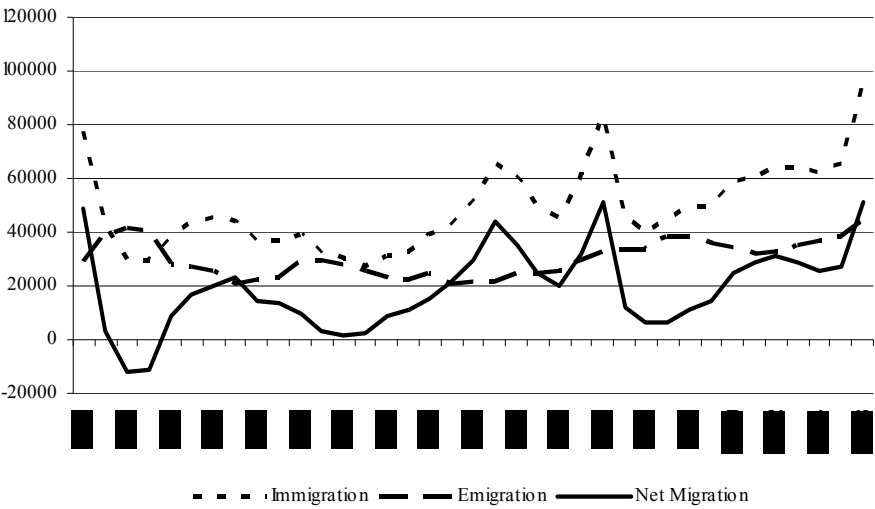
for sickness absence which do not have anything to do with somatic illness. As such, we have chosen to omit morbidity figures in our presentation.

1.6. Migration and cultural diversity

Sweden has been a country of immigration for more than half a century. During the 1960s, labour-force migration peaked. Most migrants then came from the neighbouring Nordic countries, predominantly from Finland. In the mid-1980s, immigration to Sweden dramatically changed its character, from predominantly labour migration to almost exclusively refugee migration. The number of refugee migrants increased strongly and culminated during the late 1980s to early 1990s. Migrants now came from a much wider range of countries than before, from almost all corners of the world. The most recent period of high immigration in the 1990s coincided with a drastic turnaround in the Swedish labour market. After several decades of nearly full employment, unemployment suddenly rose in the early 1990s and remained high until the end of the same decade. The newly arrived population subgroups of Sweden faced severe difficulties establishing themselves in the labour market. For many groups, unemployment was extremely high, triggering a debate about the causes of their failed integration into Swedish society. The literature deals with factors such as mismatch of immigrants' human capital with labour demand, discrimination by Swedish employers, and various structural changes in the Swedish labour market in explaining the new immigrants' lack of success (Scott, 1999; Rosholm et al., 2006).

The migration flows from 1970 until today are visible in Figure 6. From this figure, it is clear that immigration has been higher than emigration for nearly every year during this period. Labour migration to Sweden ended in the early 1970s, and since that time migrants have predominantly come either from the neighbouring Nordic countries or as refugees from non-European countries. Table 1 lists the ten most frequent countries of origin for immigrants living in Sweden today. While the majority of these countries are European, this is a stock measure. Looking at the flow of immigrants, we see that over fifty per cent are arriving from non-European countries.

Figure 6. Immigration and emigration, 1970–2006



Source: Statistics Sweden. Statistical Database, <http://www.ssd.scb.se/databaser/makro/start.asp>

Table 1. Foreign born in Sweden from the 10 largest emigration countries, 2006.

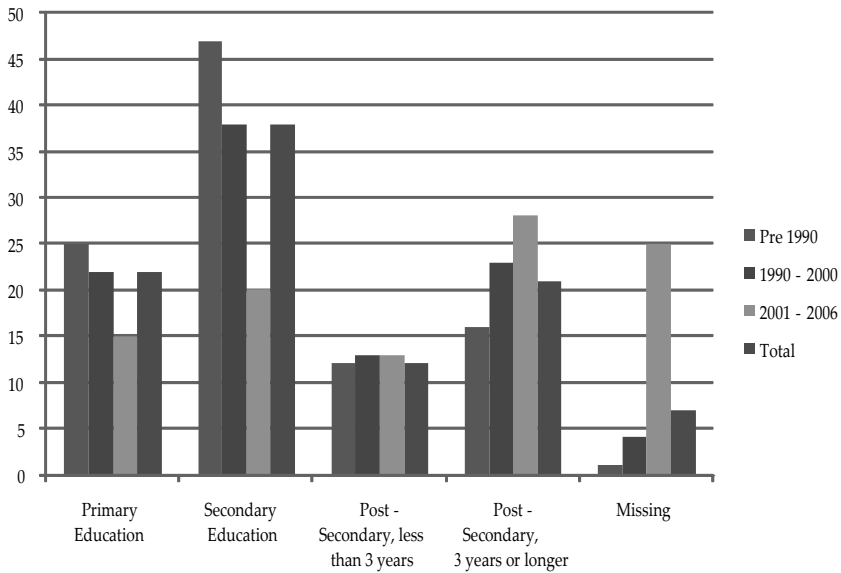
	Men		Women
Finland	74,155	Finland	106,751
Iraq	45,958	Iraq	36,869
Yugoslavia	37,485	Yugoslavia	36,186
Iran	29,584	Poland	31,955
Bosnia-Herzegovina	27,354	Bosnia -Herzegovina	28,111
Denmark	23,695	Iran	26,163
Germany	19,835	Norway	25,382
Poland	19,788	Germany	23,209
Turkey	19,746	Denmark	20,749
Norway	19,345	Turkey	17,361

Source: Statistics Sweden. Statistical Database, 2006; <http://www.ssd.scb.se/databaser/makro/start.asp>

Figure 7 shows the educational level of immigrants broken down by the period of entry into Sweden. What is striking about this is the overall increase in educational level of recent immigrants relative to their predecessors. It appears as if the immigrants arriving during the early years

of the twenty-first century are more highly educated, with a lower share reporting primary and secondary education, and a higher level reporting post-secondary education. One caveat should be mentioned here: the recent migrants have a much higher share not reporting any educational level. If this “missing” value were random, then the pattern would still hold. There is, however, a possibility that this value is non-random, implying that any discussion of the overall educational level of the recent immigrants must be done with some caution.

Figure 7. Educational Level of the Immigrant Population, 2006



Source: Statistiska Centralbyrån, 2005.

Table 2 shows the educational levels in more detail. A pattern appears here with immigrants from the more developed countries of Europe, North America and Oceania having higher levels of university education, and lower levels of primary education. For immigrants from other countries the pattern is not quite as clear, but it can generally be said that there is a polarization towards the highest and lowest educational levels, with relatively fewer individuals with secondary education.

Table 2. Educational Level by Sex and Nationality. Age 25 – 64, 2006

Birth Country	Sex	Population	Primary Schooling (per cent)	Secondary Schooling utb. (per cent)	Post- secondary, shorter than 3 years (per cent)	Post- secondary, 3+ years (per cent)	Missing (per cent)
Total	Women	2,376,927	14	46	15	24	1
	Men	2,444,007	18	48	13	18	2
	Total	4,820,934	16	47	14	21	1
Swedish Born	Women	1,976,235	13	48	16	24	0
	Men	2,059,465	18	50	14	18	0
	Total	4,035,700	15	49	15	21	0
Foreign Born	Women	400,692	22	37	13	22	6
	Men	384,542	21	40	12	19	8
	Total	785,234	22	38	12	21	7
Nordic Born (Excluding Sweden)	Women	94,952	22	44	12	19	3
	Men	80,093	27	44	9	13	7
	Total	175,045	24	44	11	16	5
EU-27 (excluding Nordic)	Women	70,151	11	36	14	31	7
	Men	68,387	13	36	12	27	12
	Total	138,538	12	36	13	29	9
Europe (excluding EU-27 and Nordic)	Women	70,182	30	39	9	17	5
	Men	68,926	24	49	11	12	4
	Total	139,108	27	44	10	14	5
Africa	Women	24,000	28	37	10	13	12
	Men	30,529	20	39	14	19	8
	Total	54,529	23	38	13	16	10
North America	Women	8,339	8	25	16	43	9
	Men	9,649	8	26	18	39	10
	Total	17,988	8	26	17	40	9
South America	Women	21,698	18	41	15	22	4
	Men	20,213	18	46	15	18	3
	Total	41,911	18	44	15	20	4
Asia	Women	107,753	26	31	13	21	8
	Men	103,484	23	33	14	22	8
	Total	211,237	24	32	14	22	8
Oceania	Women	984	6	25	16	39	13
	Men	1,850	7	23	18	37	15
	Total	2,834	7	24	17	38	14

Source: Statistiska Centralbyrån, 2007.

The labour market situation of immigrants is of particular importance to the issue of higher education. While immigrants may arrive in Sweden with completed educations, it may be necessary to complement this education with some additional training after arrival. The degree to which this is necessary is largely determined by the demand for immigrant labour. If the demand is high, additional education is unlikely to be pursued, since employment can be obtained without further investment. The situation for immigrants deteriorated during the recession of the 1990s, and is slowly recovering. This recovery has been slower than that for natives, with immigrants having higher unemployment and lower labour force participation than natives. Many studies, using various sources of Swedish data, have showed that labour force attachment among immigrants has been weakening over the past three decades, and the relative incomes earned by those immigrants actually in the labour force have been declining. Prior to 1970, immigrants exhibited economic performance similar to, if not better than, native-born Swedes with the same occupations. After 1970, there are a number of studies indicating that this shifting immigrant labour market performance is not merely a reflection of shifting quality of immigrant cohorts, but also of shifting labour market conditions that adversely affect all migrants, even those from cohorts that were fairly successful in earlier years.

2. An Overview of the National Higher Education System

2.1. Expansion of institutions and scope of higher education

Some of the higher education institutions in Sweden are old and bear a long tradition. The University of Uppsala was founded in 1477 and the University in Lund dates back to 1666. The original task of higher education was to train the church's clergy, but this mission was later expanded in order to secure an adequate supply of educated government officials. Institutes of technology and medicine were established in the nineteenth century in order to provide vocational training at an academic level. The early twentieth century witnessed a

growth of vocational and professional programmes at different institutes, and higher education in the post-war period experienced a major expansion of research. In 1977, a reform changed higher education into a unitary system comprising academic as well as vocational programmes of different lengths. Higher education was further reformed in the 1990s and expanded continuously into the early 2000s. Reform of higher education has led to the foundation of new institutions, with a varied supply of programmes and courses, localized throughout Sweden as both a regional growth investment and a component of an active labour market policy. Today, higher education is provided at thirty-six places in Sweden, at fourteen universities and twenty-two university colleges. The system also encompasses thirteen educational centers, such as Chalmers University of Technology in Göteborg and Stockholm School of Economics.

2.2. Increased access to higher education, irrespective of age, gender and background

A major goal of higher education policy throughout the post-war period has been equalization of access to higher education. The primary concern from the 1940s into the 1970s was unequal access with respect to social background. In the 1970s, there was increased attention paid to the role of gender and the high degree of segregation in the educational system. Various initiatives were intended to change the educational choices of women as well as of men, with the primary effect being far more change when it comes to women than men (Stanfors, 2003). Gender segregation has thus remained a factor in the Swedish system.

Looking back at the twentieth century, one of the most remarkable developments was the expansion of the mass education of young people, especially young women. The long-term trend in education has been towards a higher level of female involvement, yet it has fluctuated in accordance with economic cycles and periods of educational reform. Today, the number of women exceeds that of men in both secondary and higher education. The difference between

young men and women is today not a matter of the extent of educational participation, but rather a matter of the education's relevance for future labour force participation.

With an increasing share of foreign-born students during the past decade, there has also been an increasing emphasis on diversity in higher education. The ultimate goal is the equalization of participation irrespective of ethnicity, gender and social background.

As seen in Table 3, higher education comprised 331,062 students in 2005. In 2004/2005, there were 142,401 entrants of which almost 82,000 were students for the first time. Their median age was 22.3 years and women dominated among entrants. Foreign-born in Sweden were less likely than native Swedes to enter higher education, and there also exists a clear association between social background and higher education. Although students in Sweden are seen as independent adults and all students have access to the student grant/loan system, those with highly educated parents are more likely to enter higher education than those with working class parents and white collar parents without higher education. Table 3 also indicates that higher education is a recurring phenomenon for many. Since the late 1970s, those older than twenty-five years and with four or more years of labour market experience have been given special access to higher education. This opportunity has been a way to combat social inequality and to promote lifelong learning.² The fact that women have been more inclined than men to take up on this opportunity has contributed to an equalization of educational level of the Swedish population with respect to gender.³

² In international comparison, Sweden has long had a large share of older, many of them returning, students in higher education.

³ One reason why women have been more inclined to take on higher education later in life is that they have had a relative disadvantage to men and tried to catch up via schooling. Another explanation is that women are less likely to get on-the-job training and therefore take regular courses.

Table 3. Some characteristics of higher education (undergraduate) in Sweden in 2004/2005

Entrants	142,401	First time entrants	81,838
Men (per cent)	44	Women (per cent)	56
Working-class background (per cent)	24		
Non-Swedish (per cent)	16		
Entrants with parents with higher education (per cent)	30		
Total number of students	331,062		
Overall achievement (per cent)	83		
Returning students (per cent)	25	Returning after graduation (per cent)	10
Enrolment profile (per cent)			
<i>Humanities, social sciences, law</i>	43	<i>Science</i>	12
<i>Technology</i>	18	<i>Other</i>	27
Total number of degrees	57,099	First time degrees (per cent)	73
- <i>Master's degrees</i>	11,279	Degree (or 120 credits) within 7 years (per cent)	73
- <i>Bachelor's degrees</i>	13,351		
- <i>Engineers</i>	4,417		
International exchange			
- <i>Incoming students</i>	12,648		
- <i>Outgoing students</i>	7,007		

Source: Statistiska Centralbyrån, 2006.

Table 4. Educational level of the Swedish population aged 25-64 years in 1971, 1985 and 1997 (per cent)

	1971		1985		1997	
	Men	Women	Men	Women	Men	Women
25-44 years						
Educational level						
Primary	51	57	29	28	19	15
Upper secondary						
< two years	21	25	29	34	39	38
> two years	17	7	14	9	12	14
Higher education						
< three years	3	5	8	12	16	19
> three years	8	6	12	11	12	12
Missing values	-	-	8	6	2	2
Total	100	100	100	100	100	100
	1971		1985		1997	
	Men	Women	Men	Women	Men	Women
45-64 years						
Educational level						
Primary	69	79	52	57	35	31
Upper secondary						
< two years	15	13	19	25	24	35
> two years	10	3	12	3	16	7
Higher education						
< three years	2	3	5	5	10	13
> three years	4	2	8	7	14	13
Missing values	-	-	4	3	1	1
Total	100	100	100	100	100	100

Source: Statistiska Centralbyrån, various years.

Table 4 shows how the educational level of the Swedish population has increased since 1971. In international comparison, Sweden is one of the top five countries in the world (together with Canada, the USA, Japan and Finland) in terms of share of the population twenty-five to sixty-four years with higher education. By examining education from an age and gender perspective we can trace a change in educational behaviour over time. Although compulsory schooling has been extended, and should account for some of the higher educational levels, this cannot be the full answer to why more people stay in school longer. Compulsory education today comprises only the first nine years of schooling, and thus ends at the age of sixteen. Since the 1960s, however, there has been an increasing tendency to move on to secondary education, with almost all young men and women remaining in upper secondary school for another three years following the mandatory schooling (the transition rate from compulsory to secondary education since the mid-1990s has been roughly ninety-eight per cent). Education is obviously regarded as a worthwhile investment as an entrance ticket into the labour market and a prerequisite for career advancement. The current goal for higher education is that fifty per cent of all twenty-five-year-olds should continue with their education after secondary school. The transition rate to higher education within three years from graduation from secondary school is roughly forty per cent, and is somewhat higher among women than among men. Women are, however, not only more inclined to enter higher education than men, but they are also more prone to graduate. In 2005, the educational level of the Swedish population had changed further (Table 5) with an increasingly small share of the total population having only primary education and a definite catching-up for women. In 2005, a larger share of women aged twenty-five to forty-four years had higher education than did men, irrespective of ethnicity, and the same goes for women aged forty-five to sixty-four years, with the exception for those born outside Europe.

Table 5. Educational level of the Swedish population aged 25-64 according to birth region in 2005 (per cent)

25-44 years		Educational level						
Birth region	Primary education		Secondary education		Higher education		Missing values	
	Men	Women	Men	Women	Men	Women	Men	Women
Sweden	11	7	54	49	35	44	0	0
Nordic countries	15	11	45	44	29	41	10	4
Europe	16	17	42	37	33	40	9	6
Rest of the world	20	22	36	34	36	36	8	8
Total	12	9	52	46	35	43	2	1
45-64 years		Educational level						
Birth region	Primary education		Secondary education		Higher education		Missing values	
	Men	Women	Men	Women	Men	Women	Men	Women
Sweden	26	19	46	47	28	33	0	0
Nordic countries	36	28	43	45	17	26	4	2
Europe	23	27	45	39	29	30	3	4
Rest of the world	21	29	37	32	38	32	4	7
Total	12	9	52	46	35	43	2	1

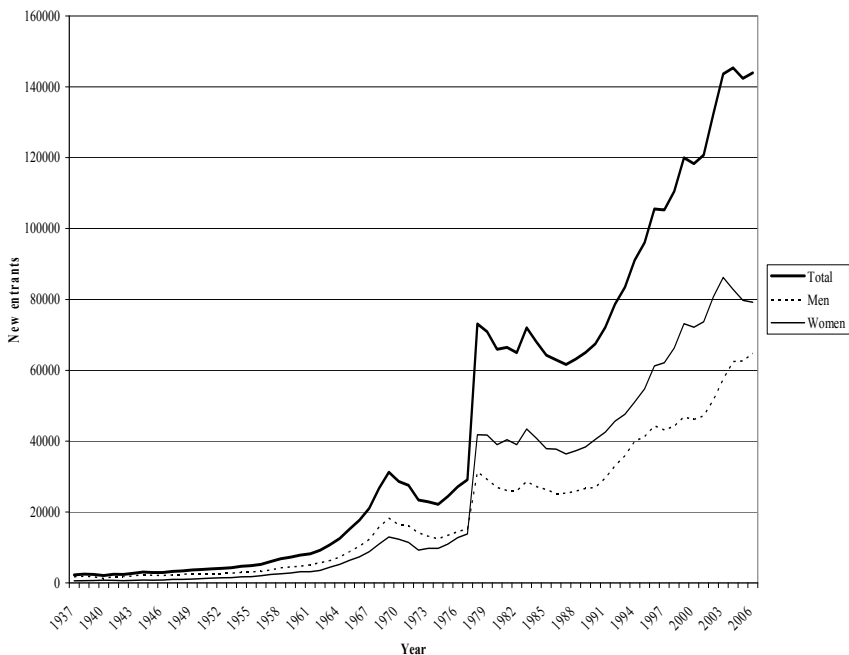
Source: Statistiska Centralbyrån, 2005.

2.3. Increased number of new entrants

Figure 8 provides a long-term perspective, and shows a dramatic increase in higher education throughout the twentieth century. The first noticeable shift takes place in the 1960s. By 1960, higher education was still somewhat exclusive and male-dominated, since most post-secondary educational programmes undertaken by women were not formally categorized as higher education. The total number of new entrants in 1960 was 7,855. As can be seen in Figure 8, there was an increase in the number of entrants into higher education during the 1960s. The increase was somewhat stronger for men than for women, but as it tapered off around 1968, the decrease was also somewhat stronger for men than for women. The increased demand for higher education during the 1960s preserved the established pattern of gender segregation by field of study. The changes taking place were rather equally distributed with, for example, the decreasing relevance of arts and

science occurring for both women and men. Social sciences were highly demanded, with the demand being equal in terms of relative attractiveness for women and men. This expansion was a way of accommodating the large cohorts born in the 1940s that, in a previously unseen way, had graduated from upper secondary school, probably in order to ameliorate their credentials to get a comparative advantage and sort themselves to a more attractive position in the job market (cf. Easterlin, 1981). The increased propensity to move on to higher levels of education is, however, not altogether driven by demographic changes. A large part of the change in transition rates to upper secondary as well as higher education in Sweden can, since the 1970s, be explained by fundamental behavioural changes, especially for women (Stanfors, 2007).

Figure 8. New entrants in higher education, 1937/38 – 2005/2006



Source: Statistiska Centralbyrån, various years.

In 1977, the total number of new entrants was 29,128. The following year, the equivalent was 73,100. The large increase in new entrants into higher education in the late 1970s is explained by the reform of 1977. This reform included a large number of female-dominated post-secondary programmes into the university system. Thus, women overtook men when it came to the number of new entrants, but they were disproportionately segregated. Since 1977, women have continued to comprise the majority of university students. Nevertheless, men kept their lead position in many prestigious programmes and in post-graduate education.

Segregation changed dramatically with the reform of 1977. The inclusion of several female-dominated post-secondary programmes was accompanied by a new way of categorizing higher education into five sectors and other courses. Other courses with varied orientation attracted a large part, almost half, of the student body that entered higher education. With the new categorization, women dominated education and health services and men dominated technology. These tendencies were persistent throughout the 1980s. It is interesting to note that male domination of technology was successively reinforced although women gradually moved into that field, whereas the relative attractiveness of education and health care at first increased for women but then decreased in favour of a more varied educational choice (Stanfors, 2003).

In the 1990s, the educational system was fundamentally reformed again. Primary education was made even more universal, the choice between separate courses was abolished and the grading system was renewed. Secondary education was expanded and all programmes were made three-year and preparatory for higher education. The increased emphasis on the role of human capital in the 'New Economy' and the importance of credentials and skills in the tight labour market encouraged more people to enter higher education. The severe economic recession of the 1990s caused even more people to see higher education as a means of either improving their chances in the labour market or simply avoiding unemployment. Altogether, the number of new entrants into higher education rose from 67,474 in 1990 to 105,543 in 1996, an increase of fifty-six per cent. This expansion has continued, but at a slower pace (Table 6). By the 1990s, women had firmly established their lead position in terms of participation in higher education, but segregation persisted. This indicates that equality

in education cannot be achieved merely by increased access and numbers. The question of *what kind* of education individuals actually pursue is just as important as the question of *how much* education different groups acquire.

Table 6. New entrants into higher education, first time students, new entrants studying their first hand choice and still in higher education after a year, 2000–2006

Year	New entrants	First time students	New entrants, studying first hand choice (per cent)	Still in higher education after a year (per cent)
2000	118,274	70,043	n. a.	n. a.
2001	120,868	72,066	74	68
2002	132,442	78,298	76	68
2003	143,725	83,319	76	69
2004	145,353	83,301	73	67
2005	142,401	81,838	73	65
2006	143,968	82,719	75	64

Source: Swedish National Agency for Higher Education, Database 2006.

2.4. Determinants of the expansion of higher education in Sweden

The expansion of higher education in Sweden is closely connected to economic change, demographic developments, and behavioural changes on an individual level. In brief, the twentieth century features increased gender equality in educational opportunities and educational attainment. The equalization process when it comes to educational segregation has, however, been much slower. Throughout recurrent periods of reform, equal educational opportunities were realized while gender differences lingered on. Important periods of reform were the 1920s, the 1940s, and the 1960s and 1970s. During the 1990s, the educational system was reformed as well, but with less concern for equalization of opportunities as the previous reforms. It may be noted throughout the debates preceding educational reform in twentieth century Sweden that issues of class appear much more often than gender in discussions of equity and efficiency, and in discussions of links between education and the labour market and economic development. Jönsson (1992), by referring to Fürst, argues that there is a general tendency for educational reform to be more oriented toward, and

relevant to, male education than to female education, with far more concern for the changing demand and supply conditions in traditionally male-dominated segments of the labour market. In hindsight, we can see that the demand for higher education was high during the period of educational expansion in the 1960s, although the late 1960s and early 1970s saw demand decrease as fewer secondary graduates continued into higher education due to favourable labour market conditions. Demand for higher education increased again in the mid-1970s, especially for women. The labour market situation had worsened by this time, and the reform of 1977 expanded traditional higher education into new and very much female-dominated fields of study. The 1977 reform was equalizing, not only when it came to gender but also age and social class. During the 1980s, the expansion of higher education stalled with fewer new entrants, but a retained proportion of women. Women and men were not only specializing in different subjects, they were also recruited from different subject areas and different programmes in secondary education, with more women than men being admitted to higher education on the basis of vocational education. Since programmes in the fields of science and technology mainly recruit their students from science and technology programmes in secondary school, gender differences within the field lived on in higher education. The proportion of women was retained, but it increased somewhat in other fields of study.

Demand for higher education increased again in the late 1980s, and continued to be high throughout the 1990s. Again, although more women than men entered higher education, gender segregation persisted, especially within the field of technology. A number of longer, traditionally prestigious programmes, such as law and medicine, became gender equal, but technology, education, and caring remained highly gender segregated. A variety of formal and informal barriers in the early twentieth century made it difficult for girls and women to participate in education to the same extent as boys and men. With equal opportunity reforms, these barriers were torn down. Although there no longer are any formal obstacles, educational choice still differs and there is a strong tendency for students to follow educational programmes on the basis of gender stereotypes, which lead to conventional female and male occupations.

It is not clear to what extent gender segregation according to field of study reflects individual choice, tracking processes within the school system, sex-role socialization, or pressure from parents and peers. Moreover, it is not clear to what extent public policy or reform affects and changes these patterns or whether educational segregation is the result of market forces. Educational segregation should most likely be analyzed within a framework of economic structural change with specific focus on the demand for female labour, since periods of educational reform are also periods of economic and social change. During these periods, rising female-to-male relative wages as well as the emergence and growth of the service sector contributed to the alteration of the incentive structure, transformed the gender division of labour, and increasingly brought women into paid work.

2.5. A recent quantitative perspective on higher education

The proportion of young adults in higher education has increased substantially during recent decades, and is projected to continue to increase somewhat in the future. During the 1990s, there was a tendency towards younger students than in previous decades, which saw increases in the mean age of students – an indication that higher education increasingly was seen as an early investment and not so much as a reoccurring event over the life course. When looking at the trends over the last five years (Tables 6–15)⁴, the following picture emerges:

The number of new entrants increased from 118,274 in the year 2000 to 143,968 in 2006 (Table 6). This is equivalent to a mean yearly increase of around 3.5 per cent, although this increase was not even and continuous but rather concentrated to the years 2001–2003 when the yearly change was 9.6 and 8.5 per cent respectively. The following years had a low and even negative growth in the number of new entrants,

⁴ All statistics concern students under sixty-five years old, with the exception of data on social background where only new entrants under thirty-four years old are considered. All statistics presented here has an attrition rate of less than thirty per cent. Yearly figures concern the academic year in question, *e.g.*, the year 2006 is equivalent to the academic year 2005/2006. Data is not collected with special reference to urban/rural location.

largely due to relatively small cohorts in their early twenties and a good labour market situation. A large share of the new entrants today are first time students and the majority, about seventy-five per cent, are accepted into their programme of first choice. This share has remained more or less unchanged over the last five years. To some extent, this can be explained by the fact that the expansion of higher education has left many programmes with seats to fill and entrance qualifications have been adjusted downwards to allow these seats to be filled. A large share of students (about sixty-five per cent), not least young ones enrolled in longer study programmes, stay on and complete their education, and are thus still in higher education two years after initial enrolment. This, however, tends to vary somewhat with the business cycle and job market opportunities.

The median age of new entrants into higher education was 22.2 years in 2006 (Table 7), and this figure has remained stable since the year 2000. There does seem, however, to have been a shift in young people's life courses in the 1990s, whereby more young adults postpone important life course transitions, such as leaving the parental home, finding a partner, entering the workforce, or starting higher education (Dribe and Stanfors, 2005). It has become more common for young people to devote a year to travel, devote themselves to interests or take on odd jobs before moving on to higher education or starting a career. This helps to understand why the median age of new entrants is about twenty-two years even though the share of older students has actually diminished.

Table 7. Descriptive statistics on new entrants into higher education, 2000–2006

Year	Median age	Men (per cent)	Foreign background (per cent)	Working-class background (per cent)	Parents with higher education (per cent)
2000	22.3	42	n. a.	n. a.	n. a.
2001	22.3	42	13	23	29
2002	22.4	42	14	23	29
2003	22.6	42	15	24	28
2004	22.5	43	16	24	29
2005	22.3	44	16	24	30
2006	22.2	45	16	25	30

Source: Swedish National Agency for Higher Education, Database 2006.

Women currently comprise more than half of all new entrants, although, as mentioned above, there is still a very high degree of educational segregation according to gender – a mirror image of the highly gender segregated Swedish labour market. Table 8 shows that only four programmes had an equal distribution of men and women among the graduates in 2004/2005, if equal is defined as no gender exceeding sixty per cent. When it comes to social background, it is important to look into ethnicity as well as class. Since the ethnic structure of the Swedish population has changed, not least during the 1990s, the integration of the foreign-born and second-generation immigrants into higher education has been an important goal for politicians as well as for higher education administrators. In 2001, thirteen per cent of all new entrants had foreign background, a proportion that increased to around sixteen per cent in 2004. People with foreign background are defined as those born outside Sweden or with both parents born outside Sweden (with the exception of adopted children). If we compare the share of new entrants with foreign background which would have existed if foreign background had been insignificant for the likelihood to start higher education to the actual share, we get a comparison ratio of 0.94 in 2006. This figure implies that the share of new entrants with foreign background was six per cent less than would have been the case if they had been represented according to their share of the population. Under-representation in higher education due to foreign background is, however, not as problematic as under-representation due to working-class background. Although persons with working-class background make up a fourth of all new entrants, the comparison ratio is only 0.7, which means that they are under-represented with about thirty per cent in relation to their share of the total population.

Table 8. Educational segregation among examined from a number of programmes leading to a professional degree (with at least 100 examinees), 2004/2005

Programme	Total	Men (per cent)
Engineer	4,417	71
Technician	2,593	68
Artist (musician)	115	56
Medical doctor	813	43
Architect	177	42
Candidate of theology	141	42
Law (juris candidate)	949	38
Dentist	172	35
Psychologist	292	28
Pharmacist	143	27
Teacher	8,424	19
Nurse (general)	4,520	13
Social worker	1,522	12
Occupational therapist	389	7

Source: Swedish National Agency for Higher Education, Database 2006.

Using data from the 1990s, Brandell (1998) confirmed that gender and class are important factors behind the persistent and systematic differences in educational choice between young women and men in the 1990s. When it comes to participation in higher education, there has been more change regarding gender than social class. The systematic differences due to social background and upbringing are also supported by the fact that persons who have at least one parent with higher education are over-represented in higher education. This group makes up about thirty per cent of all new entrants, which is fifty per cent more than the category's share of the population.

It is important to note that the composition of the student body with respect to age, gender, ethnicity and social background varies substantially between educational centers as well as educational institutions. The prestigious programmes at Lund and Uppsala University together with institutions such as Chalmers University of Technology, the Royal Institute of Technology, and Stockholm School of Economics, attract relatively more men and persons with higher social backgrounds, whereas the local university colleges attract relatively more women and persons with foreign and working-class background (cf. Brandell, 1998). This is due to the

selection of study programmes and courses provided at different educational institutions.

As mentioned above, higher education in Sweden is highly segregated according to gender. Only a fourth of all students follow courses with an equal sex distribution, defined as having no gender exceeding sixty per cent (Table 10). As regards the overall orientation of higher education, the shares of humanities and social sciences, technology, natural science and other subjects have been relatively stable during the first years of the twenty-first century. To some extent science has contracted since it has had difficulties attracting students, while other courses have expanded instead.

Table 9. Orientation of higher education, 2000–2006

Year	Humanities, social sciences, law (full-time students, per cent)	Science (full-time students, per cent)	Technology (full-time students, per cent)	Other (full-time students, per cent)
2000	45	15	19	22
2001	44	14	19	22
2002	45	13	19	24
2003	45	12	18	25
2004	44	12	18	26
2005	43	12	18	27
2006	42	12	18	28

Source: Swedish National Agency for Higher Education, Database 2006.

Turning to Table 10, it can be seen that, just as with new entrants, the total number of registered students has increased over the past six years, but this increase has been non-linear, since the total number of registered students peaked in 2003 with 340,034. The increase would be equivalent to a mean yearly growth rate of two per cent over the six-year period, which is somewhat less than that for new entrants. The total number of registered students only grew between 2000 and 2003, however, at a yearly growth rate ranging from 3.4 to 9.3 per cent. After the peak in 2003, the total number of registered students decreased, first only marginally, but as the Swedish economy experienced a boom, with an accompanying high labour demand the decrease was accentuated, lying between two-three per cent per year in 2005 and 2006. Men currently comprise forty per cent of the total number of students, which is a somewhat lower share than that of new

entrants. This implies that men leave higher education without a degree to a higher extent than women do, and they are also less likely to return to higher education over the life course. Table 9 shows that the share of non-traditional students⁵ is substantial and stable around fifty per cent.

Table 10. Total number of students, according to gender, 2000–2006

Year	Total number registered	Men	Women	Men (per cent)	Non-traditional students (per cent)
2000	284,998	113,999	170,999	40	n. a.
2001	300,800	120,320	180,480	40	50
2002	328,804	131,522	197,282	40	52
2003	340,034	136,014	204,020	40	52
2004	337,415	134,966	202,449	40	51
2005	331,062	132,423	198,637	40	50
2006	320,026	128,010	192,016	40	50

Source: Swedish National Agency for Higher Education, Database 2006.

Table 11. Descriptive statistics of higher education, 2000–2006

Year	Overall achievement (per cent)	Course with equal sex distribution	Returning students (per cent)	Returning after graduation (per cent)
2000	83	n. a.	n. a.	n. a.
2001	83	27	24	9.9
2002	82	25	25	10.6
2003	83	26	25	10.6
2004	83	25	25	10.4
2005	83	25	25	10.0
2006	83	25	25	10.2

Source: Swedish National Agency for Higher Education, Database 2006.

Not all students return to higher education after having taken a break, and some students drop out due to various reasons. As a whole, women are more likely to finish their education than are men and have a higher

⁵ In order to be categorized as a non-traditional student, the person shall fulfill at least one of the three following criteria: he/she should have started higher education at twenty-five years or later in life, study on a part-time basis, or have taken a break exceeding three semesters.

achievement rate. The overall achievement rate is eighty-three per cent⁶, while the share that actually graduate with a degree is only about fifty per cent. The reason why this share is so low is that a large group of students only wishes to follow a few odd courses and do not follow study programmes that lead to a degree. This group is likely to return to higher education as a part of a lifelong learning process. Returning students make up about twenty-five per cent of all registered students and those who return after having graduated reach about ten per cent, with these figures remaining stable during recent years. Another fact contributing to the low graduation rate is that some people leave higher education without a degree despite qualifying for it or having only one or two assignments left. This group is often recruited out of education into employment, making the degree of no immediate importance. The fact that women are more prone than men to graduate may reflect the existence of sex discrimination in the labour market, making it more important for women to have proper credentials in order to compete and advance in the job market. If we broaden our definition to include both those obtaining a degree and those attaining 120 credits or more within a seven year period (the workload equivalent to an undergraduate degree), the situation improves to about sixty-seven per cent (Table 12).

Table 12. Descriptive statistics on degree and graduates, 2000–2006

Year	First time graduates	First time graduates (per cent)	Mean length of degree (years)	Degree (alt. 120 credits) within 7 years (per cent)
2000	32,202	81	3.7	n. a.
2001	31,757	80	3.7	62
2002	33,923	79	3.7	63
2003	36,423	76	3.6	63
2004	38,657	74	3.6	64
2005	41,739	73	3.7	67
2006	43,629	74	3.6	67

Source: Swedish National Agency for Higher Education, Database 2006.

⁶ The achievement rate varies considerably between study programmes and courses.

As higher education has expanded, so has the total number of degrees granted (Table 13). The mean annual growth rate in degrees (of about eight per cent) exceeds that of both new entrants and total registered students. The growth rate in degrees is, however, not even and continuous, but rather concentrated to the years between 2002 and 2005. There is also a differential between the number of degrees granted and the number of first time graduates, who compose the majority of graduates. A substantial number of students are now choosing to combine a professional degree with a more general degree. A regional approach to this issue reveals quite substantial differentials among educational centers because they often have different routines when it comes to examination. It is thus of importance to study both the number of exams and first time examinees in order to get a correct picture. Since 2000, the mean length from entrance to degree has been stable at roughly 3.6 years. A large number of these degrees traditionally come from vocationally oriented academic programmes, but the theoretically oriented Master's and Bachelor degrees have seen a relative increase since 2000.

Table 13. Total number of exams, according to degree, in undergraduate higher education, 2000–2006

Year	Total number of exams	Master's degree	Bachelor degree	Engineer
2000	39,960	6,799	8,450	3,796
2001	39,675	7,473	9,003	3,599
2002	42,949	8,284	9,713	3,861
2003	47,755	9,054	10,982	3,951
2004	52,343	10,321	12,501	4,212
2005	57,099	11,279	13,351	4,417
2006	59,130	11,482	13,809	4,674

Source: Swedish National Agency for Higher Education, Database 2006.

During the last couple of decades, higher education in Sweden has gone international. This means that academic mobility has increased, *i.e.*, staff is recruited from an international pool of applicants and is more internationally oriented. This also means that more research is communicated in a foreign language, most commonly English, scholars regularly attend international conferences, participate in multilateral research projects sponsored by European, American, and Japanese foundations, etc. In case of undergraduate higher education, this

phenomenon serves as quality input and enables courses to be taught in English, thus attracting international students. Table 14 shows that the number of foreign students, *i.e.*, persons who have come to Sweden with the intention to study, increased from 8,646 in 2001 to 18,268 in 2006. In addition to this, the number of exchange students also increased from 6,282 in 2001 to 10,122 students in 2006. Taken together, the share of foreign and exchange students among the total of new entrants has increased from 12.3 to 19.7 per cent, during the period from 2001 to 2006. It should be noted that higher education in Sweden is free of charge for all students, irrespective of nationality, although the issue is currently debated. While the number of incoming exchange students has increased in a straightforward way, the number of Swedish students who participate in exchange programmes and go abroad has remained fairly stable at between 6,000–7,000 per year. In order to get an idea of how common it is for Swedish students to take part in international exchange, by relating the number of outgoing students to the number of first time examinees in the previous year, this relative measure gives an indication of the share that have a period of study abroad. As seen in Table 14, this measure decreases from nineteen per cent in the year 2000 to sixteen per cent in 2006. The differential between incoming foreign students and outgoing Swedish students implies that Sweden is more likely to experience a so called 'brain gain' than a 'brain drain.' Moreover, Swedish graduates who leave the country for employment abroad are very likely to work for Swedish firms and return after a few years.

Table 14. Foreign students, exchange students among new entrants in higher education, and outgoing students' share of graduates, 2000–2006

Year	Foreign students (new entrants)	Exchange students (new entrants)	Ingoing students (exchange programmes)	Outgoing students (exchange programmes)	Outgoing students (per cent among graduates)
2000	n. a.	n. a.	7,933	6,258	19
2001	8,646	6,282	8,467	5,988	19
2002	10,149	6,904	9,515	5,959	18
2003	12,187	7,629	10,566	6,434	18
2004	14,586	8,821	11,934	6,759	17
2005	16,442	9,627	12,648	7,007	17
2006	18,268	10,122	13,455	6,854	16

Source: Swedish National Agency for Higher Education, Database 2006.

A small share of students move on to PhD level graduate studies. Table 15 shows that the transition rates vary between six and seven per cent. The transition rate relates new entrants in graduate studies at the PhD level in one year to the number of undergraduate examinees five to eight years before.

Table 15. Transition rates to graduate studies at PhD level (*i.e.*, *forskarutbildning*), recruitment of graduate students at PhD level from same university, total number of graduate students and per cent foreign graduate students at PhD level, 2000–2006

Year	Transition to graduate studies (per cent)	Recruitment from same university (per cent)	Number of graduate students	Number of foreign graduate students
2000	5.7	42	18,657	n. a.
2001	6.5	43	18,951	2,832
2002	6.9	44	19,420	3,031
2003	7.1	46	20,050	3,294
2004	7.2	45	19,260	3,418
2005	6.9	43	18,639	3,500
2006	6.7	43	17,987	3,497

Source: Swedish National Agency for Higher Education, Database 2006.

Almost half of all PhD students are recruited from the university from which they got their undergraduate degree, but because PhD programmes are only provided at a limited number of educational institutions, *i.e.*, universities, a large group of young prospective academics relocates to pursue postgraduate studies. Unlike the rest of higher education, graduate study at the PhD level has not increased but remained rather stable during the period from 2000 to 2006. This is primarily because the question of financing PhD candidates has become more difficult to solve – about half of all graduate students at the PhD level hold doctoral scholarships/positions (Table 16). The PhD level is similar to the undergraduate level in one respect: the number of foreign PhD students has increased, rising from 2,832 in 2001 to 3,497 in 2006.

One characteristic of graduate students at the PhD level is that it is common to return to graduate studies after a period of labour force participation. This is reflected in the median age of about thirty-three years for graduate students. Although the number of graduate students at the

PhD level has remained stable, the number of licentiate as well as doctoral degrees has increased somewhat. The increase is, however, small. As a result of a reform enacted in 1998, the relationship between the number of graduate students at PhD level and the number of doctoral degrees granted in a year has narrowed, and has been roughly five since 2001. A full time PhD student is supposed to graduate within four years of full time studies, implying that a constant inflow of graduate students would yield a relationship equivalent to four. This relationship is sensitive to the inflow of students, and increases if the inflow of students exceeds the outflow.

Table 16. Median age of graduate students at PhD level, per cent holding doctoral scholarships/positions, number of doctoral and licentiate degrees, 2000–2006

Year	Median age	Holding doctoral scholarships/positions (per cent)	Number of doctoral degrees	Number of licentiate degrees
2000	33.2	50	2,176	1,009
2001	33.1	51	2,413	1,045
2002	33.0	53	2,476	1,024
2003	32.8	54	2,701	1,041
2004	32.9	55	2,741	1,096
2005	32.9	55	2,737	1,137
2006	32.9	55	2,759	1,056

Source: Swedish National Agency for Higher Education, Database 2006.

Labour market entrance is not generally a problem for university graduates, at either the undergraduate or the postgraduate levels. There is, however, considerable variation by educational orientation. Those who graduated in the fields of social sciences or technology make the fastest transition from higher education to the labour market. Irrespective of the business cycle, those with higher education are more likely to be employed and less likely to experience unemployment than those with lower levels of education.

Table 17a. Descriptive statistics on employment and teaching staff in higher education, 2000–2006

Year	Number of employees (full-time equivalents)	Teachers (per cent)	Number of teachers (full-time equivalents)	Women (per cent)
2000	n. a.	n. a.	n. a.	n. a.
2001	41,067	53	21,878	37
2002	42,575	55	23,327	38
2003	43,861	55	24,227	39
2004	43,207	56	24,080	40
2005	41,922	55	23,237	40
2006	42,237	55	23,356	40

Source: Swedish National Agency for Higher Education, Database 2006.

Table 17b. Descriptive statistics on teaching staff in higher education, 2000–2006

Year	Number of teachers with doctoral degree	Teachers with doctoral degree (per cent)	Number of professors (full-time equivalents)	Teachers holding professor's title (per cent)
2000	n. a.	n. a.	n. a.	n. a.
2001	10,590	48	3,268	15
2002	11,205	48	3,503	15
2003	11,957	49	3,659	15
2004	12,338	51	3,841	16
2005	12,509	54	3,930	17
2006	12,643	54	3,989	17

Source: Swedish National Agency for Higher Education, Database 2006.

Turning to Tables 17a and 17b, it can be seen that the number of employees (measured as full time equivalents) in the higher education system increased during the early years of the twenty-first century, but not to the same extent as the number of new entrants and registered students. The share of teachers among total staff in higher education has increased marginally from fifty-three to fifty-five per cent in order to meet the expanding teaching load. Higher education has, however, undergone certain rationalization processes and become more cost effective. This development is reflected in an increase in the number of full time students

per teacher. Resource allocation to higher education has also changed, leading to diminished revenues for universities and colleges. This led to negative results and budgetary deficits since 2001, but in 2005, the negative trend was reversed and it seems as the management of higher education has become more efficient.

The teaching staff has gradually been upgraded, with fifty-four per cent of the teachers holding a doctoral degree in 2006, compared to forty-eight per cent in 2001. The same period witnessed an increase in the share of teachers holding the title of full professor from fifteen per cent to seventeen per cent. Women comprised forty per cent of the teaching staff in 2006, but the share of female teachers varies substantially across educational institutions and by academic orientation. As a mirror image of educational segregation, women are under-represented among the teaching staff within technology and science, but more equally represented in the social sciences and humanities. The academic fields of education and caring/nursing are, just as the study programmes and the labour market at large, feminized to a very high degree. Segregation among academic staff is not only horizontal but also vertical, with women being more commonly found at the lower academic teaching positions and under-represented among professors. There has been an explicit political goal for the last fifteen years to increase the number and share of female professors, and although change has occurred, it has been slow, with the share of female professors increasing from eight per cent in 1995 to fifteen per cent in 2005.

3. Overview of Existing Higher Education Policies

When assessing the existing institutional policies of potential relevance to the demographic shifts identified and discussed above, it becomes clear that there is no policy with an outspoken demographic focus. As mentioned above, Sweden has had a long-standing tradition of trying to achieve equity through greater access to higher education for all groups of people regardless of class, gender and geographical location – a goal which has been of utmost importance, alongside growth-enhancing policies. While several of the policies have already been discussed in the section describing the situation for higher education in Sweden, it what follows attention will be given to some of the more general policies of importance today, moving

on then and pointing towards some aspects in which issues relating to higher education as well as to demography intersect.

The Social Democratic government which ruled Sweden during most of the 1990s until 2006 perceived higher education as a tool both to ensure economic growth and to ameliorate social and ethnic inequality. One major effect of this goal was the expansion of the higher education system through the establishment of a large number of regional colleges and the increase in funding for existing regional ones. This expansion was intended to give individuals who would not or could not relocate to a university town the possibility to continue their education after secondary school. In 2001, the government presented its proposal "The open university" [Den öppna högskolan], which stated that universities should strive to increase the number of students from non-academic and immigrant backgrounds. This government bill was passed in parliament, and served as a formalization of the *de facto* policy pursued through the gradual change of curricula and the expansion of the regional colleges in the 1990s. One of the means through which this would be accomplished was more flexible entrance requirements. While emphasizing that the formal requirements for acceptance into higher education would remain unchanged, the proposition stated that requirements for admission into individual educational programmes must be reviewed to ensure that they were not higher than the abilities actually required for the student to complete successfully the programme. As such, no artificial thresholds should exist which exclude students unnecessarily. In addition to promoting social equality, the proposition had a goal to make higher education so inclusive that fifty per cent of each birth cohort should have entered into university education by the age of twenty-five.

"The open university" was accompanied by a number of other government bills that emphasized the role of higher education from several different perspectives. In "A policy for growth and life in the entire country" [En politik för tillväxt och livskraft i hela landet], higher education is seen as an instrument for economic growth and at the same time governmental policies for the regional role of tertiary education is designed. In "Higher qualified vocational education" [Kvalificerad yrkesutbildning], the role of vocational programmes in higher education institutions and ways to increase the transition rates for secondary school graduates with

vocational training into higher education are discussed. In 2004, a redesigned proposition called "A new world, a new university" [Ny värld, ny högskola] applied a more global perspective to future Swedish higher education, with internationalization as an important aspect. When, as seen above, only a small share of all Swedish students spend some study time abroad, supposedly due to the fact that many students face difficult thresholds and do not manage to go abroad, the Swedish government argued that the most important internationalization must take place on campus. This bill also proposed that the degree system be reformed, thereby increasing the possibilities for Swedish graduates to have their qualifications evaluated in other countries, making them more eligible for work and study abroad.

The government that came into power in 2006 has recently submitted a new proposition regarding higher education ("Roads to higher education for knowledge and quality"). In this plan, emphasis is put on the importance of a direct path from secondary education to higher education. Currently, the higher education system in Sweden is geared both towards a direct procession from secondary school to university and towards lifelong learning through the admission of older students with several years work experience. The new proposal aims at reducing the weight of the older students in the admission procedure to the benefit of younger students. While the new policy emphasizes rapid transition from secondary to tertiary education, it will remain possible for adults to pursue higher education at a later date. Entrance to higher education requires certain prerequisites to be fulfilled. One of these is that a student must have completed a line of study at a secondary school with certain minimum grades, but there is also an option for individuals who decided to skip secondary education and enter the workforce but later decided to re-enter the educational system. This option, known as the "25:4 rule", states that individuals who are twenty-four years of age or older with at least four years work experience are qualified to enter university studies if they have passing grades in certain core courses from secondary school. These courses may be taken without cost through municipal adult education available throughout Sweden.

3.1. The regional policy role of higher education institutions

There is a distinct regional dimension to higher education in Sweden, and during the 1990s and early 2000s there has been a great expansion of study places outside the traditional university cities. One motivation for this has been to safeguard access to higher education regardless of geographic location, but higher education institutions are also ascribed an important growth enhancing role as well as a role in the development of local and regional society, an aspect that is worth considering in the light of the rather sparse population density in some parts of the country. The regional universities are supposed to contribute to regional growth and cooperate with their surrounding area. It has, however, not been made clear what actual effects regional higher education institutions have had. When it comes to recruitment, the transition rates to higher education vary considerably by region, and this variation is greater than it should be given the expansion of study places. There is also no empirical evidence of the positive impact of higher education institutions on economic growth and increased well-being in the regions.

3.2. The growth enhancing role of higher education institutions

Sweden invests about four per cent of its GDP in various research activities. Most research and development take place within private industry, but almost all publicly funded research is channelled through the higher education institutions. In recent years, resources designated for research have been spread across an increasing number of higher education institutions. Some, especially representatives of traditional universities, argue that this is an unfortunate and inefficient dispersion of scarce resources. This dilution of funding directly affects the quality of higher education institutions, and has been fiercely debated in recent years.

Both the previous and the present government have ascribed a central role to the higher education institutions in economic growth. According to the Higher Education Act, higher education institutions should enable the launch of companies and ease the transfer of knowledge between university and the public and private sectors, thereby contributing to economic growth and development of knowledge. This can be done by providing people participating in the labour force with the right knowledge and skills and by

commercializing research results. With the focus on knowledge and innovation systems, research has become increasingly important.

Another potentially growth-enhancing aspect of the Higher Education Act is that higher education institutions should take into account student as well as labour market demands when planning what programmes and courses to supply. Only in the case of a limited number of professional programmes are the government directives detailed.⁷ In the last few years, the future labour market outcomes of graduates have become an important topic and the role of higher education in economic growth has been more and more clad in terms of supply and demand in different fields. This is not least because of rising unemployment among graduates as well as imbalances in the graduate labour market in terms of demand and supply of graduates in different academic fields. It remains the case that people with a higher education have higher employment rates and income levels than people with lower levels of education, but there are indications that this is not as straightforward anymore. The prime evidence of this shift is the recent imbalances in supply and demand for graduates with a high degree of specialization, even in professional fields. This shift towards a labour-market aware education policy is most obvious when it comes to advanced vocational education, which is designed to correspond to the (often local or regional) labour market, but higher educational institutions also offer some contract education which may be purchased by organizations for their employees and there are also some courses given aiming to improve employment prospects.

3.3. Higher education policies and demographic shifts: ageing

There are a number of important aspects in which higher education and demographic developments in Sweden intersect. In the coming ten years, there will be some ageing of the general population, but significant changes will take place with respect to the age structure of the labour market. There will be a generation shift, especially acute in the public sector, since large cohorts born in the baby-boom of the 1940s will have to be replaced by

⁷ In this respect, the directives are quantitative.

younger people as they retire. To a large extent, those who retire will be replaced by those belonging to the large 1960s cohorts and the young born in the early 1990s. Since a large share of younger cohorts has a degree requiring at least three years of higher education, this shift will lead to an increase in the average level of education of the labour force. Every year sees an increase in the number of people with higher education levels in the labour market, and, considering the recent expansion of higher education, the share of people with advanced qualifications will continue to increase for quite some time. This may lead to an increasingly large group of people with high formal qualifications employed in jobs that are below their qualification level (le Grand et al., 2002). The threat that the average level of education of employees rises more than the average level of qualifications demanded is, however, counterbalanced somewhat by a restructuring of the Swedish economy towards more knowledge-intensive production. This increases the qualification level required by employers, thereby decreasing the proportion of jobs requiring no specific skills while increasing the proportion of jobs that require advanced qualifications. Thus, one can say that ageing will rejuvenate and increase as well as update the level of qualifications of the labour force.

Higher education is obviously beneficial and may ease the ageing problem that Sweden and many other countries face in the future. Higher education may improve economic growth through knowledge, skills and increased productivity but it can also improve tax revenues since more educated people tend to earn higher salaries, work more and are less likely to be unemployed. Therefore, it is a sound and even long-term viable strategy to invest in human capital and ameliorate higher education, both when it comes to curriculum and quality and when it comes to graduation rates and the tempo of study.

3.4. Higher education policies and demographic shifts: achieving equity

Achieving equity has been a goal for Swedish education policy since the 1940s. According to the Higher Education Act, the role of higher education institutions, in this process, is to encourage and broaden the recruitment to higher education. The last few years have seen great efforts across higher education institutions when it comes to planning and formulating strategies

to increase diversity of many kinds in higher education. In addition to recent efforts, since 1965 there has been a comprehensive public system for financial study assistance, which grants loans and transfers to students, irrespective of parents or spouses earnings.

Another important goal of higher education policy since the 1970s has been the avoidance of "dead-ends" for individuals in the labour force and the support to lifelong learning through re-training. In this respect, municipal adult education serves an important role as a means to facilitate access to higher education to almost all, irrespective of previous experience and education. Municipal adult education allows persons both to enter higher education later in life and to change their professional careers.

When it comes to geographical location, there are large regional differentials in terms of enrolment rates among twenty to twenty-four-year-olds. There are also urban and rural differences and the highest transition rates to higher education are found in the metropolitan areas and university cities. This is partially explained by the close proximity of higher education institutions that enable large groups of students to remain in the parental home while starting university education, but it also has to do with socialization and the concentration of highly educated parents in these areas.

As discussed above, the proportion of women in higher education has increased constantly during the post-war period and women now represent more than half of all students and graduates, the exception being graduate studies at PhD level. Challenges remain, however, especially concerning segregation by field of study and gender-typical choice. Despite the fact that women have been changing their educational orientation towards less female-dominated disciplines, there is still much work to be done regarding recruiting, not least of men into the typically female-dominated programmes oriented towards caring and education.

A previous section showed that students with foreign backgrounds are not dramatically under-represented in higher education. There are, however, great variations across ethnic groups. New entrants, especially those with a refugee immigrant background, are under-represented.

Another challenge in terms of achieving equity in and through higher education is to increase the proportion of students with a working-class background continuing education past the secondary level. The

participation of young people with a working-class background has, however, increased and the trend is predicted to continue. Regardless of this success, complexities remain this issue that demand special attention.

With the increased emphasis on human capital and skills in the knowledge-intensive economy of the twenty-first century, young people have spent more time in education. This has resulted in a delayed entry into the labour market. The majority of graduates from secondary and tertiary education moves on to either further education or work, but since 2000 access to the labour market has increasingly been impeded by spells of unemployment and even non-employment, also known as inactivity.⁸ At the end of the transition period, at ages twenty-five to twenty-nine, most people have completed their studies. In most countries, not attaining secondary education qualifications is a serious handicap with respect to labour market access, whereas higher education renders a premium in the job market. In present-day Sweden, the inactivity rate of those with education below the upper secondary level is twice as high as that of those with secondary education and about four times as high as that of higher education graduates. The pattern is, interestingly, different from that of some of the neighbouring Nordic countries that provide better labour market prospects for those with lower educational attainment (Denmark and Norway) and relatively more difficulties for those with tertiary education (Denmark).

The proportion of the youth population (aged twenty to twenty-four) not in education and not employed is more than ten per cent. This is troublesome since it is in this age group where the key education-to-work transition takes place. A closer look at the causes of inactivity among young people in Sweden shows that the unsuccessful completion of secondary education is the primary cause. In this group, inactivity supersedes fifteen per cent for both men and women. More men than women are neither in education nor in employment. When controlling for different background

⁸ This is a much better measure of social exclusion than youth unemployment, since this measure only considers those in the labour force. When a large share of a cohort still participates in education, this measure becomes skewed. The inactivity measure is a more appropriate way to reflect the likelihood of youth employment.

variables, ethnicity and social background are among the most important determinants of inactivity (Olofsson, Stanfors and Östh, 2003). Inactivity is a problem since it leads to depreciation of human capital and very low income for the individual, but it also has social consequences, not least in a country like Sweden where the completion of secondary education is highly encouraged by education policy, and full employment is a long-standing goal and where labour market participation is crucial for an individual to be fully vested in the income-security and welfare insurances. It is, however, clear that educational orientation is also of importance for inactivity, since those with vocational qualifications from upper secondary school are significantly less likely to be among the inactive. This is in line with educational policy that has emphasized advanced vocational education and work-study programmes that combine work and education. Clearly, for some marginal groups, an integrated formal education and training activity such as the dual system in Denmark or Germany is a way to avoid inactivity among youth and at the same time pave the way for lifelong learning. This alternative has been seriously considered by both the previous and the present Swedish government. Advanced vocational education has become a part of many higher education institutions and is based on close co-operation between enterprises and universities. It is highly likely that the coming reform of the upper secondary school will provide more dual alternatives, but this is yet to be seen.

3.5. Higher education policies and demographic shifts: internationalization

Internationalization has been an important aspect of higher education policy during the early years of the twenty-first century. One important aspect of internationalization takes place at home and is related to migration and cultural diversity through integrating immigrants and others with foreign background in higher education. Another aspect of internationalization is related to participation in international educational networks and exchange programmes. Swedish students are encouraged to study abroad, and the financial aid system can be used to finance studies throughout the world.

As far as the international exchange is concerned, Swedish higher education is attracting a growing number of students. This is related to the

fact that more courses and programmes are taught in English. In recent years, the Bologna Process has had great impact on higher education policy and on the course and programme structure at many higher education institutions. Another significant factor in Sweden's relative attractiveness to foreign students is that there is no tuition fee applied to either native or foreign students. With the expected increasing inflow of international students, the issue of introducing fees for students from outside the EU/EEA is seriously being considered but the government has not yet come to a decision.

4. Conclusions and Recommendations

This paper has charted out several demographic trends facing Sweden, as well as trends within the higher educational system in general. This section will attempt to synthesize and briefly comment on these trends.

One of the major demographic trends that can be foreseen is the shift towards a higher share of the elderly and a lower share of the young in the Swedish population. At the economic level, this creates challenges for the country, since costs for both health care and pensions will be raising relative to the work force. For the higher education system this implies that we will see smaller birth cohorts in the future, and therefore smaller groups from which to select students. Cohort size will continue to vary much as it has in the past, but these variations will be around a smaller mean value. The situation with increasing costs associated with population ageing may well serve to ameliorate the negative effects that smaller birth cohorts could have on the higher educational system. In a new growth theory framework, investments in education could lead to the economic growth required to finance governmental transfers in the face of a shrinking workforce. Emphasis on the endogeneity of growth can already be seen in the Swedish government's goal of increasing the share of individuals proceeding from secondary to tertiary education. Given this theoretical approach to economic growth, the dilemmas of an ageing population may find their solutions in increased expenditures for higher education and efforts to increase the share of individuals proceeding into university education.

While the expansion of the educational system during the last quarter of the twentieth century was effective in increasing the share of women in

higher education, this increase has not been of a general character. Educational levels have equalized, but fields of study are still quite segregated. Historically, we have seen that occupations dropped in both prestige and salary as they shifted from being male-dominated to being female-dominated. Given continuing inequalities in wages between men and women we have no reason to think that this tendency no longer holds. As such, it is important for higher education policies to stress not only equality in terms of educational attainment but also equality in terms of fields of study. Failure to pursue such a policy could have negative consequences for female wage development and therefore for societal equality in general.

The increasing ethnic diversity within Sweden poses a particular challenge to the educational system. While the immigrant population itself does not differ dramatically from the natives in terms of achieved educational levels, the children of immigrants – the so-called second generation – have shown a lower propensity to pursue higher education than Swedes born to Swedish parents. A recent study by Tasiran and Tezic (2006) shows that the second generation has approximately the same educational profile as children from the Swedish working class. This is an interesting phenomenon, given the fact that the first generation is quite well educated, a fact which should, if immigrants followed native patterns, ensure a higher participation of the second generation in university studies. Whether this lack of investment in education is due to a lack of faith in the future is not entirely clear. What is clear is that there are groups in society which do not continue onwards into higher education. As mentioned in the policy section, the government has attempted to amend this problem through the creation of regional colleges aimed at the needs of these groups. While this is admirable, it is also important to increase the ethnic diversity in more established universities as well.

While the government needs to address issues of gender, social, and ethnic segregation in the educational system, there is another issue which is high on the agenda of educational policy-makers. This involves the internationalization of the educational system. As mentioned above, Sweden has recently formalized its obligations under the Bologna Agreement with the inception of a large number of international Master's programmes. This is the most visible part of a drive towards

internationalization which began in the late 1980s and early 1990s. As a participant in various exchange programmes such as the EU Erasmus programme, Sweden has consistently worked towards offering courses in English to improve its attractiveness to foreign students. With the adoption of the tenets of the Bologna Agreement this process has been intensified. The increased internationalization of the Swedish university system, and the increased share of international students, has brought new debates to light. Currently, the Swedish universities provide education at no cost, regardless of nationality. Recent debates in Sweden have focused on the associated costs, and the possibilities to extract tuition fees from foreign students. This debate has been somewhat heated, with many (but not all) universities and colleges supporting the idea, while the students' associations are vehemently opposed. One of the fundamental reasons for the opposition seems to be the international trend towards tuition fees for national students as well. It is thought that tuition for foreign students is the first step towards tuition for all students.

The idea of tuition points to other issues facing the Swedish higher education system. The government sees education as important to economic growth, and therefore sees an expansion of the university system as an extension of growth policy. Concurrently, the government is interested in reducing the tax burden on the population. Increased expenditures and lower taxes seldom work well together, and here we can see the issue of quality arising. Recently the Swedish National Agency for Higher Education has begun assessing the quality of educational programmes throughout the country. Over the past six years 1,700 educational programmes have been evaluated. The general results have shown an overall high quality of education, but there have been exceptions. In certain cases departments have been told to re-evaluate their programmes, and in others the right to grant degrees in certain fields has been suspended. While the results of the evaluations have been largely satisfactory, they point to a problem which may grow if not addressed. The expansion of higher education must be adequately funded, or the overall quality of the education provided will suffer.

Aspects of funding as well as of quality have also been brought up in the debate on the decentralized system of governance for higher education, reformed research funding and the establishment of regional universities

and new forms of tertiary education outside the traditional higher education institutions.

The future development of educational policy is likely to concern governance and the fact that the government wants higher education institutions to operate more autonomously and strategically, while simultaneously co-operating in order to concentrate on fewer programmes and specialization in order to raise quality and avoid duplication. This line of thought is also present with regard to research strategies, and over the last few years there has been a clear focus on "excellence" in research funding, both at the national and the local level. Educational policy will also most likely continue to focus on the expansion of advanced vocational education in order to safeguard access to the labour market for more graduates, to avoid unemployment and inactivity among young people, and to promote lifelong learning. The ambition of both the previous and the present governments has been to continue the expansion of higher education and widen participation among both natives and international students. The target of fifty per cent of an age cohort having enrolled in higher education is not far from reality, and it is probably already met in a long-time perspective when considering the likelihood of today's fifteen year-olds participating in higher education at some time during their lives. This, however, implies that there will be challenges in meeting the increasing demand for higher education with respect to capacity and funding. Given the fact that a large share of the teaching staff will retire in the near future, there will be a demand for young academics to fill the positions left vacant. These are all aspects that show the importance of taking demographic developments into consideration in the configuration of higher education policy in Sweden.

References

- BONGAARTS, J. 1999. Fertility Decline in the Developed World: Where Will It End? *American Economic Review*, 89, pp. 256–260.
- BRANDELL, L. 1998, *Nittiotalets studenter. Bakgrund och studiemönster* (Students in the 90s. Background and Study Standards] Stockholm: Swedish National Agency for Higher Education. (StudS arbetsrapport 2)

- EASTERLIN, R. 1981. *Birth and Fortune. The Impact of Numbers on Personal Welfare*. Chicago: University of Chicago Press.
- DRIBE, M. and STANFORS, M. 2005. Leaving Home in Post-War Sweden. A Micro-level Analysis of the Determinants of Leaving the Parental Home in Three Birth Cohorts. *Scandinavian Economic History Review*, 53, pp. 30–49.
- , 2007. Education, Work and Parent: the Experience of Young Men and Women in Sweden, forthcoming in *Journal of Family and Economic Issues*.
- LE GRAND, C., SZULKIN, R. and TÅHLIN, M. 2002. Har jobben blivit mer kvalificerade? Kvalifikationskravens förändringar i Sverige under tre decennier. [Have Jobs Become more Qualified? Changes in Educational Demands in Sweden during the Past Three Decades]. In: K. Abrahamsson, L. Abrahamsson, T. Björkman, P.E. Ellström and J. Johansson (eds). *Utbildning, kompetens och arbete*. Lund: Studentlitteratur. (In Swedish)
- HÖGSKOLEVERKET. 2004. *Universitet och högskolor. Högskoleverkets årsrapport 2004* [Universities and Colleges. The Swedish National Agency for Higher Education Annual Report]. Högskoleverkets rapportserie 2004: 16R. (In Swedish)
- KOHLER, H. P., BILLARI, F. C. and ORTEGA, F. A. 2002. The Emergence of Lowest-low Fertility in Europe during the 1990s. *Population and Development Review*, 28, pp. 641–680.
- LESTHAEGHE, R. and WILLEMS, P. 1999. Is Low Fertility a Temporary Phenomenon in the European Union? *Population and Development Review*, 25, pp. 211–228.
- OECD. 2006. *Education at a Glance. OECD Indicators 2005*. Paris: OECD.
- OLOFSSON, J., STANFORS, M. and ÖSTH, J. 2003. 20-24 åringars etableringsproblem på 1990-talets arbetsmarknad. En översikt om inaktivitet och låga inkomster. *SMiF Forskningsrapport 2003* [20-24 Year-olds' Difficulties Entering the Labour Market. A Survey of Inactivity and Low Incomes] (SMiF Forskningsrapport 2003) (In Swedish)
- ROSHOLM, M., SCOTT, K. and HUSTED, L. 2006. The Times They Are A-changin'. Organizational Change and Immigrant Employment Opportunities in Scandinavia. *International Migration Review* 40(2), pp. 318-347.
- SCOTT, K. 1999. *The Immigrant Experience: Changing Employment and Income Patterns in Sweden, 1970-1993*. Lund: Lund University Press.
- STANFORS, M. 2003. *Education, Labour Force Participation and Changing Fertility Patterns. A Study of Women and Socioeconomic Change in Twentieth Century Sweden*. Stockholm: Almqvist & Wiksell International.
- , 2007. Utbildningsexpansionen under 1900-talet. Ett ekonomisk- och befolkningshistoriskt perspektiv. [Educational Expansion during the 1990s.

An Economic and Demographic Perspective] In: J. Olofsson (ed.). *Utbildningsvägen –vart leder den? Om ungdomar, yrkesutbildning och försörjning*. Stockholm: SNS Förlag. (In Swedish)

STATISTISKA CENTRALBYRÅN. 2005. *Sveriges framtida befolkning 2005–2050* [Population Projections for Sweden, 2005 – 2050]. (Statistiska meddelanden BE 18SM0501). (In Swedish)

----- . 2007. *Befolkningens Utbildning 2006* [The Educational Level of the Population 2006]. (Statistiska meddelanden UF 37SM0701). (In Swedish)

TASIRAN, A. and TEZIC, K. 2006. Parental Income and Continuing Education of Second Generation Immigrants in Sweden. *International Review of Applied Economics*, 20(4), pp. 491-514. (In Swedish)

Government bills

SWEDEN. GOVERNMENT. 2000. *Kvalificerad yrkesutbildning* [Higher Qualified Vocational Education]. Regeringens proposition 2000/01, p. 63. (In Swedish)

----- . 2001. *En politik för tillväxt och livskraft i hela landet* [A policy for Growth and Life in the Entire Country]. Regeringens proposition 2001/02, p. 4. (In Swedish)

----- . 2001. *Den öppna högskolan* [The Open University]. Regeringens proposition 2001/02, p.15. (In Swedish)

----- . 2004. *Ny värld, ny högskola* [A New World, A New University]. Regeringens proposition 2004/05, p.162. (In Swedish)

----- . *Vägar till högskolan för kunskap och kvalitet* [Roads to Higher Education for Knowledge and Quality]. Regeringens proposition 2006/07, p. 107. (In Swedish)
Figure 1. Population 1970–2006 and population projection 2007–2050. Upper and lower bounds at 5per cent C.I.

Demographic Assets in Turkey – A Challenge for the Higher Education Institutions

Fatma MIZIKACI

1. Population and Demographic Situation in Turkey

Turkey is a relatively young country in terms of its population that experienced the transition from the “demographic burden” period to that of a “demographic gift” (Bloom and Williamson, 1998) in the 1970s. Having entered a “demographic gift” stage, the young and working age population growth has been high and the dependency rate has started to decline. In 1950, Turkey’s population amounted to twenty-one million, today has reached seventy-three million (Turkish Statistical Institute, 2007) and it will grow to ninety-nine million in 2050 (UN, 2006). A considerable proportion of this prospected growth will be owed to a lower dependency ratio and a higher life expectancy while the growth of the young population will enter a period of stagnation. After reaching a peak in the late 1980s, Turkey is currently witnessing a slow stagnation period in young population growth.

There is a decline in the population growth rate as well. Over the last fifteen years (1990-2005), the population growth rate has decreased from 1.8 per cent in 1990 to 1.36 per cent in 2005. A further decline of 0.16 per cent is projected by 2050.

During the same fifteen-year period, the population growth by age group has shown significant changes. The percentage of the population under fifteen years of age has fallen from 35.7 to 28.3 while in the group of those aged sixty and above an increase from 6.7 per cent to 8.2 per cent has been registered. For the time being, there is an increase in the proportion of those aged fifteen to fifty-nine, *i.e.*, the working age group, from 57.6 per cent to 63.5 per cent (Table 1).

Table 1. Turkey's population by age group

	0-14		15-59		60 +	
	Numbers	Percentage	Numbers	Percentage	Numbers	Percentage
1950	8,600	40.0	11,644	54.2	1,240	5.8
1990	20,50	35.7	33,019	57.6	3,825	6.7
2005	20,630	28.3	46,369	63.5	5,971	8.2
2050	17,346	17.5	57,369	58.0	24,2305	24.5

Source: UN, 2006.

With respect to the median age, Turkey has an ageing trend with an increasing median age going from 19.4 in 1950 to 26.7 in 2005 and predicted to grow to 40.7 in 2050.

As for the population by sex, the male population surpassed the female population by far in 1990s, although males and females have been roughly stable over time (Table 2).

Table 2. Population by sex (in million)

	Male	Female	Total
1950	10,722	10,762	21,484
1990	29,008	28,337	57,345
2005	36,769	36,201	72,970
2050	49,008	49,938	98,946

Source: UN, 2006.

1.1. Factors influencing demographic developments

Fertility behaviour. Over the past fifteen years, the total fertility rate has shown a decreasing trend from 3.7 in 1990 to 2.17 in 2005. With this figure, except for South and East Anatolia (above three children), fertility is below replacement level. Women with no education have two more children on average than those with higher levels of education (Hacettepe University, 2003). Despite the fact that Turkey has entered a stagnation period concerning fertility, the young population will continue to grow slightly in the next twenty to thirty years.

Life expectancy. Life expectancy at birth has shown an increasing trend over the last fifteen years from 64.2 in 1990 to 71.3 in 2005. Over the same period male life expectancy increased from 62.3 to 68.9 while reaching 73.2 for females (UN, 2006 Revisions).

Morbidity rates. The crude death rate has decreased from 8.3 to 6.2 in 1990-2002 period (UN, 2006 Revisions).

Working age population. Due to the increase in young cohorts, the share of the working age population has risen over the last fifteen years from 57.5 per cent to 63.5 per cent. This period is characterized by a beneficial age distribution pinpointed with an increase in the proportion of working age adults.

Urban and rural population. Turkey has been an agricultural country in terms of social and economic indicators. Thus, the rural population has been dominant for many years until late 1960s. In 1927, when the first official census was undertaken, the rural population represented 75.75 per cent of the whole population while the urban population was 24.22 per cent (Turkish Statistical Institute, 2000). The transformation from an agricultural to an industrial society has brought a first migration flow from villages to cities, and then changes in the needs of jobs, education and changing lifestyles created a second migration flow in the same direction. The 2000 census results indicate an urban population that was nearly sixty per cent of the overall population, while the rural population made up only thirty-five per cent. A slight difference between women and men stands for the male population living in cities (Table 3). The urban population growth rate was 36.6 per cent in the same year. Within this trend, recently, two thirds of the total Turkish population lives in large cities such as Istanbul, Ankara, Izmir and others.

Table 3. Percentage of urban and rural population by sex

Year	Urban			Rural		
	Total	Male	Female	Total	Male	Female
1990	59.10	60.29	57.70	40.99	39.71	42.30
2000	64.90	65.30	64.50	35.10	34.70	35.50

Source: Turkish Statistical Institute Database, 2007.

1.2. Migration

Turkey is a migration country experiencing both internal and external immigration. The number of internally migrated persons was 4.788.193 in 2000 (Turkish Statistical Institute, 2004). Most of the internal migration takes place from rural to urban areas and from the Eastern and the Northern regions to the West where industrial development and economic and social opportunities are better. In the same year twelve per cent of the population migrated for educational reasons while twenty per cent migrated for employment opportunities (Turkish Statistical Institute, 2004).

Since the 1980s, the flow of net emigration from Turkey amounts to some 40,000 to 60,000 persons per year, which is about 0.2 per cent of the current labour force. In 2002, about three million Turkish nationals were officially registered in the EU-15 (Commission of European Communities, 2004).

Outgoing migration. While Turkey's demographic trends are typical for many developing countries, an important difference is migration. Following an agreement between Turkey and West Germany in 1961, large numbers of unskilled, temporary migrants entered Europe as "guest workers." The relationship benefited both Turkey, which sought an outlet for surplus population, and Germany which faced labour shortages as its economy boomed. Similar agreements were signed with Austria, Belgium, France, the Netherlands, and Sweden. Currently 3.2 million Turkish nationals live in Europe, according to one estimate (Kirişçi, 2003). The number of Turks living in Europe varies according to different sources.

The migration forecast from Turkey to the EU-15 countries shows that by 2030 the number of migrants will be between 0.4 and 4.4 million people (Boeri et al., 2001). It is also projected that these figures will tend to decline further in the case of Turkey becoming a member of the EU due to improved employment opportunities, political stability and social and economic welfare. In 2000 Germany hosted seventy-six per cent of Turks in Europe. The rate of internal unemployment has fallen by one per cent due to external migration (Erzan et al., 2001).

Incoming migration. The majority of the immigration to Turkey is from the Balkan countries as a result of permissive policies that began from 1925 to accept Muslims speaking Turkish languages as immigrants. Between 1935 and 1940, for example, approximately 124,000 Bulgarians and Romanians of Turkish origin immigrated to Turkey and between 1954 and 1956 about 35,000 Muslim Slavs emigrated from Yugoslavia. In the fifty-five-year period ending in 1980, Turkey admitted approximately 1.3 million immigrants; thirty-six per cent came from Bulgaria, thirty per cent from Greece, 22.1 per cent from Yugoslavia, and 8.9 per cent from Romania. Smaller numbers of Turkish immigrants from Cyprus and the Soviet Union were also granted full citizenship upon their arrival in Turkey (Acma, 2002).

The most recent immigration influx was that of Bulgarian Turks and Bosnian Muslims. In 1989 an estimated 320,000 Bulgarian Turks fled to Turkey to escape a campaign of forced assimilation. As of December 31, 1994, an estimated 20,000 Bosnians were living in Turkey (Acma, 2002).

1.3. Demographic shifts and main challenges

In twenty years a decline in the working age population will be witnessed. As projected, the population of working age and the proportion of young employees will decrease significantly by 2025 (SSK Report) and Turkey will enter the third stage population structure having an increase in life expectancy and a decrease in the number of births. This will result in the following changes for the social and economic development of Turkey:

1. An increase in the rate of ageing population;
2. An increase in total dependency ratio (for those under the age of fourteen and over the age of sixty-four);
3. An increase in the population of working age;
4. Employees over the age of forty-five will stay in the labour force;
5. The proportion of young employees will have a falling trend;
6. The rate of those aged sixty and over will no longer be in the employment area and will become the largest age group.

The demand for services in the areas of health and social care will grow. This will influence the higher education sector demand concerning the type of programmes, curricula and placement of the graduates. For example, as the population ages, universities will focus on programmes such as medicine, health sciences, nursing, elderly studies and the need for vocational education on these subjects will also grow.

Lifelong learning will gain more importance for the workers since spending longer periods of time on the labour market will be common. Workplaces and employment strategies will be rearranged for the needs of the ageing working population. Higher education systems will need to be revised for the demands emerging from such new societal and economic needs.

2. Demographic Challenges for the Turkish Higher Education

2.1. Schooling rates and demographic trends

Despite the fact that the proportion of educated persons was quite low even in the late 1900s there has been a substantial increase over time in the educational attainment at all levels for both men and women (Table 4).

In the 2005-2006 academic year total school attainment was 89.77 per cent in primary education and 56.63 per cent in secondary education while it is as low as 18.85 per cent for higher education.

Schooling rates considerably vary between males and females showing a general growing rate over years. In 1997, for example, primary school attainment among girls was as low as seventy-eight per cent while it was ninety per cent among boys. Presently the participation rate has increased to ninety-two per cent for males and eighty-seven per cent for females (Table 4).

Table 4. Net schooling ratio¹ by level of education (in percentage)

	Primary education			Secondary education			Higher education		
	Total	M	F	Total	M	F	Total	M	F
1997-98	84.74	90.25	78.97	37.87	41.39	34.16	10.25	11.28	9.17
1998-99	89.26	94.48	83.79	38.87	42.34	35.22	10.76	11.81	9.67
1999-00	93.54	98.41	88.45	40.38	44.05	36.52	11.62	12.68	10.52
2000-01	95.28	99.58	90.79	43.95	48.49	39.18	12.27	13.12	11.38
2001-02	92.40	96.20	88.45	48.11	53.01	42.97	12.98	13.75	12.17
2002-03	90.98	94.49	87.34	50.57	55.72	45.16	14.65	15.73	13.53
2003-04	90.21	93.41	86.89	53.37	58.08	48.43	15.31	16.62	13.93
2004-05	89.66	92.58	86.63	54.87	59.05	50.51	16.60	18.03	15.10
2005-06	89.77	92.29	87.16	56.63	61.13	51.95	18.85	20.22	17.41
2006-07	90.13	92.25	87.93	56.51	60.71	52.16	-	-	-

Source: National Education Statistics, 2007.

The education levels are still comparatively low by OECD or EU standards, and the demand for higher education currently exceeds the capacity of the system. The proportion of the adult population attaining higher education is lower than any other European country.

The present schooling rates in higher education represent an increase over the last years, remaining however below the young cohorts growth rates. Higher education age cohorts have an increasing trend over time (Table 5). In 2005 the population of those aged eighteen to twenty-four was more than five million.

Table 5. The population cohorts aged eighteen to twenty-four by year (in million)

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
18-24 age	5,093	5,228	5,184	5,142	5,102	5,063	5,025	5,371	5,355	5,288	5,192	5,098

Source: ÖSYM, 2007.

¹ The number of students aged eighteen to twenty enrolled in higher education divided by the population in the same age group.

In the academic year 2006 - 2007 almost half of that age group enrolled in higher education institutions, including the Open University, which holds a proportion of more than thirty-six per cent of all students. This number includes enrolment in graduate and postgraduate studies and vocational associate programmes. Enrolment in the four-year university undergraduate programmes is of almost 1.4 million (Table 6).

Table 6. Enrolment in higher education by level and type of study in 2006-2007

Total	2,453,664
University undergraduate	1,386,072
University graduate	142,394
- Master's	108,683
- Doctorate	33,711
University associate (vocational)	176,446

Source: ÖSYM, 2007.

The higher education attainment level increased from fourteen per cent to eighteen per cent within the last five years. The change is unfavourably lower for women: thirteen per cent in 2002 and seventeen per cent in 2006. Even though there has been an increase in the attainment rates in higher education within that five-year period, the difference between demand and supply is not high. Consequently, the attainment level in higher education is lower than many European countries within the same period.

Low enrolment of girls is observed in some types of higher education institutions. Girls' enrolment is close to boys' in universities while it is quite low in other types of higher education institutions such as the Police Academy, the Military Academy or the Military Medicine Academy (Table 7).

Table 7. Number of student enrolment², 2007

	Total	Male	Female
Total	2,453,664	1,409,125	1,044,539
Universities	2,419,214	1,379,206	1,040,008
Other HE institutions	34,450	29,919	4,531

Source: ÖSYM, 2007.

2.2. Graduation rates³

The number of graduates from higher education programmes in 2006 is 373,375 while the total number of new admission to higher education programmes is 636,527 in the subsequent year (Table 8). The new enrolment graduation ratio is fifty per cent.

Women' graduation rates from other types of higher education institutions are consistently lower than their university graduation rate and the graduation rate of men (Table 8).

Table 8. Number of graduates and new admissions 2005-2006

	Graduates			New admissions		
	Total	Male	Female	Total	Male	Female
Total	373,375	206,659	166,716	636,527	362,538	273,989
University	361,188	195,367	165,821	623,106	350,480	272,626
Other HE institutions	12,187	11,292	895	13,421	12,058	1,363

Source: ÖSYM, 2007.

The ratio of graduation and enrolment in the last five years is approximately one sixth of the enrolment (Table 9).

Consistent data on drop out rates do not exist.

² All types and levels of HE programmes.

³ Data on graduation is available only in rote numbers.

Table 9. Number of enrolment and graduation by year

Year	Enrolment	Graduation
2001-02	1,568,384	267,791
2002-03	1,798,623	289,579
2003-04	1,841,546	296,113
2004-05	1,969,086	316,128
2005-06	2,181,217	373,375

Source: Turkish Statistics Institute, Education Statistics, 2007.

2.3. Foreign students

The rate of foreign student enrolment in Turkish Higher Education Institutions is quite low and limited to certain countries. 16,455 foreign students were enrolled in 2007 and the majority were coming from Turkmenistan, Ukraine, Jordan and Greece (Table 10). Other countries which send students to Turkey are northern African, Middle and Far East and Caucasian countries. There are no students from EU countries or the USA (ÖSYM, 2007). Foreign students have a very small share in the total enrolment.

Table 10. Number of foreign students in Turkish universities, 2006-2007

	Total	Male	Female
Total	16,455	11,125	5,330
Turkmenistan	1,342		
Ukraine	219		
Jordan	131		
Greece	884		
Other ⁴	13,879		

Source: ÖSYM, 2007.

⁴ Taiwan, Thailand, Togo, Tunisia, Uganda, Oman, Vietnam, Yemen, Zaire, Zambia, Zimbabwe.

Among the OECD countries, Turkey enrolled the most students from Russian Federation in 2002. However over time there has been a decrease in the number of students from this country. Jordan and Greece are also the countries from which students come to Turkey for tertiary education (Table 11).

Table 11. Rate of foreign students in Turkish higher education by country of origin, 2002

Country of origin	Enrolment rate (in percentage)
Australia	0.4
Austria	0.1
Egypt	0.7
Germany	0.2
Greece	2.6
Israel	0.5
Jordan	3.4
Paraguay	0.1
Russian Federation	3.3
Tunisia	0.1
Zimbabwe	0.1

Source: OECD, 2004.

2.4. Mobility

Turkey is a country exporting students and academic staff rather than enrolling foreign students. The number of outgoing students generally increases while the number of incoming students declined over time. In recent years there has been an expansion in the number of Turkish students studying in the USA. The number of Turkish students enrolled in tertiary education in the USA was 12,000, ranking Turkey as the eighth country in the world and the first in Europe among those countries sending students abroad (Turkish University Rectors Committee, 2002). The majority of Turkish students abroad are enrolled in Germany and in the USA followed by France, Austria and UK (Table 12). State and private scholarships are offered to students going to the above-mentioned countries.

Table 12. Rates of Turkish students in tertiary foreign enrolment in OECD countries

Country	Turkish students (in percentage)
Australia	0.6
Austria	3.2
Belgium	0.9
Denmark	0.3
Finland	0.1
France	4.6
Germany	57.3
Greece	0.1
Hungary	0.1
Italy	0.2
Japan	0.2
The Netherlands	1.9
Norway	0.1
Sweden	0.3
Switzerland	1.3
United Kingdom	3.0
United States	25.5

Source: OECD, 2004.

In general, the outgoing movement of Turkish students is more towards European countries and the USA while incoming students are mainly from Asian and Arabic countries.

2.5. Teaching staff

As for teaching staff, the numbers are not adequate to the demand and student numbers. In 2007 the total number of teaching staff in higher education institutions was 89,329 (Table 13). Although there seems to be an expansion in the number of teaching staff over time the average student/staff ratio is generally high: thirty-one to one in Bachelor's programmes and fifty-six to one in vocational Associate's programmes (Mizikaci, 2006).

Table 13. Number of higher education teaching staff, 2007

	Turkish			Foreign		
	Total	Male	Female	Total	Male	Female
Total	89,329	54,242	35,087	1,057	647	410
Full professor	12,773	9,309	3,464	96	85	11
Other	76,556	44,933	31,623	961	562	399

Source: ÖSYM, 2007.

2.6. Access to higher education

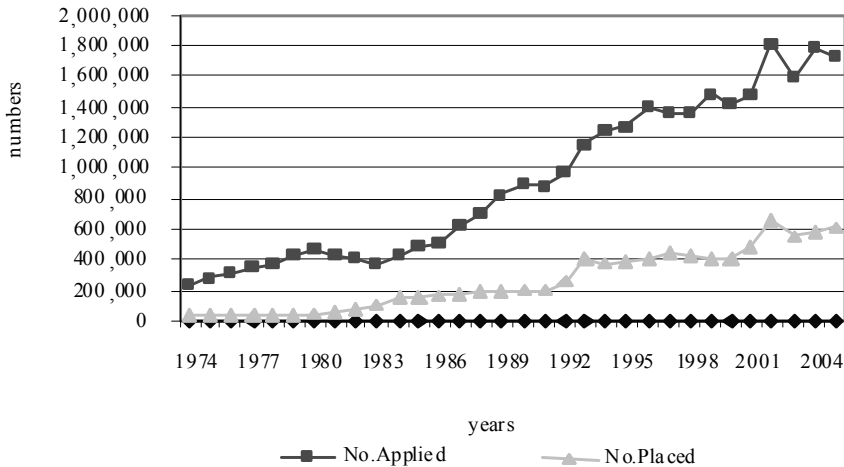
Higher education in Turkey is essentially undertaken by universities. Anyone wishing to enrol in any of the undergraduate programmes has to pass the Student Selection Examination (ÖSS), either as a complete or partial prerequisite for placement. Even the few other higher education institutions such as military colleges, and the police academy require, as a precondition for admission, a certain level of performance on ÖSS. Those who want to pursue their first years of undergraduate studies abroad and then transfer to the programmes of Turkish higher education must also take and attain a certain level of success on ÖSS.

Since 1974 nearly all institutions of higher education in Turkey have accepted students in accordance with the results of the examinations organized by the Student Selection and Placement Center (ÖSYM).

Access Patterns. A big gap exists between the demand and the existing places in the higher education institutions. The demand exceeds by far the places available. Every year more than 1.5 million candidates apply for ÖSS whereas the number of those who are placed in a higher education programme is much lower (ÖSYM, 2005). For example, in the academic year 2004-2005, nearly 1.7 million candidates sat for the exam and only about one third of them were placed in a higher education programme.

Figure 1 illustrates the ratio of application and placement. The gap between application and placement has substantially increased since 1974.

Figure 1. Application and placement ratio by year



Source: ÖSYM, 2005.

Applicant profile. The profile of university entrance exam applicants is diverse. It includes recent high schools graduates; previous graduates; and those who are already enrolled in a university programme.

Another major issue regarding access to higher education concerns vocational education. Programmes for the improvement and enlargement of vocational education and straightforward transition (admission without an exam) to higher vocational education have been launched in 2001.

2. 7. Demographic shifts influencing access to higher education

The reasons for the increase in the number of students are numerous. First of all, there has been a rise in the number of high school graduates as a result of the introduction of eight years of compulsory primary education in 1997. Second, there is a cumulatively increasing candidate group including previous years' under-scorers, who did not perform satisfactorily in the exam. And finally, there are a considerable number of students placed in a specific programme but who take the exam several times in order to be placed in their desired programme. The profile of applicants varies. In 2004

twenty-seven per cent of the students who were placed in higher education programmes were high school graduates of the same year; 39.2 per cent were already enrolled in a higher education programme; 33.9 per cent had been placed in a higher education programme previously; thirty-five per cent were graduates of a higher education programme and 18.7 per cent were not mentioned by education level (ÖSYM, 2004 Press Release). These groups of candidates create a significant snowball effect each year. Although there has been a rapid increase in the number of universities over the past fifteen years, especially private ones, access to higher education remains a challenge.

Demographic pressure on the higher education system emerges to some extent from the composition of secondary school education where students are not provided with competencies for the labour market (YÖK Report, 2004). Those unable to get into a university lack the basic knowledge and skills to earn a livelihood. The curriculum of secondary education does not provide students with life skills, professional or basic academic skills. The only alternative to gain these abilities and competencies is to enter higher education.

The perception that a higher education diploma represents the key to employment reinforces the high unemployment rate among secondary school graduates and people with lower educational levels.

In order to absorb the demand on higher education in Turkey, Cyprus has been announced as "Education Island" in the early 1990s. Private and public investment in higher education in the Northern part of the island has been encouraged. As a result at present there are six universities with approximately 43,000 students. Private as well as public, these universities enrol mainly Turkish students from Turkey (*i.e.*, ninety per cent of total enrolment is from Turkey).

2.8. Projections on higher education population

The projections on the future demographic trends show a substantial growth in the young population by 2015 when twenty-five per cent of the population will be under fifteen years old and seven per cent will be over sixty-five while these figures are fifteen per cent and nineteen per cent

respectively in the fifteen EU countries (Table 14). After 2015, there will be a stagnation period followed by a slow decreasing period.

Table 14. Projections on age groups as percentages of the total population

	Under 15-year-olds		Over 65-year-olds	
	2001	2015	2001	2015
Asia- Industrialized countries	19	14	10	16
Asia- Developing countries	30	26	5	6
EU-15	17	15	16	19
EU-10	18	15	14	17
Bulgaria	15	13	16	18
Romania	18	15	14	15
Turkey	31	25	6	7

Source: UN, 2006.

Turkey already faces the future challenge of scarce participation in higher education. The population of twenty to twenty-nine year-olds is expected to increase by seven to sixteen per cent over the next decade, posing a challenge to the higher education system. In five years the expansion in higher education is projected at forty-three per cent (TÜBİTAK, 2004). This means that the already existing growing pressure to access higher education will continue in the future.

Issues related to demographic changes and an increasing demand for higher education at system level are reported in two official documents: Five-year development plans undertaken by the State Planning Organization and a project entitled "Vision 2023, Science and Technology Strategies" undertaken by TÜBİTAK (The Scientific and Technical Research Council of Turkey). According to the report of the Vision 2023 Project, the age groups of those aged eighteen to twenty-one will increase from 5.2 million to 6.6 million and enrolment rates from thirty-five per cent (including open education) to sixty-five per cent by 2023 (TÜBİTAK, 2004) (Table 15).

Similarly, the graduation rates from secondary school will be three times higher in twenty years. Simultaneously, the percentage of secondary education schooling will expand from the current seventy-three per cent to ninety-five per cent.

An increase in the number of universities by 279 is projected in order to meet the demands of more than six million people by 2023. Placement in

higher education is projected to take place partially without examination. In order to expand the demand for vocational education access to vocational school has been given without exam since 2002. Thus by 2023 ÖSS will place nearly eighty per cent of all applicants. Presently, the Parliament prepares to approve an act on the establishment of thirty-nine universities in 2007. Over the same period, the share of enrolment of private universities is also projected to expand from 68,697 to 865,800 (Table 15).

A double expansion is projected for teaching staff by 2023 (Table 15).

As a conclusion one may notice that in principle new strategies are developed in parallel to the expansion of and demand for higher education.

Table 15. 2023 projections on demographic trends and schooling

Higher education	2005	2011	2023
18-21 age cohort	5,210,000	5,700,000	6,660,000
Schooling (per cent)	35	43	65
Enrolment	1,966,994	2,701,000	5,029,000
Application for ÖSS	1,786,883	2,100,000	1,500,000
Placement	574,866	650,000	1,100,000
Enrolment in private universities	68,697	245,100	865,800
Graduation	245,138	--	--
Total budget of HE (billion USD (2003))	4.3	11.5	32.8
Expenditure per student USD	2.336	4.700	7.000
Number of university	79	140	279
Number of teaching staff (PhD)	78,804	98,000	140,000
Secondary education			
15-17 age cohort	4,167,000	4,074,000	3,650,000
Schooling (per cent)	73	80	95
Number of students	3,039,449	3,259,200	3,467,500
Graduation	683,019	904,428	927,556

Source: TÜBİTAK, 2003.

3. Institutional Higher Education Policies in Relation with the Demographic Changes

Due to a large young population and its dynamism, national and institutional policies in higher education are due to change. The present problems emerging from the large student population and relatively low

enrolment rates require that educational policies are adjusted frequently. In addition, the difficulty of the demand-supply imbalance in higher education is influenced by other factors, *i.e.*, literacy levels, quality and quantity issues in secondary education and regional discrepancies. An analysis of these factors is presented in the following section.

3.1. Factors influencing schooling

Literacy rates. In 1935, (the first year with available statistical data), the proportion of illiterate population was as high as 80.75 per cent, with a rate of ninety per cent for women. Illiteracy rates remained high until the 1970s, with half of the population illiterate. In 2000 the literacy rate grew to 87.32 per cent for the total population and was at 80.64 per cent for women (Table 16). In spite of relatively high increases in the literacy level of the population, the desired standard has not been reached yet. The proportions show gender differences in favour of men. The main reasons for female illiteracy are the male dominant culture and religious factors usually very present in rural areas. Similarly, school enrolment, at all levels, is low among girls.

Table 16. Percentage of literate and illiterate population by sex

Year	Literate			Illiterate		
	Total	Male	Female	Total	Male	Female
1990	80.49	88.81	71.98	19.51	11.19	28.02
2000	87.32	93.86	80.64	12.68	6.14	19.36
2006	88.1	96.0	80.4			

Source: Turkish Statistical Institute Database, 2007.

Basic education reform. With the basic education law, the eight-year compulsory basic education was enacted in 1997. The overall objectives were to increase the quality of education so as to encourage regular attendance, to expand opportunities for all children to attend the one to eight grades; and to encourage children to complete the eighth grade.

Since the enactment of the Basic Education Law, there is a notable increase in the number of primary education classrooms by more than thirty per cent, making room for an additional one million students.

Curriculum reform. Subsequent to the eight-year Basic Education Reform, the Board of Education enacted a curriculum reform in 2003 in order to modernize the basic education curriculum. The movement aimed to raise the educational quality and increase educational outcomes. This ambitious programme was started with consistent consultations and discussions with the teachers, faculties of education and civic society.

Gender gap. Despite reforms and improvements in the education system the gender gap in the educational attainment continues to have an impact on Turkey's education indicators. Girls are out of school mainly in the rural areas. Aggregated education statistics show that ten per cent of those aged six to fourteen are not enrolled in school and nearly three fourths of these children are girls; more than half are children of illiterate mothers. Similarly, one in three high school-aged girls does not attend school, compared to only one in ten for boys. This is the largest gender gap among EU members and candidates. The situation in the Southeast is even more striking with only fourteen per cent of girls attending secondary school. Underrepresentation of women in basic education continues in secondary and higher education levels and translates into low participation in the labour market (World Bank Education Sector Study, 2005).

Regional factors. The distribution of educational resources across regions has not been achieved successfully. Children living in rural areas especially in the East and Southeast are enrolled in schools with limited resources and sub-standard conditions. Inadequacies in physical and human resources produce significant differences in the achievement of children for further educational attainment. Low school quality, inexperienced teachers, lack of educational technology opportunities in poor areas have direct implications on the level of access to secondary and higher education.

Poverty and education. Poverty is another factor influencing school enrolment. Poor children have lower participation rates creating an inequity in education attainment. Children of poor households are not in the education system. Only fourteen per cent of preschool-aged children attended school in 2003, which is a much lower rate than in any other middle-income countries.

Discrepancies in the quality of education are present, depending on the type of school: the prestigious elite Anatolian and Science High Schools are highly prized components in the education system. The graduates of these

schools have higher achievement levels in the centralized entrance exam. The examination system is strictly controlled and selective. The preparation for this examination requires hard work and the support of external costly courses and good quality primary school conditions. The socio-economic background is an important factor to continue in qualified schools. Families with economic means send their children to private tutoring courses to pass both the high school and the university entrance exams. Those families with limited income levels have fewer chances to access high quality secondary schools and a very low chance to access higher education.

Therefore, inequality in the access to higher education is defined by the quality of primary and secondary education, which is mainly bound to regional, socio-economic and education quality discrepancies.

Investment in higher education. Reformative actions tend to be uniform and in small numbers. Under-funding and dependency on state funding lead the country to fall behind EU, the USA and OECD countries' averages in the spending of higher education from the GDP. Figures are respectively 1.1 per cent, 2.7 per cent and 1.6 per cent of the GDP while Turkey spends only 0.9 per cent of its GDP on higher education (Commission of the European Communities, 2005; YOK Report, 2004).

3. 2. Transition to employment and higher education curricula

Serious problems exist in the transition from school to work at all levels. For graduates of higher education, unemployment rates suggest that a high proportion of school leavers face a severe struggle to participate in the labour market. The ever-strong demand of Turkey's young population for the limited number of higher education programmes is reflected in the transition to employment. Only one third of the young population may have a place in tertiary education. Once they graduate, they have to face another challenge in finding employment.

Inadequate participation of persons with a high level of education in the labour market is one of the biggest problems of the present system. In an eight-year development plan, quality and governance issues involved new actions in the higher education system. Raising learning standards and outcomes through improvements in the curriculum, instruction, standards and delivery, and a better use of information communication technologies

are among the objectives. At present, there is no national collaboration programme between labour market and HEIs, systematic data collection or market analysis on the success of graduate accomplishments.

3.3. Institutional policies on demographic shifts

The present higher education institutional policies and strategies related to the demographic trends are mainly in the direction of expansion. Presently higher education institutions are experiencing large numbers of students. In the private universities that promise and advertise for their quality education to attract more students, the size of classes can be as large as fifty to sixty. For the public higher education institutions this creates a burden with limited physical, financial and resources capacity. Each year the student quota has to be expanded exceeding the planned capacity. There are public universities with a very large student population such as Selçuk University with 74,872 enrolments. Anadolu University which holds the largest open education population has 868,780 students of which 239,552 are open education students (ÖSYM, 2007). Many public universities have a population of more than 10,000.

In some aspects there are slight differences between public and private universities. Public universities have the problem of high enrolment rates and problems arising from a large student population. Every year, public universities have to increase admission quotas to respond to the enormous amount of newcomers. However, due to high tuition fees, among private universities there is competition in attracting more students. In terms of student enrolment private universities enrol relatively lower rates than that of public universities. There are as few as 375 enrolments in a newly founded Istanbul Bilim University (ÖSYM, 2007).

Given the high number of students and less competition, curriculum reforms and programme level improvements are rarely considered. Structural changes brought by the Bologna goals are implemented under centralized auditing. A committee appointed by YÖK undertakes work for the establishment of a national quality assurance system.

Policies at systems level go in the direction of establishing more universities to absorb the demand.

Lifelong learning. Lifelong learning investment in Turkey is far behind the EU average. Universities have training centres for continuing education and some randomly delivered courses for public officers. Private universities offer certificate programmes in the same manner. Irrespective of universities research institutions, mainly TÜBİTAK offers seminars for academic staff and researchers for the improvement of the project capacity of Turkish researchers.

The lifelong learning programme within the European integration process is largely managed by the national agency⁵ which makes it possible to have more direct contact with the public. Universities are largely encouraged and provisioned to participate in lifelong learning programmes, such as Comenius, Erasmus, Leonardo da Vinci and Grundtvig. The majority of the universities are registered with the national agency and actively implement mobility programmes and projects. Small and low quality universities such as Ufuk University in Ankara have not registered with the national agency.

Data on public and private investment in lifelong learning are not available.

At present there is no comprehensive national strategies or programmes for job matching, job search assistance, training, vocational guidance counselling. There are private projects undertaken by companies.

Best practices. Koç, a large Turkish company, has initiated a programme on vocational education promoting cooperation between labour market and vocational schools. The programme proposes the development of job-relevant learning strategies focusing on skills critical for securing employment. The programme focuses on vocational education for those who are socio-economically underrepresented in education and have less opportunity to access higher education. The project was launched in 2007 aiming to provide scholarships to graduates of secondary schools for at least one student from each of Turkey's eighty-one provinces to continue their education at a vocational school. As a result 8,000 students will be enrolled in vocational education with the opportunity of internships in

⁵ Center for European Union Education and Youth Programmes (<http://www.ua.gov.tr>).

workplaces and subsequent job placement. This project also aims to support the planned transformation in promotion of vocational education. At present the share of vocational education enrolment is thirty-seven per cent: the nationally targeted objective is to increase it to sixty-five per cent in five years⁶.

Lifelong learning at work. Age specific re-designing of jobs and work systems is limited to the provisions of the present retirement and social security system.

Over the last six to seven years big companies have developed strategies for early retirement to cut high labour taxes for employers. Many young workers have been forced to leave work accepting low pensions and fewer incentives. Another factor for an early retirement push is, particularly in private sector, is entering a process of adapting new labour market developments such as labour saving technologies, internationalisation processes of companies, transitions to computerized systems, and reengineering of workplaces. This trend has been observed mostly in banks, private companies with international connections and in the service sector.

Returning to the labour market is common after early retirement usually in the service sector such as education. Private universities and schools, for instance, lure away public university professors and school teachers encouraging early retirement and attracting them with high salaries. Thus policies and implementations promoting employability of older workers through access to professional training and retraining/pre-retirement programmes are limited to individual thrive.

Unemployment. Data on unemployment indicates that 12.4 per cent of the unemployed population consist of higher education graduates (Turkish Statistical Institute, 2005). For higher education, with about 1.9 million students at present, the future demand will certainly be enormous.

Retirement system. Until 1999, the retirement was available after thirty-eight to forty-three years of employment for workers on wage (SSK

⁶ Information available at <http://www.trakmak.com.tr>.

members⁷) and twenty to twenty-five years of employment for civil servants (Retirement Fund [RF] members), for men and women respectively, which made Turkey the only OECD country having had the youngest retirement age, having produced young retired people and having allowed about thirty years on pension. As a delayed implementation, in 1999 with the Social Security Reform, (Law no: 5434) the retirement age became fifty-eight for women and sixty for men covering all three systems. With this amendment the average retirement age came to the level of many OECD and EU countries where the average retirement age is fifty/sixty or sixty/sixty-five. However the retirement scheme of RF has been amended and a period of twenty/twenty-five working years is turned into retirement age, still allowing early retirement (Mizikaci, 2006b).

4. Conclusions and Recommendations

4.1. Conclusions

If Turkey is to join the EU-27 today, it would add fifteen per cent to its population as well as eighteen per cent to its size, but only 2.2 per cent to the GDP. The average GDP per head of the EU-27 would fall by nine per cent (Turkey Labour Market Study, 2006).

As concerns demography Turkey is characterized by a young and dynamic population. Nearly thirty per cent of the population is under fifteen years of age while more than sixty per cent are at working age. This demographic structure not only puts pressure on economic and social development, but also provides an advantageous position.

In spite of an advantageous young and working age population, participation in higher education and the labour force is rather low. The creation of higher education opportunities and jobs for young people has remained severely undersized over the last fifteen years. The slow and inefficient creation of education and employment opportunities puts pressure on the social and economic development of the country.

⁷ There are three social security systems in Turkey: SSK mainly for workers; Retirement Fund for civil servants and BAGKUR for self-employed persons.

The low participation of women in higher education and the labour force is another setback. Between 1988 and 2003 unemployment for urban men was of about eleven per cent, yet for urban women it fell from twenty-eight per cent to eighteen per cent. Many women, discouraged by limited opportunities, have dropped out of the labour force. Education plays a crucial role in encouraging female labour force participation: university-educated young women have participation rates close to those of men (Turkey Labour Market Study, 2006).

Unemployment is extremely high among educated young people, averaging thirty-nine per cent for university graduates in the twenty to twenty-four year-old cohort and fifteen per cent for those aged twenty-five to twenty-nine (Turkey Labour Market Study, 2006). As of September 2005 only 3.8 per cent of the employed have a higher education diploma while forty-nine per cent are recorded illiterate. This might partly be due to the proportion of agricultural workers, and rural area employment is always higher than those of industry and service sector workers. The education level of the workforce also decreases with age.

According to the results of the Labour Market Study (2006), Turkey's job deficit poses a challenge as the country moves toward EU accession. To meet the Lisbon target employment rate set by the European Council, Turkey would have to create fourteen million jobs by 2010. Current GDP and employment growth rates indicate that the actual number will be closer to 1.5 million. Similarly within this demographic profile Turkey needs to increase the enrolment rate in higher education to sixty-five per cent by 2023 from thirty-five per cent in 2005 (TUBITAK, 2005).

The challenges for higher education. In order to look to future policies and planning of higher education, an analysis of the present system is necessary. The higher education system as it is today, a centralized structure and funding make universities strongly dependent of the state and universities lag behind worldwide at national level competition over prestige, accountability and resources. As its counterparts in many European countries, Turkish higher education is suffering from over-regulation, *i.e.*, nationally defined regulations on curricula and management, as well as recruitment regulations for academic staff. Too much dependence on a centralized system prevents higher education institutions from innovation concerning their curricular revisions, adjustments and interdisciplinarity.

Change is always also a matter for legislation. The present Higher Education Law has been changed with more than thirty amendments since 1981. However, dependency and the less autonomous structure of the universities remained.

Most of the universities offer the same mono-disciplinary programmes with traditional methods. Universities are not encouraged to explain the specific value of what they produce for learners and society. They remain to a large extent insular within the framework of national objectives. The majority of universities produce graduates with little entrepreneurial skills for the local and global labour markets. As a consequence, in its present system, Turkish higher education has difficulties in preparing students for the national and international labour market, leading to low enrolment rates of graduates and having difficulties to train capable teachers and researchers.

Demographic changes raise questions not only for the current structure of the workforce and labour market but also for society and lifestyles. A growing older population, most of all, adds pressure on government policies and legislations of employment, the unemployment, the social security system, public pension schemes, health insurance/care programmes and education (*e.g.*, lifelong learning). Second, an ageing population of workers will bring about challenges for the attitudes of employers, work conditions, quality of work, longer employment, incentives for longer stay, actuarial, seniority based pay scales, a culture of lifelong learning, etc. Last, but not least, the social aspect of ageing population will raise issues of social acceptance, support and care systems.

Mobility. Several American and European universities are attracting many of the best students often with scholarships. This one-way movement of Turkish students cannot be seen as mobility or internationalisation. There is also the "study abroad" period which enables students and researchers, registered in a "home" university, to take a part in studies relevant to their programme abroad.

The share of foreign enrolments dramatically declined to twenty-six per cent by 2004 (OECD, 2004). Turkey is among the twenty top countries sending students to Germany and Austria (EUROSTAT, 2003). Due to the labour migration, these two countries host the second generation of Turkish migrants in tertiary education. Especially in Germany, a distinction is made

between resident students with foreign citizenship and incoming students with foreign citizenship. Obviously, Turkish students fall into the permanent resident group with 20,201 students while there were 3,540 students with foreign citizenship in 2004 (OECD, 2004). Therefore, it would be a premature interpretation to say that the number of Turkish students in Germany and other European countries has risen due to new European mobility programmes launched by the Bologna Process and other European agreements.

Employment. Preparations for the demographic challenges ahead should be on the agenda most markedly of the governments regarding the social security system but also of the employers changing working and retirement requirements and conditions for older workers. Companies have to prepare now for the needs which arise from having increasing numbers of older employees. Incentives and support for older employees to stay longer in their jobs should also be created.

4. 2. Recommendations

Structural changes should be in the spirit of decentralization from state-controlled higher education strategies to an accountable society and an investment in modernization of the knowledge sector (Lisbon Strategy). This requires that the state establishes partnerships with universities. Competitiveness, quality, excellence, mobility and Europeanization should be reconsidered. Europeanization should be emphasized with ambitious strategies to address enrolment and employment issues.

Private higher education needs to be enlarged in its capacity, taking the equal opportunity concern into consideration. Tuition fees, which are the centre of discussion for private universities, can provide access opportunities for lower income groups if the funds were recycled into a sound student loan system. This can be done through stable legislative alterations. Private higher education institutions have more capacity to establish partnerships with the industry. Stronger and sustainable cooperation with the labour market in the framework of a national quality assurance system should be encouraged.

At the same time, the choice of students in favour of general high schools place great demand on higher education institutions, which don't

have sufficient capacity to meet the demand, and cause a lack for medium level workforce. The modernization and new reformative actions in secondary level vocational and technical education institutions aim at making this level and type of education more attractive, and currently attract sixty-five per cent of the students to these schools (Schools of Vocational Education).

Better distance education is another ambitious project that could absorb the burden of traditional higher education. More than thirty per cent of enrolment is in distance education.

Other than vocational education and distance education expansions the private sector's involvement in education, lifelong learning strategies and mobility issues can be considered as remedial issues. Increasing compulsory education to twelve years (eight at the moment) could be another strategy to size down higher education demand.

Turkey has a great human potential for higher education. As it is today, Turkey's demography will still be an asset in 2023. In Turkey, where one third of young population is under the age of twenty-two, the sustainability of a young population becomes more meaningful within the context of social mobility and particularly in view of the high social mobility of the female population. This constitutes one of Turkey's strong characteristics concerning human resources. Necessary initiatives to achieve these goals are underway.

References

- ACMA, B. 2002. Economic Consequences of International Migration: Case Study of Turkey. [Paper presented at the] *Conference on "Poverty, International Migration and Asylum"*, 27-28 September, 2002, Helsinki.
- BLLO, D. E. and WILLIAMSON, J. G. 1998. Demographic Transition and Economic Miracles in Emerging Asia. *World Bank Economic Review* 12(3), pp. 419-456.
- BOERI, T. and BRÜCKER, H. 2001. *The Impact of Eastern Enlargement on Employment and Labour Markets in the EU Member States*. Brussels: EC.
- COMMISSION OF EUROPEAN COMMUNITIES. 2004. *Issues Arising from Turkey's Membership Perspective*. Brussels.

- ERZAN, R., KUZUBAŞ, U. and NILÜFER, Y. N. Büyüme ve Göç Senaryoları: Türkiye-AB [Growth and Migration Scenarios: Turkey-EU]. [Paper presented at the] *Annual Conference "AB-Türkiye İlişkilerinde Göç konuları: Dış Göç Dinamikleri ve Göçmenlerin Uyumı"* [Migration Issues in EU-Turkey Relations: Dynamics of Immigration and Immigrants' Harmonization], October 8-9, 2004, *Boğaziçi University, Turkey*. (In Turkish)
- EUROSTAT (2003). *Statistics on Student Mobility within the EU*.
<http://www.epp.eurostat.ec.europa.eu> (Accessed 20 March 2007)
- KIRIŞCI, K. 2003. *Turkey: A Transformation from Emigration to Immigration Information Source*.
<http://www.migrationinformation.org> (Accessed 11 June 2007)
- MIZIKACI, F. 2006. *Higher Education in Turkey. Monographs on Higher Education*. Bucharest: UNESCO-CEPES.
- , 2005. Seniority, Demographic Trends, Employment and Retirement: An Overview of Turkish Case. [Paper presented in] *Steering Group of The Netherlands Seniority Foundation, 26-27 January 2005, Venray, Netherlands*.
- ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD). 2004. *Education at a Glance 2004*. Paris: OECD.
- SCIENTIFIC AND TECHNICAL RESEARCH COUNCIL OF TURKEY (TUBITAK). 2005. *Vision 2023 Science and Technology Strategies Report*. Ankara: TÜBİTAK Publication.
<http://www.tubitak.gov.tr/home.do?ot=1&sid=554&pid=547>
- STUDENT SELECTION AND PLACEMENT CENTER (ÖSYM). (Turkey). 2007. *Higher Education Statistics 2006- 2007*. Ankara: ÖSYM Publication.
- , 2007. *ÖSYM Press Release on Application Results*.
<http://www.osym.gov.tr> (Accessed 2 December 2006)
- , 2006. *Selection and Placement of Students in Higher Education Institutions in Turkey*.
<http://www.osym.gov.tr/BelgeGoster.aspx?F6E10F8892433CFF7A2395174CFB32E15F640FC6104C033D> (Accessed 10 March 2008)
- , 2004. *ÖSYM Press Release on ÖSS Results*.
<http://www.osym.gov.tr> (Accessed 2 December 2006)
- TURKEY. INSTITUTION OF SOCIAL INSURANCE. 2007. *Report*.
<http://www.ssk.gov.tr> (Accessed 13 June 2007)
- TURKEY. MINISTRY OF EDUCATION. 2007. *Formal Education 2006-2007*. Ankara: ME.

TURKEY. MINISTRY OF HEALTH. GENERAL DIRECTORATE OF MOTHER AND CHILD HEALTH AND FAMILY PLANNING AND HACETTEPE UNIVERSITY. INSTITUTE OF POPULATION STUDIES. 2003. *Turkey Demographic and Health Survey*. Ankara: Hacettepe University Publication.

TURKISH STATISTICAL INSTITUTE, 2007. *Household Survey Results*.
<http://www.tuik.gov.tr> (Accessed 18 April 2007)

-----, Databases. (In Turkey)
<http://www.tuik.gov.tr> (Accessed 20 April 2007)

TURKISH UNIVERSITY RECTORS' COMMITTEE and TURKISH COUNCIL OF HIGHER EDUCATION. 2002. *Higher Education Strategies: Report of Turkish University Rectors Committee*. Ankara: YÖK Publication.

UNITED NATIONS (UN). 2006. *World Population Prospects. The 2006 Revision Database*.
<http://esa.un.org/unpp/> (Accessed 9 June 2007)

WORLD BANK (WB). 2006. *Turkey Labour Market Study*.
http://siteresources.worldbank.org/INTTURKEY/Resources/361616-1144320150009/Labor_Study.pdf (Accessed 10 March 2008)

WORLD BANK. TURKEY OFFICE. 2005. *Sustainable Pathways to an Effective, Equitable, and Efficient Education System for Preschool through Secondary School Education*. (Education Sector Study, 32450-TU). Ankara.
http://siteresources.worldbank.org/INTTURKEY/Resources/361616-1142415001082/ESS_Main_Report_V1.pdf (Accessed 10 March 2008)

Demographics and Higher Education in the United Kingdom Today and Some Scenarios for Tomorrow

Peter SCOTT

Introduction

In the past two decades the United Kingdom has moved from low to medium levels of participation in higher education (HE) to high levels of participation. According to OECD statistics five-year-olds in the United Kingdom in 2004 could expect to enrol in 20.7 years of full-time and part-time education during their lifetime compared with the OECD average of 17.4 years. According to the same statistics the United Kingdom graduation rate for all first degrees (39.3 per cent) was also above the OECD average (34.8 per cent). The number of students in the United Kingdom higher education institutions rose from just over 800,000 in 1987 to 2.29 million in 2004-5, an increase of 180 per cent (National Statistics, 2006). Participation in higher education has increased from less than a quarter of the relevant age group to more than forty per cent (although there have been significant methodological problems about measuring participation, which will be discussed later, there can no room for doubt that participation has increased by more than fifty per cent).

Over the same two decades higher education in the United Kingdom has been transformed, from a system still characterised by a relatively high degree of student selection and of institutional homogeneity in terms of values and missions in the mid-1980s (and having many of the qualities of 'elite' higher education in Martin Trow's tripartite terminology) to a system characterised by relatively open access and much greater institutional heterogeneity in the mid-2000s (and clearly having the qualities of 'mass' higher education in Trow's scheme). This transition from being a system which twenty years ago was still regarded, and regarded itself, as exceptional by general European (and world) standards to become a system

now acknowledged to be more normal by these same standards is perhaps the single most important change in United Kingdom higher education. However, both the causes and consequences of this transformation remain unclear: the extent to which the expansion of higher education in the United Kingdom has been driven by demographic factors – whether overall population growth, changes in the socio-economic structure of the United Kingdom population or the equalisation of participation rates among different socio-economic groups – remains contested. The most rapid period of expansion, in the late 1980s and early 1990s, coincided with a decline in the number of young adults while female participation in higher education had already equalled, and then exceeded, male participation well before 2000. It seems likely that the impact of demographic factors, rather than being strongly and directly correlated with the expansion of higher education, was either mediated through Government policies, notably changes in secondary school qualifications which had the effect of increasing the pool of available HE entrants but also efforts to raise levels of attainment in secondary schools, or contributed to other forms of more fundamental social and cultural change, for examples in gender roles and constructions of ethnicity; there is also room for debate about the extent to which the transformation of United Kingdom higher education was a by-product of expansion (fuelled to some degree by demographic and related factors, however imprecise the correlation), but also about the character (and intensity) of that transformation. Again it seems likely that changes in higher education reflected a wide range of factors; for example, changes in institutional funding, shifts in the labour market (in particular the relative decline in the number of jobs for non-graduates), the impact of globalisation and the emergence of a distinctively 'graduate culture' linked to highly significant shifts in lifestyle. It is also possible to over-interpret or misinterpret the transformation of United Kingdom higher education. The growing heterogeneity of the system was not simply a product of the differentiation of institutional missions, a form of market segmentation, but also of 'mission stretch' which affected all higher education institutions whether elite research universities or local and regional institutions. The increasing heterogeneity of the student population was as much as a qualitative as a quantitative phenomenon. This 'mission stretch' also affected other national HE systems, in very different demographic contexts.

This report is divided into five sections:

- i) The expansion of United Kingdom higher education between 1963 and 1997 in its social, cultural and political context, including both 'push' factors, *i.e.*, the impact of demographic factors and changes in government policies on student demand; and 'pull' factors, *e.g.*, changes in institutional policies;
- ii) The current pattern of demand for United Kingdom higher education, including both the disparities between participation rates among different socio-economic and ethnic groups and by gender and region as well as the distribution of different types of students across the system;
- iii) Changes in the indices used to measure levels of participation; and methodological issues raised by the need to have robust measures of participation (and, in particular, reliable time series that measure progress);
- iv) Policies developed, targets set and initiatives taken by the present United Kingdom government (which has been in power since 1997) to stimulate demand, to promote more equitable access and to encourage wider participation in higher education;
- v) Future projections of the demand for higher education in the United Kingdom, based on demographic factors, estimates of qualified applicants, the likely impact of policy initiatives (*i.e.*, on school improvement and skills) and strategic developments in higher education at both system and institutional levels.

The report concludes with a discussion of the overall impact of demographic factors (interpreted in the widest possible sense) on the changing character of higher education in the United Kingdom.

1. The Expansion of Higher Education in the United Kingdom between 1963 and 1997

Between 1963 and 1997 a recognisably modern system of higher education was established in the United Kingdom for the first time. The number of students increased from 216,000 to more than 1.7 million. The participation

rate among young adults increased from 8.5 per cent to thirty-four per cent. There was a three-fold increase in the number of higher education institutions with the establishment of entirely new universities on green-field sites and the promotion of other institutions to become universities (the colleges of advanced technology in 1965 and the polytechnics in 1991). Public expenditure on higher education increased from £219 million in 1962-63 to £7.2 billion in 1995-96. In the 1970s the training of school teachers, including teachers in primary schools, and two decades later the education and training of nurses and other healthcare professions were firmly incorporated into higher education, greatly extending its scope and scale. The Open University, with more than 160,000 students, was the flagship of an expanding sector of part-time higher education (as well as distance learning). Higher education in the United Kingdom was transformed from a small, uniform (and exclusionary?) system, still dominated by Oxford and Cambridge, into a much larger, more open and diverse system.

Such a fundamental transformation, paralleled in most other European countries but perhaps more profound in the United Kingdom because of the more restrictive character of its higher education system, clearly could not be attributed to a single cause but was instead the result of complex socio-economic, political, cultural – and, of course, demographic – factors. However, in a direct sense demography was not the major driver of the expansion of higher education between 1963 and 1997, nor of its wider transformation. The overall population of the United Kingdom grew only modestly over this period, from fifty-three million in 1961 to fifty-nine million in 1995 (and it is only projected to increase to £61 million by 2021, although it has been suggested that this figure may be too low because of greater-than-expected immigration). There were important shifts in the age structure of the United Kingdom population over this period – but generally to the disadvantage of younger age groups, which even in 1997 still provided the bulk of entrants to higher education. In fact there was little correlation between the size of the student population in higher education and the number of eighteen-year-olds.

The expansion of student numbers was most rapid during two periods, the 1960s and the late 1980s / early 1990s, with the 1970s and early 1980s being a period of much slower growth. The first of these two periods of rapid growth was accompanied by a rapid rise in the number of eighteen-

year-olds, in effect the children of the post-war 'baby boomers' – from 600,000 in 1959 to more than 900,000 in 1965. It was to cope with this short-term crisis, of potentially unsatisfied demand, that the Robbins committee was appointed. However, the second period of rapid growth took place at a time when the number of eighteen-year-olds was in sharp decline – from 900,000 in 1984-85 back down to barely 650,000 in 1995-96. A discussion document published by the Department for Education and Science and the Scottish Education Department in 1978 had even asserted that "demographic decline will be such a strong influence that total higher education numbers will reach a plateau in the mid-1980s and in the 1990s fall sharply." Exactly the opposite happened; the number of full-time students increased from fewer than 600,000 in 1986 to almost a million by 1995. Indeed it has been argued that it was during this decade that the United Kingdom made the decisive breakthrough to acquire a truly mass system of higher education.

Other explanations apart from demography, therefore, are required to explain the expansion of the United Kingdom higher education system between 1963 and 1997. Four factors appear to have been particularly significant:

- i.* changes in the political environment;
- ii.* shifts in family and occupational structures;
- iii.* rising levels of attainment in secondary education;
- iv.* shifts in social identities and cultural attitudes.

1.1. Changes in the political environment

This period – when the United Kingdom acquired a system of mass higher education – was bracketed by two celebrated higher education reports – the report of the Committee on Higher Education (the Robbins Report) published in October 1963, and the report of the National Committee of Inquiry into Higher Education (the Dearing report) published in July 1997. Both reports had been commissioned by conservative governments but largely implemented by incoming Labour governments. Both were themselves highly significant interventions – in terms not simply of steering higher education policy (where, in fact, their record of successful persuasion

was mixed), but also shaping public attitudes towards the scope and potential of higher education. In particular the Robbins report established a 'principle' of eligibility which articulated for the first time a concept of entitlement to higher education (and which ultimately undermined the alternative concept of selection). The opponents of Robbins who rallied under the banner of 'more will mean worse' were right to identify the radical implications of this 'principle', however qualified initially. The Dearing report perhaps had less immediate impact outside the higher education policy world, but it did succeed in establishing in the public's mind a clear and direct link between investment in higher education and success in meeting the challenges of the wider 'Learning Society' (Robbins report 1963, Dearing report 1997).

The Robbins and Dearing reports, therefore, helped to articulate, and consolidate, two key political themes. The first was that, in the long revolution of educational advancement, there should be a progressive extension of the educational 'franchise': first, the creation of a universal and compulsory system of elementary education in the 1870s, then the establishment of secondary education for all beginning after 1918 and culminating in the 1944 Education Act, subsequently progressive extension of the (minimum) school leaving age and finally the development of a much more accessible system of higher education (which embraced not only the traditional universities but also other forms of higher professional education). This progressive extension of the educational 'franchise' was closely aligned with the emergence of a more democratic political culture. The second key political theme was that, in order to secure economic growth and social development, it was necessary to educate an ever increasing proportion of the population to ever higher levels of skills and knowledge. This task was made more urgent in the 1960s and 1970s by perceptions of the United Kingdom's comparative economic decline and in the 1980s and 1990s by a growing awareness of the challenges posed by globalisation for a mature industrial-age economy such as the United Kingdom's. Both themes, of course, were intertwined in complex ways as active political and civic participation, social inclusion and economic advancement came to be seen as mutually dependent. But the important point to emphasise is that public policy and popular attitudes reinforced the belief that the expansion of higher education was needed. This strong

consensus generated not only the political will to provide the resources required to fund this expansion but also the social expectations, in communities and among individuals, to participate in higher education (regardless of demographic variations).

1.2. Shifts in family and occupational structures

The second factor, shifts in family and occupational structures, was closely linked to the first, changes in the political environment, (and also to the fourth factor, shifts in social identities and cultural attitudes, which is discussed later in this report). A number of key shifts took place between the mid-1960s and the mid-1990s. Two phenomena are particularly relevant in terms of influencing the demand for higher education:

- i.* The first was the shift from an industrial to a post-industrial economy – which, in the case of the United Kingdom, was intensified by the substitution of a welfare-state ethos by more free-market policies (which were most aggressively pursued between 1979 and 1990 when Margaret Thatcher was Prime Minister). As a result of the deregulation of the labour market unemployment rates fell, although many of the new jobs created were for part-time workers and in small and medium-sized enterprises. There was a marked decline in employment in primary and manufacturing industries and a corresponding rise in high-technology, design, service and other tertiary knowledge-intensive industries. Although there was a proliferation of marginal employment as a result of privatisation, the number of high-skill jobs substantially increased as a proportion of total employment. Increasingly careers were confined to those with graduate-level qualifications, as secure jobs for secondary school leavers became scarce. The structure of the United Kingdom economy, therefore, stimulated the expansion of higher education from the point of view of individuals whose economic (and consequently social) status was threatened if they were not graduates, and from the point of view of the national economy because the greatest demand was for graduate-level jobs.
- ii.* The second phenomenon was the decline of the welfare state and the rise of the market state, which was reflected in a fundamental

rebalancing of public investment and private consumption. Between 1971 and 1990 the average household income almost doubled, in real terms, which had the effect of stimulating demand for higher education because higher levels of disposable income meant that more families were able and willing to accept the substantial up-front cost of higher education, mainly in the form of foregone earnings (and also because in an increasingly consumer-oriented society higher education itself came to be seen as an increasingly attractive consumption good as well as a high-yield investment). Between 1976 and 1997 the growth of expenditure on public services was severely constrained, which would have had the effect of reducing the supply of higher education, still a predominantly publicly funded service, if colleges and universities had not been forced to operate much more efficiently (public funding per student declined by more than forty per cent between 1976 and 1995). The overall effect, therefore, was to stimulate the continuing expansion of higher education.

1.3. Rising levels of attainment in secondary education

Throughout this period the largest single group of higher education entrants was suitably qualified secondary school leavers, *i.e.*, those with Advanced Level passes in the General Certificate of Education (A levels) in England, Wales and Northern Ireland or Higher Grade passes in the Scottish equivalent (Highers). The most accurate determinant of the total number of entrants to higher education was (and continues to be) the number of qualified school leavers rather than the overall size of the eighteen to nineteen-year-old age group. Although the two latter figures were obviously related, they remained independent variables. In fact the ratio between the number of qualified school leavers and higher education entrants was largely unchanged over this period – while the ratio between higher education entrants and the total number of eighteen and nineteen-year-olds varied substantially (notably between the mid-1980s and mid-1990s when there was a reverse correlation).

In 1961, eighty per cent of school leavers with two or more A levels in England and Wales went on to some form of higher education (and seventy per cent of those with only one A level, predominantly into teacher

training). But at that time only nine per cent of eighteen-year-olds were still in full-time education and only seven per cent obtained two or more A levels. At the time of the Dearing report forty per cent of eighteen-year-olds were still in full-time education and thirty per cent obtained two or more A levels. However, this overall consistency was maintained because the widening of higher education's social base, which weakened the correlation between qualified school leavers and higher education entrants because qualified leavers from lower socio-economic groups were less likely to participate in higher education, was counter-balanced by the narrowing of the gender gap among higher education entrants (and girls were not only higher achievers than boys but also more likely to participate in higher education).

The two most rapid periods of growth in higher education between 1963 and 1997 – the 1960s and the later 1980s and early 1990s – were clearly aligned with significant increases in the number of qualified school leavers: the first followed the abandonment of the former distinction between (academic) grammar schools and (vocational) secondary modern schools and the establishment of comprehensive schools that catered for all students. This change was accompanied by a substantial rise in the number of students obtaining first Ordinary level passes in the GCE (O levels) and then A levels – partly because the size of the age group also increased but also because O-level and A-level courses were now available to many more students (previously they had, in effect, only been available to students in grammar schools) and because of growing optimism about the educational potential of all young people; the second increase followed the replacement of the GCE by the General Certificate of Secondary Education (GCSE) in the mid-1980s. Previously students had taken two different examinations at the age of sixteen – O levels (which qualified them to take A levels, in effect the entrance examination for higher education) or the more vocationally oriented Certificate of Secondary Education (CSE). Just as the establishment of comprehensive schools in the 1960s had enlarged the potential pool of those likely to obtain A levels, so the creation of the GCSE in the 1980s further enlarged the pool of those qualified to enter higher education.

1.4. Shifts in social identities and cultural attitudes

The fourth factor stimulating demand for higher education in the United Kingdom between 1963 and 1997 was the most complex but also perhaps the most decisive. During these three decades or more important shifts in social identities and cultural attitudes took place which both intensified some demographic trends and counter-acted others. Two of these shifts arose from changes which have already been discussed – changing family and occupational (and, consequently, class) structures.

In the case of the former, family structures, the most prominent phenomenon was the increasing number of older people. But there was also a significant increase in the number of single-person households. These were not only the old but also younger age groups. There was also a significant decline in the number of marriages and increase in co-habitation (and also an increase in the number of divorces). One consequence was that fertility rates declined, and the age at which mothers gave birth increased. But the impact of all these changes on the demand for higher education was complex. For example, fertility rates did not decline significantly in higher socio-economic groups which still provided the bulk of higher education entrants. Longer life-spans were also most common among the same groups, leading to a significant demand from more mature students (the fact that the number of postgraduate students increased more rapidly than undergraduate students was a significant trend).

In the case of the latter, occupational structures, the most significant shift – which has already been discussed – was the decline in the number of traditional working-class jobs, in primary and manufacturing industries, followed by a less precipitate decline in the number of middle-grade administrative and managerial jobs, which had absorbed large number of secondary school leavers, as private-sector organisations down-sized and the welfare state contracted (especially during the Thatcher years). These declines were accompanied by a corresponding increase in the number of 'graduate' jobs – in higher-technology occupations and in the professions. So powerful 'push' and 'pull' forces stimulated greater participation in higher education; the former because fewer decent jobs were available for non-graduates; and the latter because of the lure of enhanced socio-economic status, better career prospects and increased earnings. These

forces not only acted directly on the labour market but also indirectly, and perhaps more powerfully, on social attitudes.

Two consequences were particularly important in shaping the demand for higher education. The first, which was produced by these weaker family structures and more volatile occupational structures, as the development of a 'graduate culture', as a substitute for traditional forms of social identification which were no longer available (for example, working-class solidarity or middle-class gentility). During this period being a graduate came to confer a broader social status that complemented the acquisition of cultural capital and expert skills which had always been a hallmark of higher education. More crucially not being a graduate led to a loss of social status, in all but the most socially privileged groups. This 'graduate culture' was one component of a more fundamental shift in society in the United Kingdom, as traditional patterns of deference were eroded and the sharper contours of class society were softened. 'Graduate culture' also had wider resonances with the emergence of a distinctive 'youth culture', which through its links to popular music and culture and association with new patterns of consumption, was perhaps more advanced in the United Kingdom than in other countries (especially during the 1960s and 1970s). As a result participation in higher education became much more relevant to individual and social identities than ever before, and directly not simply mediated through other socio-economic and cultural hierarchies.

The second consequence was even more important, and arguably the single most important driver in the expansion of higher education in the United Kingdom between 1963 and 1967. The changes in family structures were to a significant degree a reflection of rising aspirations among women; and, at the same time, they deeply influenced the pattern of women's lives and careers. Similarly the changes in occupational structures, if not entirely favourable to women, undermined some crucial – and traditional – male career patterns much more. These structural changes were intensified by political and social changes – for example, on contraception and abortion – and also by ideological shifts, notably, of course, the cultural changes subsumed under the label of 'feminism'. As a result female participation in higher education boomed. At the time of the Robbins report only a quarter of students at British universities was women (although two-thirds of students in teacher training colleges were female). Almost ten per cent of

men in the relevant age group participated in higher education compared with just over seven per cent of women. Even as late as 1979-80 only thirty-seven per cent of the students in higher education were female. But by the time of the Dearing report more than half of the students were women. A remarkably social revolution had been accomplished – silently but decisively.

2. The Current Pattern of Demand for United Kingdom Higher Education

Higher education in the United Kingdom today has a number of key characteristics which can be summed up in terms of the following headlines (Clark, 2006, HESA, 2007):

- It is a mass system – with more than 2.3 million students enrolled and an annual output of 640,000 graduates (among the highest in Europe);
- It has experienced slower growth in the past decade than in the previous ten years of rapid growth, but is still far from approaching ‘steady state’;
- Participation rates are stagnating, mainly because of the approaching impact of a significant decline in the number of young adults;
- The majority of students are female, at undergraduate level there are four female students for every three male students, and at postgraduate level there are six for every five;
- Ethnic minorities are better represented in higher education than in the overall population, with sixteen per cent of the total student population compared to eight per cent of the United Kingdom population;
- More than ten per cent of students in United Kingdom higher education come from outside the European Union, and four per cent from other EU countries.

The key statistics (for 2004-05) are as follows (HESA, 2006):

	Total	Men	Women	Full-time	Part-time	Other EU	International
	2,336,110	996,940	133,9175	1,354,040	903,075	106,220	224,855
Postgraduate	545,370	254055	291315	234220	311,150	47,035	124,545
Undergraduate	1,790,740	742,885	1,047,860	1,119,820	591,925	59,185	99,310

The Higher Education Initial Participation Rate (HEIPR), which is the sum of initial HE participation rates for English-domiciled seventeen to thirty-year-olds who are expected to stay for at least six months in higher education, was forty-two per cent in 2004-2005, which was actually down from a peak of forty-three per cent two years before, because the number of initial entrants to higher education was increasing at a slightly slower rate than in the general increase in the relevant age group. This reflects the slow-down in expansion which has been apparent since 2001-2002. Some attribute this slow-down to the delayed impact of the government's decision in 1998 to charge real fees by requiring students to make a direct financial contribution to the cost of their higher education. But this remains a matter of controversy.

There are significant national variations within the United Kingdom and even more significant regional variations within England. The equivalent rate is more than fifty per cent in Scotland, while participation in London and the south-east of England is substantially higher than in the north of England. The variation between English regions can be largely explained in terms of their different social class structures, because there continue to be wide disparities between participation rates by different social classes (to below), rather than to any specifically regional effect (or cultural differences). However, this does not explain the variation between England and Scotland because the social class effect by itself would depress participation rates in Scotland. The main explanation, therefore, must lie in cultural and historical differences (in essence Scotland has a more democratic tradition of higher education than England). The case of Wales is an intriguing hybrid. Historically it enjoyed higher levels of participation

but these have now slid back below the English rate; in effect cultural factors appear to have succumbed to the social class effect.

This social class effect is the most contentious aspect of the debates in the United Kingdom about participation in higher education. At the time of the Robbins report a young person whose father was in a higher professional occupation was thirty-three times more likely to enter degree-level higher education than a young person whose father was in a semi or un-skilled occupation; a boy whose father was in a non-manual occupation was five times more likely than a boy whose father was in a manual occupation and for girls the ratio was nine to one. To a significant extent the Robbins committee built its case for expanding universities and colleges on this remarkable disparity; substantial new demand would be created if the gap was narrowed. More than thirty years later the Dearing committee was able to report some improvement – but a wide gap remained. While almost eighty per cent of young people from the “professional” socio-economic group participated in higher education, the equivalent figure for young people from the “unskilled” socio-economic group was less than ten per cent. Young people from the top three socio-economic groups comprise seventy-three per cent of all students while those from the two bottom socio-economic groups only made up twenty-seven per cent. The most recent figures suggest that not much change has taken place in the past decade. The number of socio-economic groups was increased from six to seven following the 2001 census – but in 2004-05 less than twenty-eight per cent of students came from the bottom four groups.

However, initial suggestions that the gap between participation rates by different socio-economic groups had actually become wider – in other words, the social class effect had got worse – are now generally discounted. The current consensus among statisticians is that the gap has narrowed, but only marginally (Kelly and Cook, 2007). It is also argued that the social class effect is really a school, or qualification, effect because it almost disappears once account is taken of the secondary school attended by young people and the type and level of the qualifications they achieve. In other words, young people from the bottom socio-economic groups who attend the same school and achieve the same qualifications as young people from the top socio-economic groups are not much less likely to participate in higher education. The counter-argument, of course, is that because there are many

fewer in the first category than the second they are a more heavily selected group, so their success is hardly surprising (indeed it might have been expected that they would out-achieve their more privileged peers with the same experience and qualifications).

The impact of demographic factors on participation in higher education is felt in a number of ways: first, the number of eighteen-year-olds has been increasing since 1996 and will continue to rise until 2010, although the annual rate of increase was much more rapid in the late 1990s than it has been in the past five years. Young adults remain the largest single group of students – with seventy-two per cent of all students being aged twenty-one or younger, a further thirteen per cent being aged between twenty-one and twenty-four and only 9.6 per cent being aged over thirty. Therefore the size of this particular age cohort remains the single most important determinant of demand for higher education; second, the number of eighteen-year-olds in the top socio-economic groups has increased more rapidly than the number in the bottom socio-economic groups. In outline it has been sustained, or increasing, fertility in middle-class families that has fuelled the present rise in the number of young people in the United Kingdom population; just as it will be declining fertility in working-class families that largely explained the projected decline in the size of that cohort; third, the middle class has expanded while the working-class has shrunk as a result of changes in the occupational structure. In 1992 the top three socio-economic groups made up just over fifty-five per cent of the total United Kingdom population and the bottom three just below forty-five per cent. By the year 2000, just before the classification of these groups was changed, these proportions were more than sixty and less than forty per cent.

This third factor, of course, raises the interesting question of whether the increasing number of middle-class young people can be explained by the fact that the middle class does, in fact, have higher fertility rates or simply by the fact, through changes in the occupational structure and reclassification of socio-economic groups, the middle class has grown at the expense of the working class. The current statistical base in the United Kingdom makes it difficult to give a convincing answer to this question – which, in any case, is largely irrelevant to the debate about different levels of participation in higher education.

2.1. Changes in the indices for measuring participation

The traditional complaint – ‘lies, damned lies and statistics’ – has never really been justified. Nevertheless, in recent years the statistical challenges of accurately recording participation rates (and the impact of demography on higher education) have increased – for three main reasons.

First, as a mass system of higher education has developed in the United Kingdom with a significantly more heterogeneous student population and greater diversity in the forms of provision and methods of delivery, it has become more difficult to produce reliable and robust data, not, of course, because statistical standards have declined but because the reality which these statistics attempt to record has become more complex. For example, it is no longer a question of being able to count part-time students as well as full-time students but of being able to cope with a fluid spectrum of study patterns.

Second, population base-lines have become more difficult to establish and interpret, partly because of weaknesses in the methodology of recent censuses (which have led to significant under-reporting, and which cannot be properly compensated for by more sophisticated statistical modelling), partly by the increasing volatility of family and occupational structures (which has made socio-economic, and class, identification more problematical), and partly by the greater turbulence created, for example, by immigration (and emigration).

Third, the publication of statistics has become more politicised with the growth of a political discourse in which ‘targets’ and ‘benchmarks’ are key parts of the vocabulary and the emergence of the so-called ‘audit society’ in which assessment and evaluation have become increasingly prominent activities. Higher education itself, because of its perceived importance in the context of intensified global competitiveness within the ‘knowledge society’, has been caught up in this web of ‘targets’ and ‘audits’ to a much greater extent than in the past.

All three factors have influenced the collection of higher education statistics – whether participation rates or projections of future demand – in the United Kingdom. Two important changes have been made during the past decade which, although primarily dictated by a desire for greater statistical accuracy, have also reflected political convenience.

The first, which has already been mentioned, was the shift following the 2001 census from in the classification of the socio-economic / social class structure of the United Kingdom population – from six ‘social classes’ (ranging from I ‘professional’ to VI ‘semi- and unskilled’: III was subdivided into ‘non-manual’ and ‘manual’ groups) to seven ‘socio-economic groups’. This classification is highly significant for higher education because the degree to which the participation gap is widening or narrowing between different social groups has remained a matter of considerable controversy. Although the new classification arguably better reflected socio-economic realities, the change of classification, of course, has made it more difficult to construct reliable time-series, and, therefore, to assess progress (or the lack of it) towards increasing participation in higher education by the lower social classes / socio-economic groups.

The second and more significant change was the (effective) replacement of the Age Participation Index (API) by the Higher Education Initial Participation Rate (HEIPR). The API was defined as ‘the number of United Kingdom-domiciled young (under the age of twenty-one years) initial entrants to full-time and sandwich courses of higher education in Great Britain, expressed as a proportion of the averaged Great Britain eighteen to nineteen year old population’. The HEIPR is defined as ‘a measure of participation in higher education for the first time on the part of young people, and is constructed by summing the percentages entering higher education for the first time at each age between seventeen and thirty years of age’. As has already been indicated, to be included in the HEIPR an initial entrant has to remain on the programme for at least six months. The HEIPR (like the new socio-economic group classification) better reflects realities. For example, it covers initial entrants up to the age of thirty, and therefore provides all or some of the data previously contained in the Younger Mature Entry Index and the Older Mature Participation Index (both of which were abandoned in 1992). However, once again, it disrupts time series. Moreover the HEIPR (forty-two per cent in 2000-01) is ‘higher’ than the API (thirty-four per cent in the same year). This potentially misleading impression of progress towards widening participation in higher education, of course, was not unwelcome to the government.

There are a number of technical issues arising from the use of both the API and the HEIPR which are beyond the scope of this paper. For example,

there is sometimes confusion between England, England and Wales, Great Britain (England, Wales and Scotland) and the United Kingdom (Great Britain and Northern Ireland); if one is used as a numerator and the other as a denominator the accuracy of the data is compromised. There are also data collection issues which are also beyond the scope of this paper. For example, up to fifteen per cent of entrants to higher education – predominantly local students who are also likely to come from less privileged social groups or ethnic minorities or be older – do not apply through the national University and College Admissions Service (UCAS) and, consequently, are more difficult to record (Ramsden, 2005).

However, some of these apparently technical issues have a wider political resonance. For example, according to the HEIPR-derived Full-time Young Participation by Socio-Economic Class (FYPSEC) measure, which replaced the API by social class measure, participation by higher social classes fell slightly between 2002-03 and 2004-05 (from 45.8 per cent to forty-three per cent) and participation by lower social classes rose marginally from 19.1 per cent to 19.2 per cent (Kelly and Cook, 2007). If the API had been used, this 2.8 per cent reduction in the gap between participation rates would not have been evident. A recent Department for Education and Skills research report concluded: 'Importantly, this work suggests that, instead of a widening social class gap over the 1990s, the gap remained static for the first half of the decade and began to close after 1996'. What made the difference was that the FYPSEC used annual re-calculations of the social class breakdown of the population rather than relying on the decennial snap-shots provided by national censuses, which reinforces the point made at the beginning of this section about the impact of increasingly volatile social class and occupational structures.

Two general methodological issues remain unresolved:

- i) The first is that most of these measures do not adequately cover or exclude part-time students, of whom there are almost a million in the United Kingdom higher education system. In terms of overall participation it is difficult to determine the appropriate denominator; it is difficult enough in the case of younger students as the replacement of the averaged eighteen to nineteen year old population (used to calculate the API) by the sum of the percentages entering higher education from seventeen to thirty (used by the HEIPR)

demonstrates. In terms of participation by social class part-time students also pose a dilemma, should their social class origins (as determined by the occupation of their parent/s) be used or their current socio-economic status (as determined by their own occupation, if they have one)? The inadequate coverage of part-time students is important not simply in its own right, because data coverage is incomplete and participation rates based on that coverage are therefore likely to be inaccurate) but also because (i) part-time students have distinctive characteristics which are important in terms of widening participation in higher education (certainly in terms of age and social class, although less certainly in terms of gender and ethnicity); and (ii) the distinction between full-time and part-time study is becoming increasingly fuzzy in what is now a mass system of higher education, potentially rendering some data classifications unreliable.

- ii) The second issue is that much of the data depends on self-reporting – which leads to two difficulties. The first difficulty is that there are significant gaps in the data. For example, significant numbers of entrants decline to specify their ethnicity – partly perhaps because they regard the request to provide this information as intrusive and are concerned about the uses which might be made of this information; but also partly because in the case of mixed-race individuals their ethnicity is genuinely unclear. The second difficulty is that some of the data may be inaccurate, particularly in some of the most politically sensitive areas such as social class. Occupational structures have become more volatile, and occupational titles more difficult to interpret. Gender roles have also become more fluid, which may have made it more difficult for higher education entrants to define accurately the occupation of their highest-paid parent. Finally, changes in family structures, combined with the increase in the average age even of initial entrants to higher education, and the increasing number (if not proportion) of mature students, may raise similar dilemmas to those raised by part-time students.

These methodological problems, and the preceding discussion of changes in expansion and participation measures, may demonstrate a wider

issue, a growing tension between a (political) appetite for more, and more reliable, data to provide a more secure basis for evidence-based and targets-driven policies on the one hand; and on the other, the intractability of data collection and interpretation in a mass higher education such as the United Kingdom system has become, in which an almost exponential increase in diversity and heterogeneity, and in a society which (if not exactly post-modern) is increasingly fluid in its construction and its categories.

3. Policies on Expansion and Participation

The evolution of higher education policy in the United Kingdom since the 1960s has been largely determined by a complex dialectic between policies designed to expand the system and policies designed to widen participation. At some periods the need for expansion has been emphasised often with the explicit intention of meeting future workforce needs for highly skilled labour, although in the half-knowledge that growth would also promote wider participation. At other periods priorities have been reversed with the emphasis being placed on widening participation in the interests of social justice (and also economic efficiency, to utilise fully the available pool of talent), although with a grudging acknowledgement that expansion would be necessary to achieve this objective. But these two policy emphases – expansion and participation – have never been clearly enough disaggregated to operate independently.

Since the victory of the Labour Party in the General Election of 1997 greater emphasis has been placed on policies to widen participation in higher education by attracting students from non-standard backgrounds, in other words, students from lower social classes, ethnic minority students, older students and (less deliberately) part-time students. Labour has also set a challenging growth target, initially to achieve fifty per cent participation for thirty-year-olds and younger by 2010, but its emphasis on expansion has been more tentative than its primary commitment to widening participation.

Under the previous Conservative Governments from 1979 to 1997 widening participation had not been such an explicit policy objective, although, in practice, the expansion of higher education (for reasons discussed earlier in this paper) had had the indirect effect of attracting many

more students from a much more diverse range of social backgrounds. As has already been indicated the single most rapid period of growth in United Kingdom higher education occurred between 1986 and 1995. So Labour's victory in 1997 represented a reversion to priorities (at any rate, in terms of rhetoric) which had prevailed during an earlier period of Labour rule from 1964 to 1979 (with a brief interlude of Conservative Government between 1970 and 1974 – when, incidentally, Margaret Thatcher held her first Cabinet post, as Secretary of State for Education).

The reasons for this difference of emphasis cannot reasonably be attributed to demographic factors. Labour's commitment to widening participation, in the 1960s and 1970s and again after 1997, coincided with periods when the number of young adults was increasing at a significant rate (which, arguably, should have made it more urgent to expand the system to meet growing demand). Conversely, conservative governments presided over periods of rapid expansion, even though the demographic pressures were not always so great. Better explanations are (i) that Conservatives have tended to emphasise economic efficiency reasons for increasing the supply of higher education while Labour has emphasised social and cultural reasons for widening access to higher education (although more recently Labour has also placed greater weight on workforce arguments); and (ii) that instinctively Conservatives are happier to be seen to be responding to market pressures for more higher education, while Labour is more comfortable with policies which can be characterised (stigmatised?) as 'social engineering'.

Since 1997 four sets of policies have been particularly relevant to expansion and participation:

3.1. The "fifty per cent target"

In Labour's manifesto for the 2001 General Election the Party made a commitment to enrolling fifty per cent of eighteen to thirty year olds in some form of higher education by 2010 – in effect to raise the HEIPR from the current forty per cent (in 2000-2001) to fifty per cent. This was the first time in living memory that a political party had included a higher education commitment in its election manifesto – and, as such, the "fifty per-cent target" was a high-profile commitment. It was also a qualified commitment

in the sense that it was a pledge to enrol fifty per cent in 'some form' of higher education, but this attracted less comment at the time. Subsequently, as it has become clear that it would be difficult if not impossible to hit the "fifty per-cent target" by 2010, the commitment has been watered down. In its latest version, as a public service agreement target for the Department for Education and Skills, it reads: 'By 2010, increase participation towards 50% of those aged eighteen to thirty and also make significant year on year towards fair access and bear down on rates of non-completion', thus explicitly linking expansion with access and also including an additional element related, in essence, to academic quality.

The "fifty per-cent target", now in this attenuated form, has been influenced by demographic factors in two senses. The first, less important although direct, is that, as has already been indicated, the number of eighteen year olds will continue to increase until 2010, only beginning to decline after that date. This means that there is some – modest – pressure to meet increasing demand for places in higher education. The second, more significant although indirect, sense is that this target was originally based not on likely demand for places from potential students but on projections of future workforce requirements for graduate-level jobs. These projections, originally produced by the Institute of Employment Studies based at the University of Sussex, indicated that, in order to satisfy the increasing demand for graduate-level jobs, it would be necessary to increase the supply of places in higher education, which, in turn, would require a rise in participation to fifty per cent of young adults. In other words the changing occupational structure of the United Kingdom population has generated a demand for higher levels of participation in higher education.

3.2. Managing expansion

The second set of policies is a series of decisions taken by the Department for Education and Skills (now subdivided into a Department of Children, Schools and Families and a Department of Innovation, Universities and Skills) and, in particular, by the Higher Education Funding Council for England (and by their Scottish and Welsh equivalents) about how growth in student numbers should be managed and funded. Here a significant shift has taken place over the past decade. Initially student growth was managed

by awarding Additional Student Numbers (ASNs), funded at the same level as existing students, to higher education institutions which wished to expand and met a number of criteria, for example, an ability to demonstrate the appropriate quality and a capacity to recruit students. The number of ASNs available was fixed with the agreement of the DfES because the additional public expenditure required to fund ASNs was rationed and had to be negotiated with the Treasury. The emphasis, therefore, was on enabling successful institutions to grow, thus responding to market demands, but only with the permission of the Funding Council, thus maintaining a degree of central control by the DfES / HEFCE on the overall level of growth and by HEFCE on its distribution among universities and colleges. These policies were largely oriented towards increasing volume, *i.e.*, increasing the supply of places in higher education rather than ensuring that these additional places were filled by students from social groups that were currently under-represented. Meeting the “fifty per-cent target” was an overriding aim.

More recently greater emphasis has been placed on targeting growth – both on these under-represented groups (‘widening participation’ in the policy jargon of United Kingdom higher education) and on those subjects and courses which appeared to be most relevant to meeting future workforce requirements (the ‘skills agenda’ in the same jargon). Successive ministers in the DfES have stressed the need to widen not simply to increase participation; in other words, to open up higher education to new student groups and study patterns rather than to provide what they somewhat pejoratively labelled ‘more of the same’, higher levels of middle-class participation without any significant narrowing of the gap between middle-class and working-class participation. A range of policies has been developed by the DfES and HEFCE directly to address widening participation, which will be discussed next.

But even greater emphasis has been placed on targeting growth in the context of future workforce requirements – in effect, the resurrection of manpower planning. For example, separate allocations of ASNs are now made for Foundation Degrees (two-year vocationally-oriented courses introduced in 1998) and for all other courses. More recently the DfES has told HEFCE that in future half of all additional places should provide for so-called ‘employer engagement’, and, if possible, should be co-funded by

employers. This 'employer engagement', and the wider skills agendas, have been heavily influenced by demographic considerations, albeit indirectly. Both are driven by projections of future workforce requirements, which in turn reflect the changing occupational structure. However, these projections have been – to some degree – politicised because they incorporate assumptions about the relative weight that should be attached to different components of the future workforce – notably, that meeting specific demands for higher-technical and intermediate skills is a more urgent priority than satisfying the general demand for graduate-level skills.

3.3. *Funding diversity*

The third group of policies are those that directly address the need to narrow the gap between participation rates among different social groups – 'widening participation' – through the method for allocating funding to higher education institutions. These policies have been driven by two different, but overlapping, motives. The first has been to try to ensure that the funding method is more 'neutral' – in other words, that it does not discriminate against non-standard students, *i.e.*, those who are not middle-class young adults studying full-time on fairly traditional academic and professional programmes. The second motive has been to intervene more actively to promote participation in higher education by disadvantaged groups. More attention has been focused on the second motive but the first has probably been more potent in terms of producing change, if only because it has been supported by a greater consensus within the higher education (and political) systems.

Policies designed to make the funding method more 'neutral' are of two main types. The first aims to reflect more accurately the cost of different forms of provision. For example, Foundation Degrees are currently given a ten-per-cent funding premium by HEFCE which is justified because of the higher costs associated with the required transactions with employers. The funding ratio between full and part-time courses has also been adjusted, to the advantage of the latter; once again the intention is not to promote part-time higher education as such but to reflect the costs associated with the greater complexity of that provision. The second type aims to ensure that all forms of student achievement are funded (reasonably) equally, and that

there are no hidden (or even perverse?) incentives for institutions to discriminate against students who follow non-standard study patterns. For example, currently universities receive funding for students (typically full-time) who complete a full academic year but may fail all their examinations, while they do not receive funding for students (generally part-time) who complete only part of the year but successfully pass the examinations relating to the modules they have studied. The Funding Council is proposing to fund these 'partial completions' – which are concentrated in the so-called 'new' universities (the former polytechnics) and tend to lack the support systems available to young full-time middle-class students and, consequently, are more likely to drop out part-way through the year.

Policies designed as more active interventions to promote the interests of non-standard students have been more controversial; like all forms of positive discrimination/affirmative action they run the risk of being labelled 'social engineering' and are resented by those groups that fear their privileged access to higher education will be eroded. The most substantial such intervention in the English higher education system is the widening participation premium paid by HEFCE to institutions for students who meet specified criteria – for example, living in socially disadvantaged areas. This premium is sometimes justified simply as recognition of the higher costs associated with teaching such students who may not be so well prepared to study in higher education or suffer other disabilities. However, given its substantial scale, it is perhaps better characterised as an active intervention to promote widening participation rather than simply as just another attempt to 'level the playing field'. Another example has been the pressure on higher education institutions to target the bursaries they offer on students from (broadly) 'widening participation' backgrounds. This pressure has been applied by the Office for Fair Access (OFFA), which was established two years ago to try to ensure that students from poorer homes were not discouraged by higher tuition fees (currently now capped at £3,000 per year). Institutions must have bursary scheme approved by OFFA before they are allowed to charge these higher fees.

But, whatever the motive, the effect of both kinds of policies has been to encourage participation by currently under-represented groups, indirectly in the case of the first (more accurate reflection of real costs associated with different forms of provision / types of students) and more directly in the

second (active advocacy of widening participation). However, it is less clear that their combined effect has led to an overall increase in participation. It is possible that institutions have simply responded to these funding incentives by recruiting more 'widening participation' students and rather fewer 'standard' students – with the result that potentially more able but socially (and educationally?) deprived students have displaced less able (and marginally motivated?) middle-class students. Although this would represent an undoubted gain in terms of social justice – and, arguably, academic quality, overall participation may have been unaffected. Certainly the available data suggests that the expansion of higher education since 2000 can be largely accounted for by the increase in the number of young adults and the rise in the number of qualified school and college leavers.

3.4. Widening participation

The final set of policies is the extension of the second type of funding changes, those which have been designed explicitly to favour the recruitment of 'widening participation' students. But they operate on a much wider canvass – and, therefore, have a greater potential to increase overall participation. Perhaps the most prominent has been a sustained effort to raise aspiration levels (as well as achievement rates) among young people who for family and cultural reasons may be disinclined to apply to higher education. This effort has been largely channelled through 'Aimhigher', a national programme of projects and initiatives (for example, pre-university summer schools, pairing arrangements between universities and secondary schools in socially deprived areas and mentoring schemes). Arguably 'Aimhigher', and earlier programmes, are based on relatively conservative assumptions – that higher education itself does not need to be radically transformed to meet the needs of new kinds of students but that its social reach can be extended by providing better information, and organising other kinds of consciousness-raising and familiarisation programmes.

However, there is a more radical alternative – offered by members of the wider 'access movement', a coalition of widening participation advocates, community activists and adult educators. The focus of this movement has been on opening up new pathways into higher education – but at the same

time encouraging the radical transformation of higher education (in terms of its organisational structures, its social practices and even its intellectual traditions). A new national programme initiated by HEFCE – the establishment of ‘Lifelong Learning Networks’ – has the potential to realise some of these more radical ambitions. These networks bring together universities, further education colleges, schools, local government agencies and community organisations. Their intended aim is to make it easier for students to progress – maybe from a local college, through a regional university to a research university. Their unintended consequences could be to kick-start the evolution of a mass higher education system in the United Kingdom into a genuinely lifelong learning system, which would not only help to meet some of the objectives of the Government’s skills agenda but also realise the more utopian ambitions of the ‘access movement’.

4. Future Demand for Higher Education in the United Kingdom

Substantial work has been undertaken in the United Kingdom that attempts to predict future demand for higher education – and so the future scale and scope of the higher education system (HEPI, 2003a, 2003b, 2004a, 2004b, 2005, 2006, 2007). Much of this work has been based on demography, in particular the number of eighteen year olds up to 2020 (adjusted by region, gender and social class), but also on projections of the number of qualified school leavers and estimates of the ability of the United Kingdom higher education to attract students from other countries. Most of these studies are rigorous and precise. Rather less work has been undertaken on future demand for graduates, based both on demography and also predicted changes in the occupational structure. Most of these studies are empirical and quantitative; very few are more speculative / imaginative or qualitative. They tend to focus on projections of demand for scientists and engineers rather than on the potentially transforming impact of the ‘knowledge society’. Very little work has been undertaken on the subtler influence of wider social and cultural change on demand for higher education (although it is evident that shifting social – and, in particular, gender – identities had a decisive impact on demand in the United Kingdom in the past); nor of the influence of the transformation of higher education itself on demand – at

any rate directly; some general studies of the future of higher education indirectly touch on these issues and themes.

Building projections of future student numbers consists of several stages:

- The first stage is the overall number of eighteen and nineteen year olds in the United Kingdom. In the current year the total is 1.28 million which will rise to 1.32 million in 2010 and then decline sharply – to 1.22 million in 2015 – to 1.15 million in 2020. In other words there will be a decline from peak to trough of 7.6 per cent, a significant but not substantial decline (and one which in the past has been more than compensated for by other factors);
- The second stage is to make assumptions about the effects of migration – both permanent (or, at any rate, long-term migration) and temporary migration, largely or exclusively for the purposes of studying in United Kingdom schools or universities. These two forms of migration have very different dynamics; the former add to (or subtracts from) the base United Kingdom population and the impact of this on demand for higher education depends on the propensity to participate among different migrant groups (which varies substantially), while the latter represents a direct addition to demand. Migration, and recruitment of students, from the rest of the European Union – especially its most recent members – could be a significant factor, although demographic decline is a pan-EU phenomenon;
- The third stage is to break down these first two elements – the total number in the age group and any additions / subtractions due to migration – by regions. There are significant variations in the number of eighteen and nineteen-year-olds in different parts of the United Kingdom, which are linked to the social class and age structures of the United Kingdom's constituent countries and regions. For example, Scotland has relatively fewer young people than the south east of England. The effects of migration are even more pronounced because immigrants tend to cluster in particular parts of the United Kingdom (notably London). The combined effect is to produce substantial variation. For example, the number of eighteen and nineteen-year-olds in London will increase from 174,000 now to

180,000 in 2010 – and then go on increasing to more than 190,000 in 2020;

- The fourth stage is to try to measure the social class effect, which has been discussed earlier. The number of eighteen and nineteen-year-olds from middle-class homes, still the predominant source of young full-time higher education entrants, will not decline. The number of births in the higher socio-economic groups increased (by three per cent for the “highest skilled” group and twenty per cent for the “second-highest skilled” group between 1986, *i.e.*, eighteen-year-olds in 2004, and 2001, eighteen-year-olds in 2019, while the number of births in lower socio-economic groups plunged – by thirty-seven per cent in the case of semi and unskilled workers. So, on the face of it, higher education is largely protected from the impact of demographic decline;
- The fifth stage is to factor in trends in educational achievement in secondary and further education. The DfES calculates that eighty-four per cent of those with two or more A-levels go on to higher education, compared with only forty-six per cent of those with the equivalent vocational qualifications (which are equally valid for entry to higher education). Overall just over a third of seventeen-year-olds in England and Wales achieve two A-levels. The evidence suggests that social-class differences in participation in higher education are largely mediated through differences in school achievement, in other words, young people from working-class homes who have the same levels of achievement are just as likely to participate in higher education as young people from middle-class homes. The key difference is the gap between A-level (and other academic) qualifications and vocational qualifications. Clearly if young people with the latter increase their propensity to participate in higher education, this would both increase overall numbers and reduce the social class gap;
- The sixth stage is to take account of the significant gender differences in school achievement. Almost forty per cent of girls in England take A-levels compared to less than thirty per cent of boys. However this effect is mitigated by the fact that boys with the equivalent

qualifications are marginally more likely to go on to higher education than girls;

- The final stage is to consider future demand from mature and part-time students. The recent Leitch report on skills suggested that existing policies would have the effect of increasing the proportion of nineteen to sixty-five-year-olds – the working population – educated to level 4 (higher education and its equivalents) from twenty-nine per cent to forty per cent by 2020. But the report also suggested that the Government should set a target of forty-five per cent. Any likely increase in the number of young full-time students in higher education would not be sufficient to meet this target. The implication, therefore, is that there will need to be a substantial increase in the proportion of mature and part-time students, for which there is little current evidence.

The most authoritative projection of the future size of the United Kingdom higher education system is best described as 'steady state': a very small reduction in 10,000 full-time-equivalent students (out of a total of 1.8 million FTEs) by 2020, although a slightly larger decline of maybe 50,000 from the peak in 2010, but a reduction that could easily be reversed by other factors, notably any improvement in school achievement or a narrowing of the social class participation gap. The evidence of the growth, and development, of United Kingdom higher education since 1963 suggest that this is probably a conservative assumption. During the past forty years the factors which have had an impact on demand for higher education – known, unknown and unknowable – have, almost without exception, had a positive effect. Given the socio-economic and culture texture of advanced societies there is no reason to expect the next forty years to be different in this respect – barring global catastrophe (economic, political, military or environmental).

In broad terms this discussion of the demographic factors likely to shape the development of United Kingdom higher education suggests two possible futures:

- i) The first possible future is based on the assumption that these authoritative projections of demand will prove to be correct, and the

United Kingdom higher education system will move into 'steady state'. Such an outcome would probably compromise the dynamism of the system because change has been largely incremental. The expansion of higher education, both quantitatively in terms of overall student numbers and qualitatively in terms of the evolution of new patterns of higher education, has created head-room for experimentation. It would be much more difficult to continue to create this head-room in a 'steady state' system. So one possible scenario is of a system that is not only characterised by slow or no growth but is also academically (and socially and culturally) impoverished. The current mass higher education system in the United Kingdom could collapse back – or, more probably, fragment – into an elite component and a much more tightly focused vocational component;

- ii) The second possible future is based on the assumption that the system will continue to grow; partly as a result of demographic factors, as higher education moves further away from its current dependence on young adults, and partly as a result of the more fundamental changes in the articulation between the higher education system (or, maybe, knowledge system) and a new kind of society (which is post-industrial and knowledge-intensive but also post-modern and socially febrile and culturally diverse and dynamic). In this second scenario the impact of the changing profile of the United Kingdom population on the size and character of the higher education system would be much reduced. Instead, rather as (traditional) universities, higher technical colleges and vocational and professional institutions coalesced to form the modern higher education systems familiar today, so these higher education systems in their turn may be transformed, partly through their own internal dynamic but partly through the accretion of other roles, into lifelong learning systems, in which the boundaries between academic learning, indeed any formal learning, and broader forms of social and cultural engagement first become fuzzy and permeable and eventually may disappear.

References

- CLARK, T. 2006. *OECD Thematic Review of Tertiary Education - Country Report: United Kingdom*. (Research Report, RR767).
<http://www.dfes.gov.uk/research/data/uploadfiles/RR767.pdf> (Accessed 10 March 2008)
- COMMITTEE ON HIGHER EDUCATION, 1963. *Higher Education Report of the Committee appointed by the Prime Minister under the Chairmanship of Lord Robbins 1961 – 1963*. [Robbins Report]. London: Her Majesty's Stationery Office.
- THE DEARING REPORT, UK. 1997.
<http://www3.hi.is> (Accessed on 10 April 2007)
- HIGHER EDUCATION POLICY INSTITUTE (UNITED KINGDOM). 2003a. *Higher Education Supply and Demand to 2010*. Oxford: HEPI.
<http://www.hepi.ac.uk> (Accessed 10 March 2008)
- , 2003b. *Demand for Higher Education to 2010: Some Political and Policy Implications*. Oxford: HEPI.
<http://www.hepi.ac.uk> (Accessed 10 March 2008)
- , 2004a. *Projecting Demand for United Kingdom Higher Education from the Accession Countries*. Oxford: HEPI.
<http://www.hepi.ac.uk> (Accessed 10 March 2008)
- , 2004b. *Higher Education Supply and Demand to 2010: an Update*. Oxford: HEPI.
<http://www.hepi.ac.uk> (Accessed 10 March 2008)
- , 2005. *Demand for Higher Education to 2015-16*. Oxford: HEPI.
<http://www.hepi.ac.uk> (Accessed 10 March 2008)
- , 2006. *Demand for Higher Education to 2020*. Oxford: HEPI.
<http://www.hepi.ac.uk> (Accessed 10 March 2008)
- , 2006. *Higher Education Statistics for the United Kingdom – 2004-05*. Cheltenham: HESA.
- , 2007. *Demand for Higher Education to 2020 and Beyond*. Oxford: HEPI.
<http://www.hepi.ac.uk> (Accessed 10 March 2008)
- HIGHER EDUCATION STATISTICS AGENCY. (HESA). 2007. *Students in Higher Education Institutions –2006-6*. Cheltenham: HESA.
- KELLY, K. and COOK, S. 2007. *Full-time Young Participation by Socio-Economic Class: A New Widening Participation Measure in Higher Education*. (Research Report RR806)
<http://www.dfes.gov.uk/rsgateway/> (Accessed 10 March 2007)

- NATIONAL COMMISSION OF INQUIRY INTO HIGHER EDUCATION (UNITED KINGDOM). 1997. *Higher Education in the Learning Society*. (Dearing Report). London: Stationery Office.
- OFFICE FOR NATIONAL STATISTICS (UNITED KINGDOM). (2006). *Education and Training Statistics for the United Kingdom: 2006 Edition*. <http://www.statistics.gov.uk/default.asp/> (Accessed March 2007)
- RAMSDEN, B. 2005. *Participation in Higher Education: A Study to Determine Whether the Higher Education Initial Participation Rate Should be Disaggregated*. (Research Report RR676). <http://www.dfes.gov.uk/rsgateway/> (Accessed 10 March 2008)
- THE ROBBINS REPORT, UK. 1963. <http://www.leeds.ac.uk/bei/index.html>