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**Expanding Graduate Employment and
Mobilizing Social Demand for Higher Education:
Recent Developments and Policy Debates in Germany**

1 German higher education in the context of changing employment

In most societies higher education fulfils different missions and functions, including at least the following:

- the formation of human capital primarily through the impartation of knowledge-based competencies and social skills, including aspects of personality development,
- the production of new knowledge through research and development, or the maintenance of the available knowledge stock,
- the transfer and dissemination of knowledge (e.g. by continuing higher education or particular transfer institutions),
- a critical mission in so far as the university is also a reflexive social and cultural institution and a discursive public location.

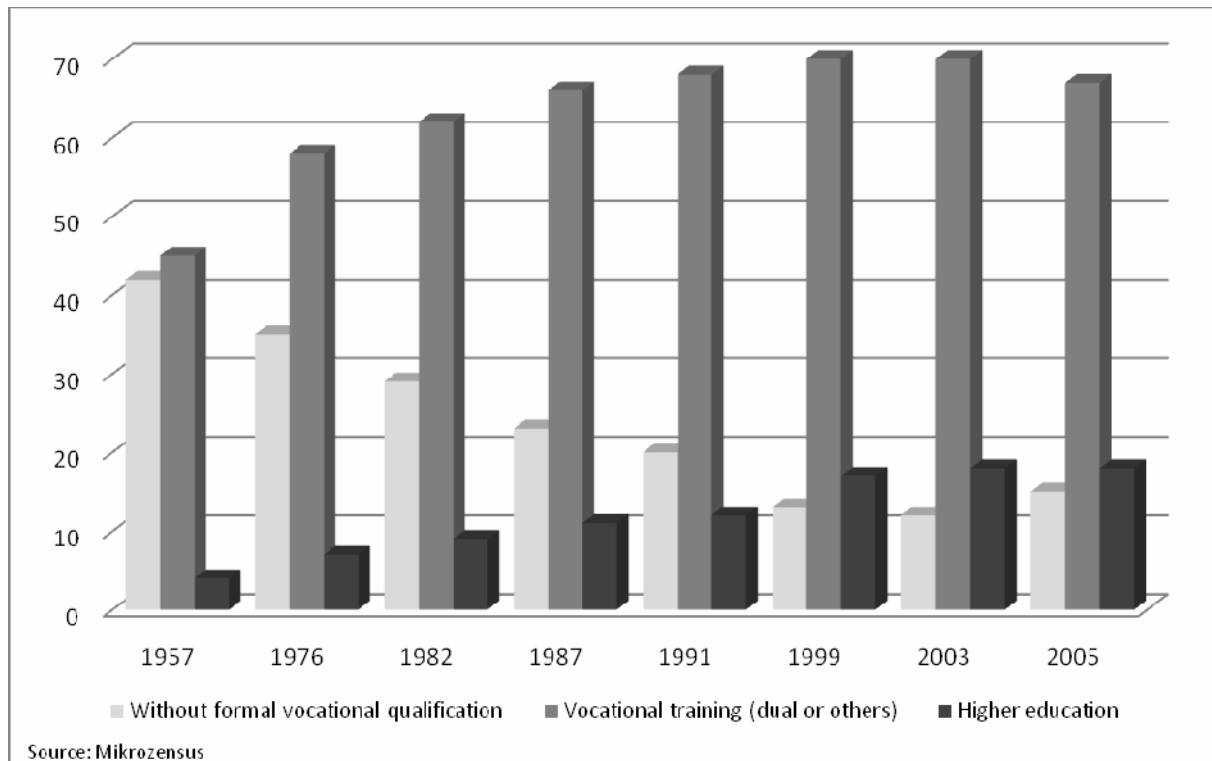
Historically seen, higher education has increasingly become not only a very dynamic instance of knowledge creation but also a driving force of the economic development in the rising knowledge-based society. As in other developed countries, the economy, employment and labor market in Germany have been transformed during the last decades from an industrial structure to a post-industrial service-based economy. As the structure of employment or the gross domestic product show, the tertiary sector has become the most important area of the national economy in the meantime. In Germany, the proportion of the service sector in the working population increased from 43 % (in 1970) to 69 % in 2006. Its proportion of the gross domestic product grew from 52 % (1970) also to 69 % in 2004 (Klieme et al., 2008, p 223, web-appendix A2-7web).

This continuous change has been accompanied by a shift in the internal structure of the service sector in favour of its secondary, human capital intensive segment. In particular, the business-oriented services, the information-, communication- and education-related sectors

and the highly qualified parts of personal services (e.g. in the health sector) have become the leading segments within the tertiary sector. That means it has turned from cognitively relatively simple services to more complex requirements – in professional fields such as education and research, information and communication, health, consulting and so on, to professions based on theoretical knowledge, higher (or at least an advanced level of) education or human capital. These structural changes have had a clear impact on the qualification structure of the national workforce – in Germany (Figure 1) as well as in other countries.

- ▶ The share of working people with a low level of or even without any formal vocational training has decreased by more than half during the last five decades.
- ▶ The proportion with vocational training (that means a kind of apprenticeship combined with attendance at a vocational school) or a comparable qualification (e.g. from a vocational full-time school) has increased by more than 20 percentage points,
- ▶ and the proportion of those with a degree from higher education has already more than quadrupled – from 4 to 18 %. Part of this increase, in particular between 1957 and 1976, is due to the establishment of *Fachhochschulen* as the secondary institutional pillar of German higher education.

Figure 1: Change in the qualification structure of the working population in Germany, 1957-2005



Ulrich Teichler (1991) describes this notable upgrading in the qualification structure as the trend “towards a highly qualified society”. Graduates are the specific dynamic force and the actual winner of the rising knowledge society, although, as in the past, there will be no ideal balance between education and employment. Nevertheless, the notion is widespread in the German population that there should be a balanced relation not only between the supply of graduates leaving higher education institutions and the demand of the labour market and the employment system but also between the vertical and horizontal structures of qualifications and those of employment.

However, according to the available evidence, graduate employment has changed rapidly as a part of the division of work in general and of the organization of professions in particular. There is not any clear dividing line between graduate and non-graduate employment. The number of jobs necessitating a higher education degree has grown massively during the last decades. But parallel to this process the links between qualification and allocation of occupational roles have become more flexible and uncertain. As a consequence, a university degree does not automatically guarantee access to a privileged occupational position with a high social status. Historically seen, graduate employment has primarily been a matter for the

public sector in Germany because of the predominance of the state as the main employer of graduates and for professional careers. From a long-term perspective the traditionally very high share of graduates employed in the public sector has fallen even though about 40 % of graduates are still occupied in public institutions (five years after graduation: that means without those graduates who have to fulfil their training through a second phase in state institutions). However, it is necessary to study carefully the impact of the expansion of higher education on the employment system in relation to the social and economic change in the German society.

As one of the consequences of this structural change, the academic and political discourse about the expansion of higher education and graduate employment has also changed radically during the last years. In particular in the 1980s and the early 1990s, former waves of expansion of participation in higher education were often criticized because of their negative implications for the employment of graduates. Expansion was thought to lead to an increasing mismatch between higher education and employment, resulting in an “overeducated” or “overqualified” society – with a surplus of an academically qualified workforce on the one hand and a lack of workers and craftsmen on the other hand. This surplus should have led to a wide spread of graduate unemployment and, even in the case of having a job, to some phenomena of inadequate working positions.

However, empirically seen, this criticism was not in accordance with the reality of graduate employment in Germany. The proportion of unemployed graduates, related to all graduates (currently 4 %), is much lower than the average rate of unemployment (about 9 % now) (Reinberg/Hummel, 2007). Evidence also shows that the level of inadequate employment – measured by such indicators as tasks, vertical position and relation to the subject studied, income etc. – is much lower than in all other qualification groups. Obviously, a high correlation exists between the degree of qualification and employment indicators. In other words, the labour market and the employment system reward the higher qualification.

In the meantime, in most countries it has been recognized that not only higher education in general but also (and primarily) the supply of a highly qualified workforce is an inevitable prerequisite for economic welfare and, moreover, also for cultural development and social integration. Despite the fact that a certain amount of scepticism about widening of participation has remained, it has been widely accepted in the meantime that expansion of

higher education is the other side of this coin, of the development of a knowledge-based economy.

In Germany, recent projections about the future demand for qualifications show that the need for an academically qualified workforce will increase steadily over the next decades (Bonin et al., 2007; Biersack et al., 2008). The secular trend towards an upgrading in the employment system will continue – because of different reasons:

- firstly, the need to replace the rising number of retiring graduates from the baby-boomer generations;
- secondly, the growing additional demand in view of the structural change;
- and thirdly, the foreseeable massive demographic change leading to a decline in the supply of graduates.

Therefore, a certain consensus has been achieved that the quantitative output of the higher education institutions has to be stepped up considerably – and, as a pre-condition for this, the number and proportion of new students, too. E.g. the Science Council, a very influential consulting institution in German higher education policy, recommended to increase

- ▶ the proportion of graduates, related to the age group, to 35 %, which is a very ambitious objective,
 - ▶ the proportion of new entrants, related to the age group, to 40 %,
 - ▶ and the proportion of school leavers with a study entitlement to 50 %
- (Wissenschaftsrat, 2006).

In particular, the objective ‘40 percent for new entrants’ has become politically prominent in German educational policy. In 2008, the so-called *Bildungsgipfel*, a meeting of ministers of education of the 16 German states together with the federal minister, has confirmed this quantitative goal. Of course, this is only a decision about a medium-term planning target, there is not any precise empirical or economic justification for this particular value or for any other. Furthermore, the actual concern does not refer to the proportion of new entrants which the public debate focuses on but to that of graduates. But these targets are supported by international benchmarks; they define an appropriate level and a general goal to characterize the direction of development.

Figure 2: Proportion of graduates (ISCED 5 A) in different age-cohorts of the population in selected OECD-countries (2006)

	Age-cohort			
	25-34	35-44	45-54	55-64
Australia	29	24	23	18
Canada	29	26	21	19
Finland	29	20	16	13
France	24	15	12	11
Germany	15	16	15	14
Italy	17	13	11	8
Japan	30	25	24	14
Netherlands	34	28	28	23
Spain	26	21	17	12
Sweden	31	21	19	17
United Kingdom	29	21	20	16
United States	35	36	34	33
OECD average	25	20	17	14
Source: OECD data base				

To illustrate the background, it may be worthwhile to contrast the proportion of graduates in Germany (as a part of the population) to that in other economically comparable countries. Based on OECD data, differentiated for several age groups, two results become evident with respect to Germany (Figure 2).

- For higher education degrees at ISCED level 5 A the vertical comparison shows that the proportion of graduates at this level in Germany is one of the lowest among OECD countries – and this in all age groups. Furthermore, the proportion in the youngest cohort (25 – 34) is far away from the aspired value of 35 %.
- The horizontal comparison shows that the dynamic of growth is very modest in Germany, if there is any dynamic at all. In nearly all other countries the rate of growth is partly considerably higher than in Germany. This is true even if the proportion in the youngest cohort still increases a little bit, because there are students in this age-group, who have not finished studies up to this point in time.

Essentially, the situation is the same comparing the data for graduates together for level 5 A and 5 B. It is important to consider that these differences mirror not only different levels of

participation but also national differences in the qualification requirements of professions and in the assignment of programs to post-secondary or tertiary institutions. But it is also true that such differences in the proportion of graduates cannot be explained completely through organizational issues, particularly not at ISCED level 5 A.

Because graduates have gained a key position as the central stakeholders of the rising knowledge society it could not be argued, as it is sometimes done in Germany, that the deficit of graduates is compensated by the very well established system of vocational training in Germany – the so-called dual system, which is the most advanced training system of the secondary (industrial) sector and parts of the tertiary (service) sector, but not of the very dynamic human capital intensive parts of the service sector.

2 Increasing the number and proportion of graduates:

Main problems in inclusion and effectiveness of German higher education

There are basically three ways to raise the national or the institutional output of graduates in accordance with the national policy targets:

- ▶ The first way focuses on the transition from secondary school to higher education and includes opportunities to increase the general level of participation in higher education.
- ▶ The second way focuses on the social composition of the student body and embraces concepts to widen participation by opening up higher education particularly to those social groups who have so far been under-represented – e.g. non-traditional students, young people with a working class family background or migrants.
- ▶ The third approach focuses on the process of studying, that means the completion or success rate – in other words: to ensure a better balance between input and output. Such fields of action can be the organization of studies, provision of counseling, financial support and others.

In this context four main problems in the quantitative development and participation in German higher education can be identified.

- (1) The first main problem is a lack of mobilization at the stage of access to higher education. Until 2007, enrolment stagnated or even decreased (in absolute numbers as

well as in the proportion related to the age group). The latter shows that this stagnation has not been caused by demographic but participation factors. Despite the fact that enrolment grew in 2008 participation is far away from the political targets.

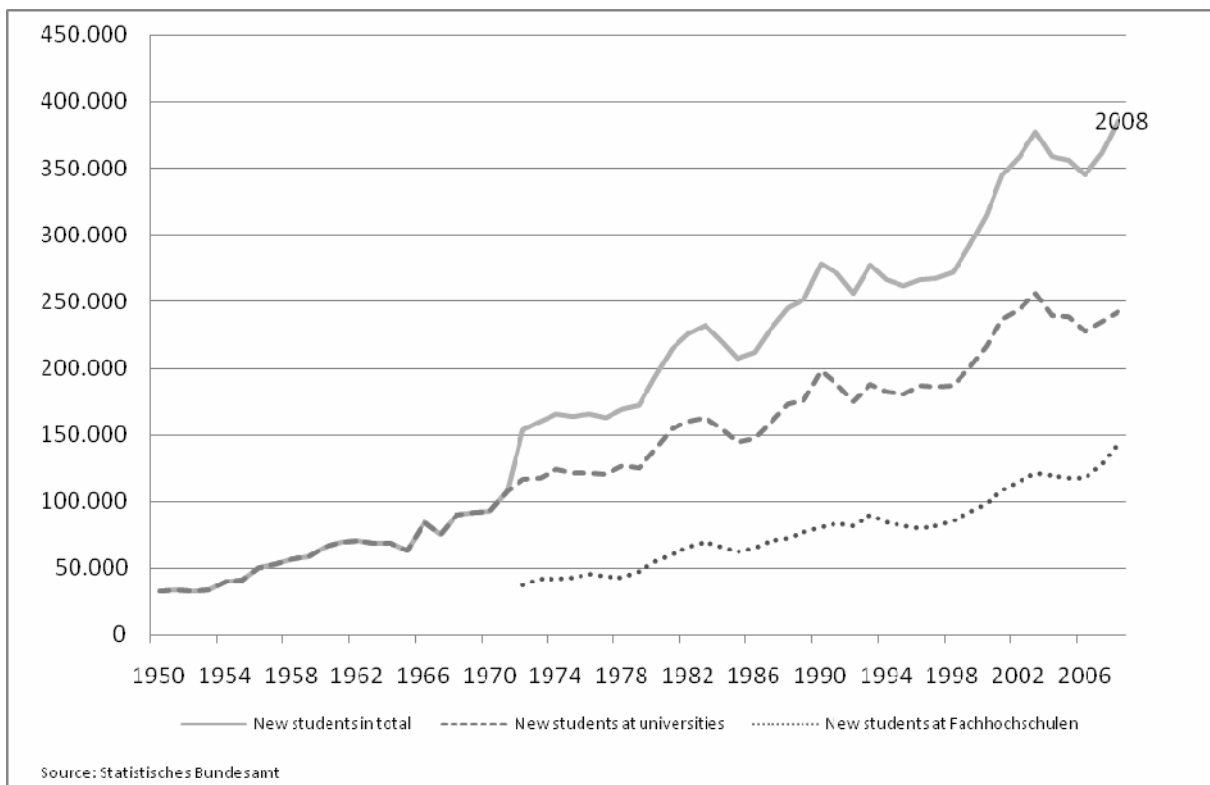
- (2) Secondly, this flattening out has different causes.
- The study willingness among young people, who finished secondary school with a study entitlement, has remained on a low level for more than one decade.
 - Furthermore, more and more courses of studies have been limited by a *numerus clausus* because of institutional capacity problems. Such restrictions in admission have been reinforced by the Bologna process because more reformed than traditional courses have introduced a *numerus clausus*.
- (3) Thirdly, there is a considerable lack of permeability in German higher education primarily concerning the participation of students with a lower social or educational family background and of non-traditional students.
- (4) Finally, there is obviously a lack of efficiency during studies. The drop-out rates are too high – or *vice versa*: the success rate is too low.

2.1 The development of enrolment

As in many other countries, one of the most important changes in German higher education has been the massification of participation. Since the 1950s there has been a relatively continuous increase in social demand for higher education (Figure 3) – with some but only temporary interruptions. This is true for the absolute number of students as well as for the proportion related to the age group. Until the early 1990s, this rise was partly due to the demographic growth of the younger generations – the baby boomer generations –, but the most important reason was the increasing relative participation in the grammar school track of the school system and at the stage of access to higher education which is reflected in the proportion of students. However, it is necessary to distinguish between the short cycles and the long-term trend in the development of enrolment.

The main reasons behind the long-term incessant growth of the participation quota include primarily the fundamental changes in the educational awareness, decisions and behaviour of the population, which reflect the performance and qualification based allocation mechanisms in meritocratic societies (Wolter, 1995), in particular in the sequence of generations. These patterns compel the younger generation to increasingly submit to these distribution criteria. Each generation must at least attain or even exceed the standard of the previous one. The resulting stronger competition on the education and labour market reinforces the qualification pressure. This pressure creates its own dynamic, which causes further expansion. Therefore, competition in the field of education, closely linked with life chances, has its own logic of growth. But what is correct in a long-term perspective can, of course, be modified by short- or medium-term breaks.

Figure 3: Number of new students in Germany, 1950-2008¹⁾

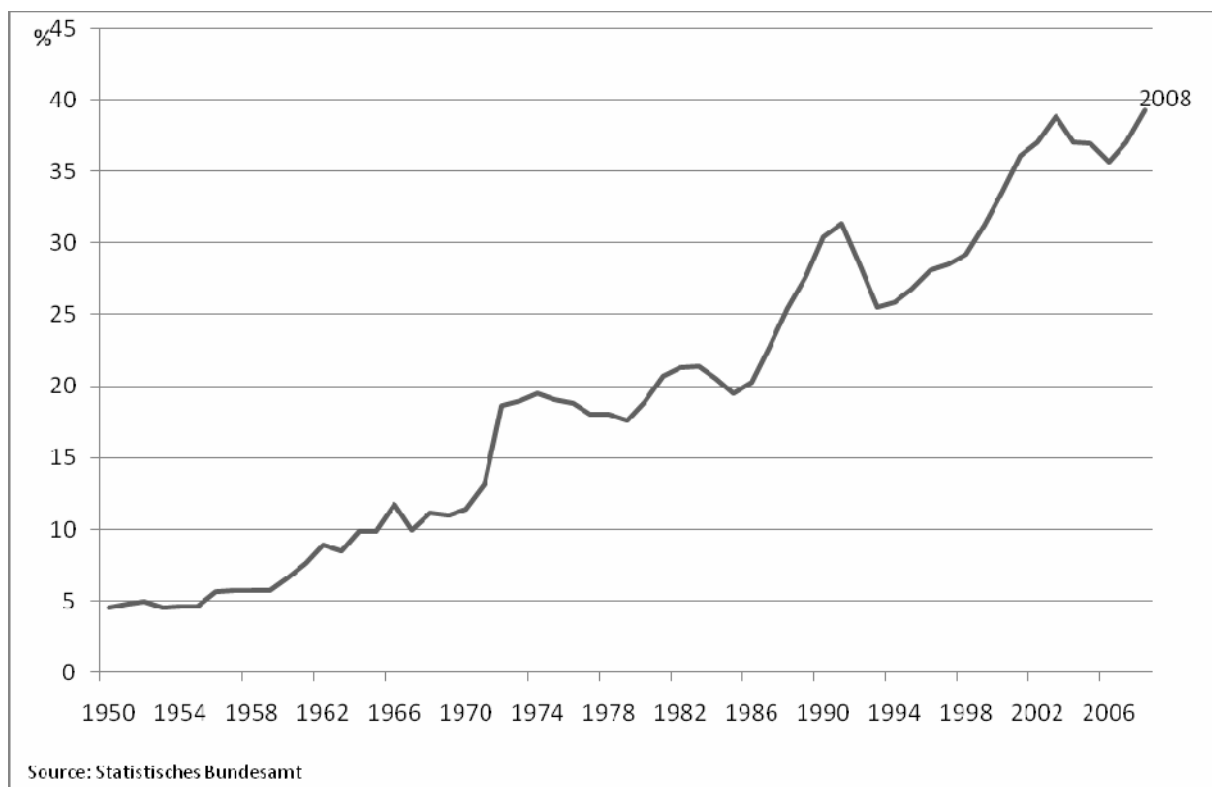


¹⁾ Until 1992 only West-Germany

Despite the long-term growth of student demand between the early 1950s and the beginning of this decade, participation in German higher education is lower than in most other OECD countries. Furthermore, from 2003 to 2007 the number of new students and also the rate decreased or stagnated below the level which was achieved in 2003 before the number of new

students reached a peak in 2008. Of course, such declines had already happened several times in the past. But this new drop was completely unexpected. It is contrary to the ‘official’ prognosis, propounded by the statistical experts in the German conference of the educational ministers (KMK, 2005), namely that there will be a very strong growth in student demand until 2015. This prognosis over-estimated the number of new entrants in the years 2005-2007. Even in the year 2008, the number of new students reached only the minimal value of the prognosis corridor.

Figure 4: Proportion of new students (related to the age-group) in Germany¹⁾, 1950-2008



¹⁾ Until 1992 only West-Germany

At first glance, the development of the proportion of new students seems to be not far away from the goal of 40 %. During the last five years this index varied between 39 % (the peak in 2003 and again in 2008) and 35 % (Figure 4). But it is important to take into account that this index includes two sub-groups of students:

- those of German or foreign nationality, who attended the German school system and finished secondary school with a German study entitlement,

- and those of foreign nationality, who passed their national school system and came to Germany with a foreign study entitlement.

The share of foreign students is about 4 – 6 % during the last years. So, the actual proportion of new students was just about 32 to 33 %; that is about 7 to 8 percentage points less than the magic goal of 40 %. According to the official German migration policy, the differentiation between these two sub-groups of students is fundamental, because the regular residence of foreign students is restricted to their studies. That means, they have to leave the country after finishing their studies. They are not available as a reserve for the German labour market. However, there is a public debate to open up the boundaries of the German labour market to allow foreign graduates with a German degree to work for a maximum of three years in Germany. To complete the picture, it is necessary to mention in addition to those German students who carry out their studies abroad (as a whole course). Currently, about 80 000 students do so (= 4% of all students enrolled in German higher education institutions). Unfortunately, no data are available on how many of them return to Germany after finishing their studies.

Currently, there is a lively policy and academic debate about the main reasons which are responsible for this unexpected stagnation or even decrease in student demand. Three hypotheses stand opposed to one another.

- ▶ One explanation refers to the establishment of tuition fees in presently six of the 16 German states which may have deterrent effects. However, this explanation is not really convincing because tuition fees were not introduced before 2007, whereas the break in student demand already began in 2003. Furthermore, in some states, where tuition fees have been introduced, the decrease is below average, whereas in others abstaining from tuition fees the decrease is above average. However, the introduction of fees may have an effect in particular for those families and students for which the costs of studies, particularly the necessary parental contributions, constitute a problem.
- ▶ A second more convincing explanation lies in the long-term fluctuation of the willingness to study among those young people, who hold a study entitlement. The statistical indicator for this phenomenon is the transition rate between school and higher education. Since the 1990s this rate has remained at the low level of 70 to 75 %

(Klieme et al., 2008, p. 171). Before, the transition rate varied between 80 and 90 %, and also the prognosis of the state experts is based on the assumption of a transition rate between 75 and 85 %. Obviously, a lack of mobilization can be observed among school leavers reflected in the large discrepancy between the rate of school leavers with study entitlement and the rate of new entrants in higher education.

It is important to consider that in Germany all school leavers with a study entitlement have many alternative options. So, for many holders of a study entitlement it has probably been more attractive to transfer into vocational training programs outside higher education, in particular such programs which offer good continuing education and advancement chances. Saving time, earning money early and having a job in a firm immediately are advantages which can keep them from taking up studies. Additionally, in the last years the reforms of studies in the course of the Bologna process may have produced feelings of insecurity, particularly with regard to the return on studies. The distinction between a three-year vocational training program and a three-year course of studies (previously four years) has become smaller and that may have an indirect effect in the form of a revaluation of non-academic programs.

- ▶ Thirdly, and this may be the most important explanation: The number of institutions or courses of studies, which have introduced local admission restrictions (*numerus clausus*), has exploded during the last years. Traditionally, access to higher education was open for everyone who held a formal study entitlement. For the majority of courses, there had been no nationwide or institutional restrictions on the number of applicants who could be admitted – except for a very few subjects with a nationwide *numerus clausus* such as medicine. Additionally, there were some courses with a local *numerus clausus*.

During the last years there seems to be a clear trend toward institutions extending these local admission obstacles. This is partly a result of the ongoing Bologna process, because nearly two thirds of all new courses (especially in the most attractive subjects) have introduced admission obstacles, but only half of the traditional courses. Partly, admission procedures are handled as instruments of selection for excellence and of re-distribution (e.g. between subjects). In the meantime, almost 90 % of all new students have had to overcome such local or central admission barriers before enrolment. So,

German higher education institutions are currently tending to close themselves more and more by proliferating admission restriction – partly because of limited resources and capacities, partly because of efforts to establish more vertical differentiation in the form of elite universities or excellence clusters including selective admission procedures.

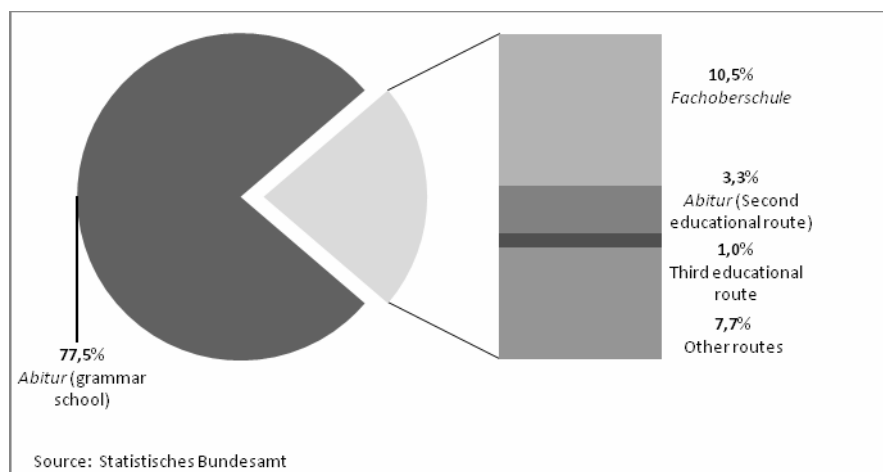
2.2 Lack of permeability in access

As a part of the Bologna process in higher education policy and the parallel Copenhagen process in vocational training policy the issue of recognition of prior learning has become a central issue of European educational policy, in particular for those countries such as Germany in which such procedures have not been practised so far. Opening up access to higher education could not only be a strategy for more social equity in the social distribution of chances to study, but also for enlarging participation and the recruitment of new groups of students aimed at the growth of the graduate output. Furthermore, recognition of prior learning is part of the strategy to implement lifelong learning structures in higher education. The idea of lifelong learning has been an essential element of the aspired European higher education area, and the concept of recognition of prior learning is one of the most important procedures to enhance opportunities for lifelong learning in the area of higher education.

In some, but not in all European countries the expansion and reforms of higher education have also comprised the routes of access and admission to higher education, in particular by opening up access for adult, mature or non-traditional students. Which path is defined as “non-traditional” depends, however, on the national education system and differs from one country to another. Some years ago, Hans Schuetze and Maria Slowey (2000) edited an internationally comparative study about non-traditional students in ten countries, five of them European and five non-European. The comparative view shows the wide diversity of persons which the term “non-traditional students” covers (Schuetze/Wolter, 2003). However, common to many countries, also to Germany, is the feature that the concept of non-traditional students is associated with adults who had proceeded directly from school to vocational training and work and enrolled at higher education at a later stage in life, in some countries without the traditional, but with alternative entrance entitlements, sometimes after a special admission procedure.

The proportion of students from such non-traditional routes also varies from one country to the next. According to the newest European Student Survey Eurostudent (HIS, 2008), based on official country data, the largest share of students who entered higher education via non-traditional routes in Europe is found in Sweden, Spain and Scotland with almost or more than 30 %. In the other countries, much less use is made of unconventional paths, namely only between 3 % and 9 % of students who enter along such routes. (These numbers should be taken with care because their validity depends on different national definitions of what is a “non-traditional student” despite the fact that Eurostudent tried to set a common definition in advance.) And in a few countries non-traditional routes are not offered at all. Among others, Germany is one of the countries with a specific development (Figure 5).

Figure 5: New entrants in higher education in Germany (2006), differentiated between type of study entitlement



In Germany, the massification of higher education occurred primarily within the traditional patterns of access – the transition from grammar school to university with the regular entitlement, the *Abitur*. About 95 % of all new entrants to the university sector have had the general entrance qualification, the *Abitur*. The only exception is the establishment of the *Fachhochschule* as the second pillar of German higher education with its own vocation-oriented access route via the *Fachoberschule*. But the statistical effect has been quite modest: about 60 % of the students in the sector of *Fachhochschulen* passed the *Abitur*. The relatively few students in Germany who commence their studies via a non-traditional route do so, in most cases, via the second-chance education route (evening grammar schools leading also to the *Abitur*). In addition, there is a small proportion of people with vocational qualification and experience but without *Abitur*, who can begin their studies via a third access route by special

admission procedures. Nearly all German states have established an additional access route – the so-called third educational route. But less than 1 % of all new entrants obtain their study entitlement by this route.

The main reasons for this are the often very inflexible selection procedures practiced in the institutions and, probably even more important, the lack of flexible study provisions such as part-time or distance studies. However, the Copenhagen process in the field of vocational training – the idea to establish not only a European higher education but also a European vocational training area – has brought a new dynamic into the discourse about the relationships between vocational and higher education. In the course of this debate the postulate to open up higher education institutions for non-traditional students has gained a lot of political support. The federal and some state governments have agreed in new initiatives to develop more sophisticated models and procedures of recognition and admission.

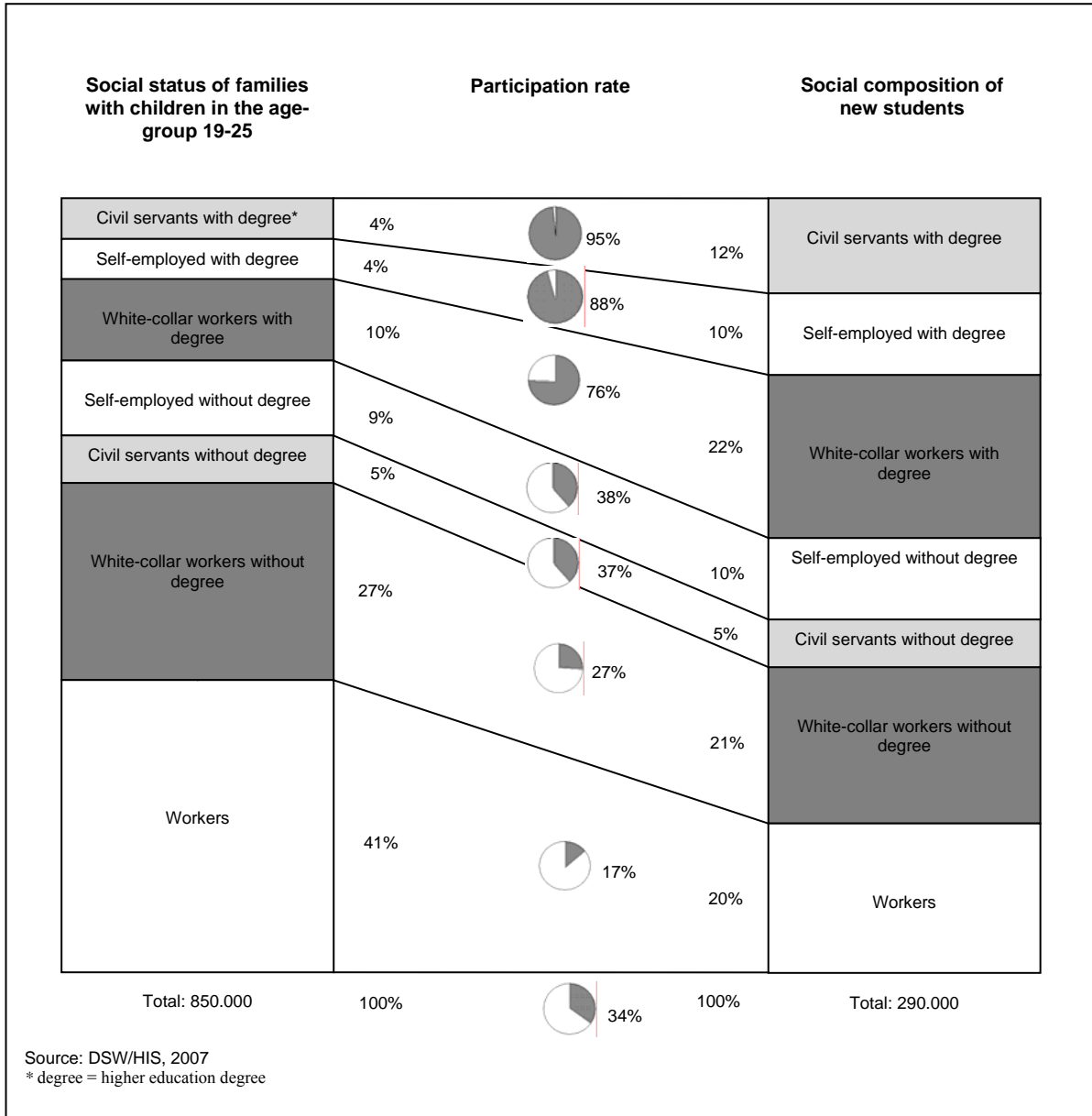
Besides non-traditional students, another lack of permeability can be found in the general mechanisms of social reproduction at the stage of access to higher education. The social composition of the student body has changed considerably as a result of the previous expansion of participation in higher education – but in a probably unexpected direction. It has not led to more social inclusiveness and social equity making institutions accessible for new social groups. Rather the contrary has happened. As a result of the previous waves of the educational expansion which has led to a larger proportion of graduates in the population (Figure 1), the share of students from families, in which at least one parent has already earned a degree, has increased to more than 50 % of all students – in the university sector almost 60 %. The number and proportion of students from working class families have also grown, but at a far lower rate (Isserstedt et. al., 2007, p. 11 ff.). Although not the focus of this article, it may be worthwhile mentioning that one of the most dynamic forces behind the expansion of higher education in Germany has been the changing educational participation of female students, who have in the meantime reached parity at least in the university sector.

It is fair to say that the German university was still an institution of social upward mobility in the first part of the last century, but it has become more and more an institution of social reproduction for those who want to pass on their academic tradition to the next generation. The enormous disparities in the distribution of the social chances to study become even more evident, when comparing the relative chances of different population groups to get access to

higher education. Descending from a family with a higher education tradition is the most important factor influencing the relative chance to enrol. Children from families, in which one parent has already earned a degree, show a probability of more than 75 % for access – with a maximum of 95 % in civil servant families (Figure 6).

On the other hand, the chance for children from non-academic families is lower than 40 % – with a minimum of 17 % in families with a working class background. The social differentiation of study chances corresponds exactly to the distinction between academic and non-academic families. Most of this social selectivity takes place during the school career, not at the stage of access. But many studies show that there is an additional process of screening at the level of access. When comparing the average marks of students at the end of upper secondary school, the relative study chance of young people with an academic family background is considerably higher than of young people with the same achievements but a lower social origin. What is called secondary inequality (Boudon 1974) – the social differentiation of educational decisions in the family context and the reinforcing influence of institutions – seems to be the most important factor responsible for this disparity.

Figure 6: Participation in higher education and social status of students' families, new entrants 2005



The European social survey, the Eurostudent study (HIS, 2008, p. 55 ff.), includes an indicator for a policy of participative equity in higher education, the social make-up of the student body. Nearly all available studies (e.g. Clancy/Goastellec, 2007) support the hypothesis that a significantly higher percentage of children from parents with a professional background undertake higher education studies as compared with children of parents with a lower social background. Eurostudent focuses on students' parents' educational attainment as proxy measures for the social composition of students. The indicator shows, firstly, the ratio between the share of students whose parents have graduated from higher education and the proportion of this group in the total population. And secondly, as a contrast group, the same for students with a lower educational background (up to lower secondary education).

There is no country in which students with a parental higher education background are not over-represented, but with large differences in the extent. The ratio is the highest in Portugal, Romania, Bulgaria, Turkey and Estonia. It is lower in Scotland, the Netherlands and Switzerland. However, there are four countries in which the ratio for students with a low educational background is over or near the statistical criterion for the achievement of equality of opportunity: the Netherlands, Spain, Finland and Switzerland. On the other hand, students with a lower educational background of their parents or their father are extremely under-represented in some other countries, in particular in East European countries such as Bulgaria, Romania, Czech Republic, Latvia, Estonia and, additionally, in Germany.

2.3 Drop-out and success rate

To realize a larger number (or proportion) of graduates, it is not only necessary to attract more new students by a higher transition quota among those who hold a study entitlement (and, additionally, to extend the reservoir of people with a study entitlement) but also to achieve a higher success rate at the end of studies – in other words: to obtain more “output” from the “input” (possibly from a larger “input”). The other side of the success rate is the drop-out rate, which is a methodologically difficult and often very controversial issue even if there is a lot of elaborate theoretically based empirical research about this topic. Conceptually, it is important not to confuse drop-out with other patterns of fluctuation in higher education institutions such as changing the course or the institution. Drop-out is strictly defined as “leaving the higher education system lastingly without final exam”.

Because of data-protection reasons the official German higher education statistics do not provide any process data embracing such events as drop-out. Therefore, data about drop-out are only based on surveys which normally underestimate this phenomenon or on complex estimation models such as the drop-out rating which HIS Higher Education Information System has developed (Heublein et al., 2008; Klieme et al., 2008, p. 131 f.). According to this study the drop-out rate in Germany is currently (2006)

- at 21 % without foreign students
- and 27 % including foreign students.

Although the drop-out rate is below the OECD average (of 30 %), the discrepancy between input and output is another reason for the relatively modest number of graduates leaving German higher education institutions.

Of course, there are some remarkable differences between institutions and subjects. E.g. the drop-out rate has been higher in universities than *Fachhochschulen* (except 2006). The success rate of female students is higher than that of male students. In the last years, the number of graduates has increased a little bit only because of the above-average success of women. But their massive under-representation in most sciences and in engineering is another reason for the stagnation of student demand in these subjects. The success or the drop-out rate varies with the subject. Drop-out is above average in most humanities, sciences and in engineering and computer sciences; it is lower in medicine and teacher training. So, in some subjects, in particular engineering and computer sciences, the gap between input and output makes the lack of graduates worse.

According to a survey of drop-outs (Heublein et al., 2002), there are three main reasons for this decision:

- ▶ A lack of study motivation, that means the decision to study was something like a second best choice, and to drop out was a decision to correct this choice.
- ▶ This reason is quite similar to another important motive: to drop out as a decision for professional reorientation.
- ▶ Financial problems are a further reason to drop out. Based on data from the German student social survey (Isserstedt et al., 2007), it can be estimated that between a quarter and a third of all German students have massive problems in financing their studies – due to several reasons – primarily such students who
 - belong to the quarter with the lowest income (less than 550 € per month; the average income of all students is 770 €);
 - are descended from families with low income;
 - depend on only one source of income, e.g. public support;
 - have to work extensively for their studies.

Of course, there are other individual reasons. E.g., dissatisfaction with the pre-dominant study conditions in the higher education institutions is an important reason but primarily an additional motive rather than the decisive reason. In most cases, the decision to leave university without exam is based on more than one reason.

3 Some concluding remarks: Field of actions for increasing the graduate output

According to the previous analysis there are at least six strategies to close the existing gap between the political targets and the status-quo, in particular for increasing the graduate output in German higher education:

- (1) Widening participation in grammar schools: bring more young people to the level of *Abitur*
- (2) Increasing social participation: bring more talent from non-academic families into the grammar schools and university
- (3) Raising the transition rate to higher education: bring more young people (with a study entitlement) into the university
- (4) Enlarging the permeability between work and higher education: increase the number of non-traditional students (with a vocational qualification and experience)
- (5) Raising the capacities of universities: increase the number of study places and diminish *numerus clausus*
- (6) Reducing the drop-out rate: improve the conditions of successful studying (e.g. organization of studies, counseling, financial support).

Beyond the pure political will to increase not only the social demand for higher education but also the output of graduates as an epiphenomenon of the rising knowledge society, the federal government and the 16 state governments, which are primarily responsible for higher education affairs in Germany, have already taken some measures and activities to realize or at least to approach these targets. The so-called “*Hochschulpakt*” aims at extending the capacities of higher education institutions to reduce the *numerus clausus*. Some German states carry out measures to mobilize more grammar school graduates to take up studies. As a part of the study reform in the course of the Bologna process state and institutions expect to decrease the drop-out rate by a better organization of studies. Currently, in nearly all German states as well as at federal level there is a very lively debate to open up access to higher

education for non-traditional students and to develop new procedures for the recognition of prior learning which have not been very common in Germany so far. So, more permeability between vocational training, further education and higher education ranks very highly on the agenda of German higher education policy. But, presently, it is hard to estimate whether these activities will be successful and what results this changing policy will have in which time.

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