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ABSTRACT

The statistical data presented in this report provide a sketch of higher education in the European Union for the period 1980-89. An introductory chapter defines the topics covered by the report: enrollment, number of graduates, teaching staff, actual duration of study for higher education graduates compared to stipulated duration, unemployment rates of graduates, and public expenditures. Conceptual differences between Member States are identified and there is a short discussion of comparative levels of education and comparative trends. In the second chapter text and approximately 50 figures and tables look at each of the topics in detail for each of the 12 European Union member states--Belgium, Denmark, Germany, France, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, and the United Kingdom--covered by the report. In the third chapter text and approximately 20 tables compare national trends in higher education for each of the countries and each of the topics noted above. An appendix contains 45 tables of underlying data. (Contains approximately 60 references.) (CH)

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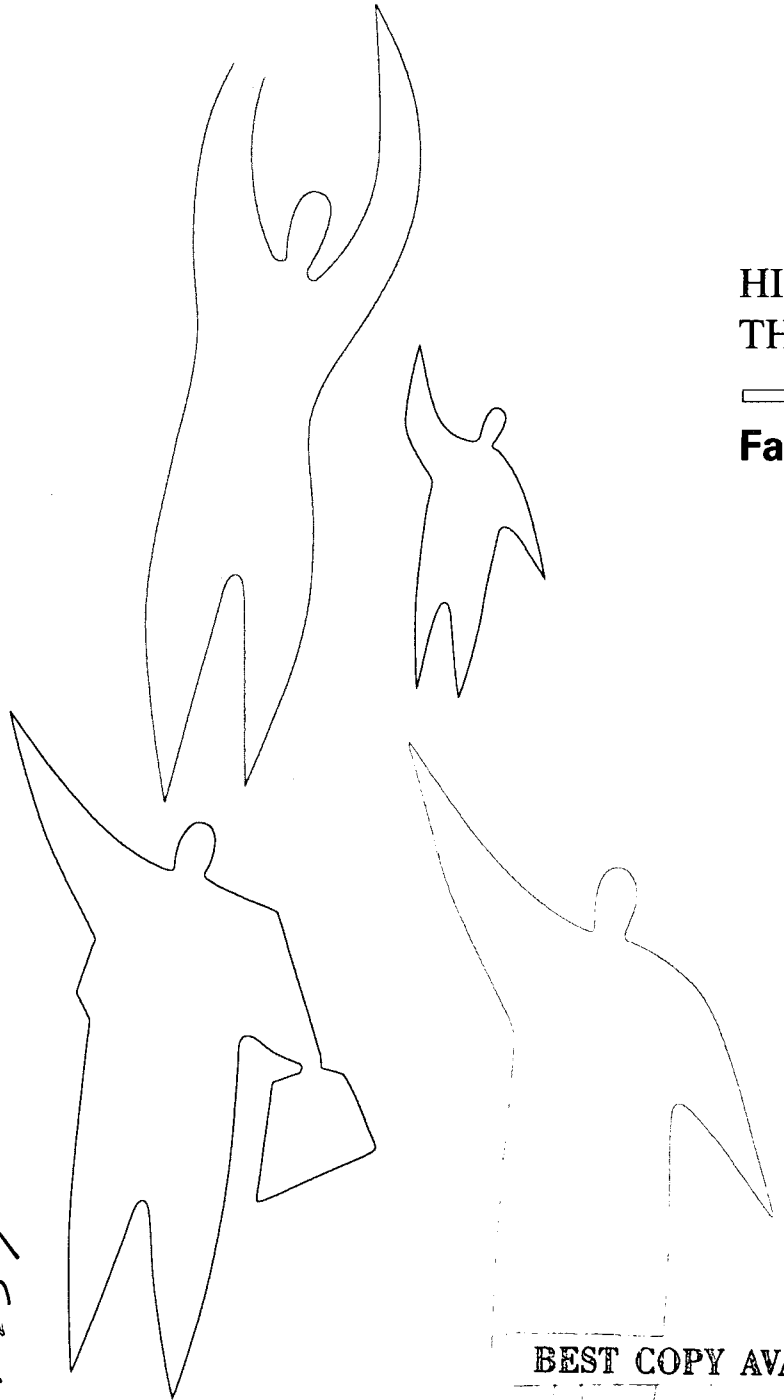

HIGHER EDUCATION IN THE EUROPEAN UNION

Facts and Figures over a Decade

EUROPEAN COMMISSION

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PREFACE

The European Commission's 'Memorandum on Higher Education in the European Community' has been generally very well received. The debate which it stimulated in the Member States has been most productive, contributing to a clearer definition of the future direction of Community action in this field. Discussion in 1994 of the new proposals presented by the Commission for the future of the education and training actions is providing a further opportunity for debate in depth of the future of Community cooperation at the level of higher education, which is a key stage in the intellectual, social and technological development of our societies.

The cooperation developed over the years under the banners of ERASMUS, COMETT and LINGUA has unquestionably resulted in a fund of actions, mobility and partnerships which provide a sound basis for the future. To date, more than 2 000 institutions of higher education in the European Union have benefited from those programmes, and their relations with the outside world, their course content and teaching methods are the richer as a result.

In the context of this cooperation, better information on the development of higher education in the Member States is essential. How are student enrolment rates changing? What changes are there in their distribution over the various specialities? How are the institutions funded? How are staffing ratios changing? What information do we have about qualification rates and students' entry to the labour market? This report has been prepared to try to provide answers to these questions, on the basis of the various sources of statistical data available.

This document seeks to describe rather than to analyse, using facts and figures to provide a sketch of higher education in the European Union, which would be worth further refining at a later date. It covers the 1980s, the aim being to outline developments at Member State level and trends over a period of almost a decade.

We should like to thank Frans Kaiser of the Centre for Higher Education Policy Studies (CHEPS), University of Twente, the Netherlands, who prepared this report for the Task Force Human Resources, Education, Training and Youth of the Commission of the European Communities.

We hope that this study will be of interest to universities and the education world in general.

1 Introduction

1.1 The setting

The growing European integration has not left higher education untouched. Efforts are being made to stimulate the awareness of the European dimension in higher education and to create a setting in which this awareness may have an impact on the operations of higher education institutions and national higher education policies. The best known of these EU-efforts are the programmes for stimulating student and staff mobility and cooperation between higher education and industry (ERASMUS and COMETT). A crucial precondition for the furthering of these existing or any new programmes is the availability of up-to-date and reliable quantitative information on higher education in all Member States of the European Union.

Already there is a large amount of statistical information on higher education available from a variety of sources. However, this information is not always consistent or complete. The information provided by government agencies, central statistical offices, individual institutions for higher education, and research reports create a 'jungle of data' in which it is difficult to discern trends and compare levels in higher education.

To obtain an overview of the current situation and past developments over a period of about 10 years, a number of topics have been selected. These topics are:

- enrolment in higher education;
- the number of graduates in higher education;
- the number of teaching staff in higher education;
- the actual duration of study of higher education graduates compared to the officially stipulated duration of study;
- unemployment rates of higher education graduates;
- public expenditure on higher education.

This research study, conducted by the Centre for Higher Education Policy Studies (CHEPS), attempts to cut some paths through this jungle of information and provide some quantitative insight into the higher education systems of the EU-Member States.

In working through the data, three questions are kept in mind:

- what is the content of the concepts used?
- is the information presented comparable across time and between Member States?
- what are the limitations to the use of the results of the overview?

These three questions will be elaborated upon below.

1.2 Conceptual aspects

Because of the differences between the national systems of higher education, their structure and their history, the meaning of the concepts used in the list of selected topics often differs between the Member States. In order to identify conceptual discrepancies, the main sources of these differences will be addressed below.

Higher education

Within higher education three basic activities can be discerned: teaching, conducting research and providing services. In this report, the main focus is on teaching (as the list of selected topics shows). This has consequences for determining what data are to be included. Data referring to institutions that have no teaching activities (research institutes) are therefore not included. Only those institutions that provide courses at the appropriate level[1] are considered to be higher education institutions.

1 The appropriate level is operationalised as nationally accredited or acknowledged.

Open University is treated differently, not because of the absence of teaching activities but because in most countries with an Open University a significant proportion of its students is not in degree programmes. University hospitals are included although there are substantial differences in the way statistical information on the selected topics is organised. Military schools are excluded because of expected problems regarding the availability of statistical data.

National systems of higher education are very diverse. A monolithic description of the national higher education systems would result in an oversimplified and even biased picture for quite a number of countries. Statistical data therefore are broken down by type of institution as far as possible. However, to enhance comparability between the national descriptions a rather crude classification of higher education institutions into two types is adopted: the university sector and the non-university sector. The first sector comprises the traditional universities and the second sector all institutions with no significant research activity. In countries with a binary system, this classification can easily be made. In countries with a unified system or with pluriform systems implementing this classification may cause some difficulty.

Enrolment

Enrolment in higher education denotes the number of students enrolled in degree courses. This very broad description of enrolment may provide only very general information on the size of the higher education system. Because of the substantial differences between the EU-Member States regarding their higher education systems and courses, a further breakdown by type of institution and by discipline is needed to obtain a thorough understanding of the size of the systems and the changes within these systems. The types of institutions within each system will be described in the next chapter. As for the breakdown by discipline, a global classification has been applied in order to reduce complexity in the presentation and to enhance comparability of the disciplinary fields. The categories used in this report are:

- science and technology (S&T), including sciences, engineering, natural sciences, agriculture;
- humanities and social sciences (H&S), including humanities, social sciences, teacher training, arts, social work;
- business and law (B&L), including law, economics, business studies, commerce;
- medicine (M), including medicine, dentistry, veterinary medicine, paramedical programmes.

In addition to the breakdown by type of institution and disciplinary field, a further breakdown is required based on mode of enrolment - full-time student or part-time - and by level of course - undergraduate or post-graduate.

It is a general rule in collecting (international) statistics that the more detailed a breakdown becomes, the more limited is the availability of data. Hence, enrolment data are presented per single category, not by a combination of all breakdown criteria listed above.

Graduates

The number of graduates is usually seen as a measure of the output of the educational process. Hence, it is important to avoid any kind of double counting of diplomates since this would overestimate the output of that system. There are two potential sources for double counting of degrees. The first is the occurrence of intermediate certificates or diplomas. In some countries the programmes are organised in such a way that during the programme a number of certificates is granted. These certificates are not 'final qualifications' (they do not complete a preparation for the labour market) and therefore have no function on the labour market. These certificates are not included.

The second potential source for double counting degrees is the phenomenon of accumulation of diplomas. In some countries holders of a final qualification do not enter the labour market but continue their study. In most of these countries this phenomenon is seen as an anomaly of the system. The extent to which this occurs differs between the systems as does the availability of statistical data on this phenomenon.

Teaching staff

The basic characteristic of higher education is the handling of knowledge. In performing this activity academics play the key role: they are the ones who preserve and further (scientific) knowledge, either by conducting research or by teaching future generations.

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According to the definition of the non-university sector given above, academic staff in these institutions comprise teaching staff only: virtually all their time goes into teaching students. In the university sector, academic staff can be categorised as 'teaching staff' and 'research staff'. The latter is considered to have no teaching obligations whatsoever and is therefore not considered to be teaching staff. University teaching staff engage in both teaching and research. But since their research activities mainly serve the amelioration of their teaching activities (Humboldt university) they are assumed to be full-time teaching staff.[2]

Duration of study

The actual duration of study is the number of years higher education graduates spend studying before attaining their first degree/final qualification. Relating the actual duration to the formal length of the programmes may give an important indication of the functioning of the higher education process.

To assess the actual duration of study each generation has to be followed throughout their entire higher education career. Actual duration of study then refers to the average or median number of years spent in the higher education system by the graduates of a generation.

There are two major problems in using this method. The first is a conceptual/methodological one. The definition of actual duration of study assumes an uninterrupted period of full-time study. The duration of study for students who interrupt their study for a period of time therefore will be overestimated. If part-time enrolment is possible, the formal length of study for part-time students is usually longer than it is for full-time students. If part-time enrolment is not possible, students who actually study part-time will cause the average actual duration of study to increase.

The second problem is the availability of data. The literature shows that very little information is available on this topic. In most countries only rough estimates on an aggregated level can be provided. One of the reasons for this lack of information is the very nature of this type of information: data can be collected only on a cohort basis. This type of analysis is expensive and takes a lot of time: all students of the generation must have left the system before a final duration can be calculated.

Unemployment rates

The assessment of the rate of unemployment of higher education graduates is not a standardised procedure within each country. There are a few ratios or figures that are used to indicate the (relative) position on the labour market of higher education graduates. Some of these are:

- a breakdown of general unemployment data by educational background and discipline;
- the proportion of new graduates who are unemployed after a certain period after graduation;
- the proportion of unemployed graduates in the total stock of graduates in the labour force;
- the absolute number of unemployed graduates.

Literature[3] shows that there is no standard indicator used to identify the number of unemployed higher education graduates. There is also no uniformity in the methods used to collect the empirical data. Frequently used methods are:

- labour market surveys;
- information from local or regional employment exchanges;
- surveys among graduates by the higher education institutions or a central (government) agency.

Because of the diversity in the type of unemployment indicator that may be used and the method used to collect the data, comparisons of unemployment rates have only limited value.

Expenditure on higher education

Two main aspects can be distinguished: firstly, *what types of expenditures* are included, and secondly *whose expenditures* are included. Both issues will be addressed below.

Earlier, the concept of 'higher education' was defined by relating it to the institutions providing certain courses. As well as the expenditures directly related to the provision of education and research of the higher education institutions, there are (national) expenditures on activities that create the environment within which the institutions for higher education operate. These so-called overall expenditures are made with respect to two types of activities. First, there are national policy costs related to the governing, legislation, administration, quality assessment, and the like. They include all

2 With the increase of contract research by academic teaching staff, this assumption has become questionable.

3 *From Higher Education to Employment*, OECD, Paris, 1992

costs made for higher education policy-making. The second group of supporting activities centres on enabling students to study. This group comprises student support schemes as well as indirect aid to students through subsidising student services. In financial budgets and education accounts, these types of expenditures are not always visible. The concept 'expenditure' comprises current expenditure (i.e., pay-roll expenditure and material expenditure) as well as capital expenditure. In most studies on expenditure on higher education, capital expenditure is excluded because of the variety of ways in which this expenditure is accounted for in the annual reports of the higher education institutions. Although this is a genuine reason for not using capital expenditure at the institutional level, it does not necessarily prohibit the use of capital expenditure on the national level, as expenditure or costs which are not passed on to the budgets of the institutions may well be visible on the ledger of the funding organisation (e.g. the Ministry of Education).

The second main question concerning the concept of 'expenditure on higher education', is: whose expenditures are (to be) included? The main distinction here is between public and private expenditure. Public expenditure is the expenditure on higher education by public organisations, comprising the funding of public institutions for higher education, subsidies for private institutions for higher education, and expenditure on supporting activities. The term 'public organisations' is used to indicate the conglomerate of national government, regional or local authorities, and other public organisations engaged in the field of higher education (e.g., those providing 'regular' funding for education and research, student support, commercial research projects, etc.). It should be noted that funding for contract education and contract research by public organisations (including the government), besides the 'regular' funding of education and research by these organisations, is included in the definition of public expenditure on higher education.

It is assumed that 'private expenditure' encompasses the expenditure on higher education by private organisations (supporting private or public institutions of higher education and/or students) and by individuals (students and/or their relatives). As information on this category of expenditure is quite scarce, it is not taken into account in this project.

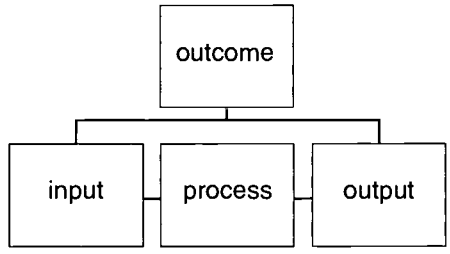
1.3.1 Comparative potential

One of the reasons to present an overview of statistics on higher education topics is the potential such an overview provides to compare the Member States to each other on all these topics, both in terms of levels and trends. As far as comparing *levels* is concerned one crucial precondition has to be met: the data on these topics have to be put in the context of the national systems. In order to compare the levels of enrolment, the data have to be transformed into participation rates, the number of graduates should be related to enrolment and the duration of study, and teaching staff should be related to enrolment. These transformations, however, go beyond the scope of this research project. Data on duration of study and unemployment rates can be compared between countries if the concepts and methods used are comparable (see previous section). To compare expenditure on higher education between the Member States and across time, it is necessary to choose a common denominator which is not nation-specific (to facilitate comparison between countries) and which takes into account the changes in national prices indices (to enable comparison across time). Expressing expenditure on higher education as a percentage of GDP is a commonly used way to meet those two requirements.

Although the use of the results for comparing levels is quite limited, the project may provide some interesting results in comparing *trends*: do all systems change and do they all change in the same way? Comparisons may be made between growth rates of enrolment and graduates, broken down by type of institution and by discipline, between growth rates of the number of teaching staff, actual duration of study, unemployment rates, and the levels of expenditure on higher education.

1.3.2 Interpretation of comparative results

Since information on trends is available, trends according to category may be related to one another, e.g., the change in enrolment may be related to the change in public expenditure on higher education. Such a ratio may provide a new insight into a higher education system. However, to arrive at a valid interpretation of such a ratio it is necessary to know what relation exists (or is assumed to exist) between the characteristics involved. If enrolment and expenditure are both considered to be inputs to the educational process, the ratio of these two characteristics is an indicator of the national effort regarding higher education. If enrolment is considered to be an output, the ratio may be interpreted as an indicator of the efficiency of the system, if certain conditions are met. In order to clarify relations between the characteristics, a simple model[4] of the higher education process is presented below.



Each topic of the list can be located as part of the model:

inputs:	enrolment, expenditure
process:	teaching staff, duration of study
outputs:	enrolment, graduates
outcomes:	unemployment

Enrolment can be considered to be an input or an output, depending on whether students are seen as the 'raw material' which has to be worked on, or as an indication of the amount of educational activity (e.g. number of class hours) provided by the higher education institutions.

How the ratio between the characteristics may be interpreted depends on the location of the characteristics in the model. There are four basic ratios of the elements of the model, which can have the following interpretations (under certain conditions):

input/input	effort that is put into higher education
output/process	technical efficiency of the education process
output/input	efficiency of the education process
outcome/output	effectiveness of the education process

The 'certain conditions' refer to all characteristics of higher education and society at large that are not explicitly part of the model but nonetheless are relevant to higher education (e.g. the quality of the graduates, demography, state of transition of systems etc.). Valid interpretations can be made only if these unmentioned characteristics are identical or at least similar in all countries compared.

1.4 Outline of the report

In the next chapter, statistical information on the six topics listed will be presented for each EU-member state. Furthermore a short description of the higher education system will be given.

In chapter three comparisons of trends and, where possible, levels will be presented for each of the topics listed.

4 For an overview of models of the education process see M. van Herpen (1992)

2 The national systems: levels and trends

2.1 BELGIUM

2.1.1 The higher education system

Belgium consists of two main communities: a Flemish-speaking community and a French-speaking community.[1] Each of these communities has a higher education system of its own. Although both systems are separated from each other, they are similarly structured. This similarity in structure originates from the common history which the French and the Flemish-speaking higher education systems have experienced.

Both systems consist of a university sector (*Enseignement Universitaire/Universitair Onderwijs*) and a non-university sector (*Enseignement Supérieur/Hoger Onderwijs Buiten de Universiteiten*).

University education consists of three cycles: the first cycle (in which a two or three year programme is offered) leads to the '*Candidat/Kandidaat*'; the second cycle leads to the '*Licence/Licentiaat*' and is also of two or three years duration; and the third cycle consists of a one or two year programme, leading to the '*Doctorat/Doctoraat*'.

The non-university sector is divided into short courses (*type court/korte type*) and long courses (*type long/lange type*). Short courses require two or three years of study and lead to the degree of '*Gradué(e)/Gegradueerde*'. Long courses require four to five years of study and lead to a certificate of '*Candidature/Kandidatuur*' or '*Licence/Licentie*'.

Although the structures of both systems do not differ significantly, there is one minor difference which has important consequences for this study, namely the availability of statistical data. It has proven to be more difficult to obtain comprehensive time series data on higher education for the French-speaking sector. This severely hampers the creation of a comprehensive and up-to-date statistical description of Belgian higher education.

2.1.2 Enrolment

Until 1991 students could enrol as full-time students only. Since 1991 a new university act has come into operation which allows universities to enrol students on a part-time basis.

Total enrolment in universities shows a steady increase during the early 1980s. In 1986 and 1987 enrolment fell, but by the end of the decade enrolment had increased to over the 1985 level.

As for the breakdown by discipline, most students in universities were enrolled in H&S (31 % in 1989). The remainder of the students was evenly divided over B&L, S&T and medicine. Compared to 1980 there has been a shift from medicine (28 % in 1980, 21 % in 1989) towards B&L (17 % in 1980, 25 % in 1989). In *HOBU* long term*, the majority of students are enrolled in S&T (52 %) and B&L (42 %), with the remainder enrolled in H&S.[2] In *HOBU* short term**, most students are enrolled in B&L (38 %) and H&S (31 %). The remaining students are enrolled in medicine (17 %) and S&T (13 %). In *HOBU* long term, a shift from H&S towards B&L (5 per cent points) has occurred since 1981. In *HOBU* short term, there was a shift from H&S and medicine towards S&T and B&L.

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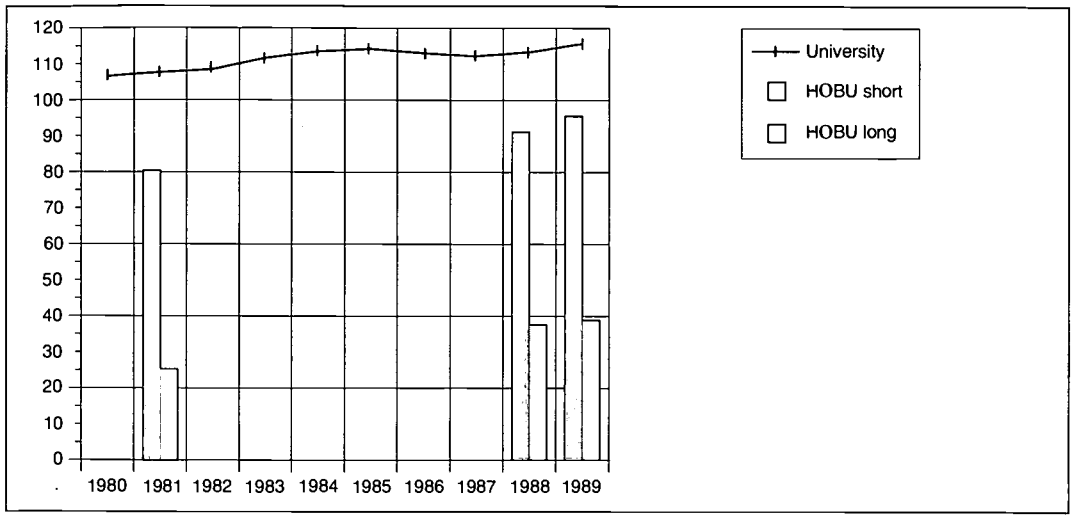
* *HOBU* long term = non-university higher education long courses

** *HOBU* short term = non-university higher education short courses

1 Statistical data on the French-speaking community comprise also the information of the third linguistic community (German speaking), which is relatively small.

2 Year of reference 1989

Figure 1 Enrolment in Belgian higher education (*x 1000*)



sources: Statistisch Jaarboek van het Onderwijs, Ministerie van Onderwijs
Annuaire Statistique de l'Enseignement
Jaarverslag 1990, dienst voor universitaire statistiek

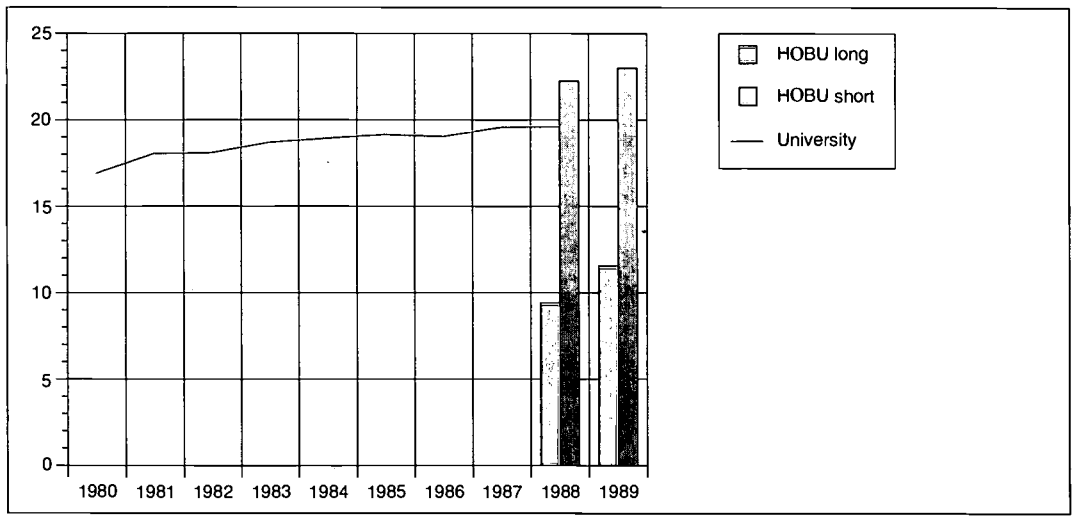
note: Totaal aantal inschrijvingen - studenten en meisjesstudenten van Belgische of vreemde nationaliteit
Data on Flemish *HOBU* for the period 1982-1988 show a steady increase in *HOBU* long term and a minor dip in enrolment in *HOBU* short term in 1985. The corresponding data were not available for the French-speaking community.

2.1.3 Graduates

The number of university graduates has steadily increased. In 1988, most students graduated in H&S (34 %) and in S&T and B&L (both 23 %). 21 % of the graduates were in medicine. During the period 1980-1988 there was a shift from medicine towards B&L.

Available data on graduates of *HOBU* do not allow time series analysis. Figure 2 shows that the number of graduates of long term *HOBU* is substantially lower than the number of graduates from universities, but the number of graduates in the three year programmes at *HOBU* short term is much higher. Most graduates in the *HOBU* long term are in S&T (56 %) and B&L (41 %). In *HOBU* short term, B&L is the most popular field (47 %), whereas the remainder of the graduates are distributed over H&S (21 %), medicine (20 %) and S&T (13 %).

Figure 2 Graduates from Belgian higher education (*x 1000*)

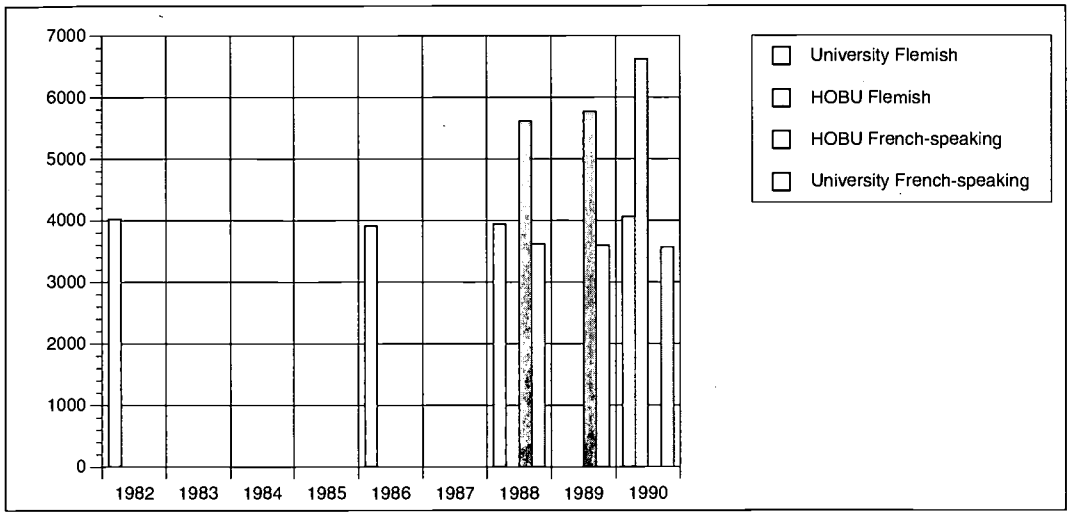


sources: Statistisch Jaarboek van het Onderwijs, Ministerie van Onderwijs
Annuaire Statistique de l'Enseignement
Jaarverslag 1990, dienst voor universitaire statistiek

2.1.4 Teaching staff

Availability of data on teaching staff is rather limited. From 1960 to 1980 the teaching body increased very rapidly. During the 1980s, however, the number of tenured staff fell, especially in the French-speaking universities. To compensate, the proportion of short term contract personnel has increased[3]. From the fragmented statistical information on staff in Flemish higher education, presented in figure 3, it can be concluded that the number of academic staff[4] in Flemish universities remains relatively stable. The number of teaching staff in Flemish *HOBU* is, relative to enrolment, slightly higher than in Flemish universities.

Figure 3 Academic staff in Belgian higher education (*in fte*)



sources: Annuaire Statistique de l'Enseignement
Statistisch Jaarboek van het Onderwijs
Vlaamse Interuniversitaire Raad, *Statistische gegevens betreffende het personeel aan de Vlaamse universitaire instellingen*
CIUF, Statistiques étudiants, personnel

2.1.5 Duration of study

The standard duration of study for university courses (*Licence/Licentiaat*) is four or five years. The *Doctorat/Doctoraat* takes two or three years of study longer and the *Candidature/Kandidaat* two or three years less.

HOBU long term programmes have a standard duration of four to five years and have a level comparable to the four or five year programmes of the universities. *HOBU* short term programmes have a standard duration of two or three years.

Statistical information on the actual duration of higher education study is not available for all Belgium. There are studies in which the repeat rate of students is assessed in some Flemish universities and *HOBU* institutions.[5] The studies indicate that at these universities 35 % of the students graduate after having repeated one or two years. This might mean that on average the actual duration of study is about half a year longer than the standard duration of study. In *HOBU* short term programmes, 14 % of the graduates at the institutions examined extended their length of study by one year, which on average would result in a hypothetical two months extension of the standard duration of study. Because of the limited scope of these data, they may not be representative for the Belgian situation.

3 Source: M. Woitrin, Belgium in: *Encyclopedia of higher education*, B.R. Clark and G. Neave (eds.), Pergamon Press Ltd Oxford, 1992, pp.61-70

4 Teaching staff and scientific personnel (onderwijzend personeel en wetenschappelijk kaderpersoneel)

5 A. Bonte, Belgium (Flemish Community) in: *From Higher Education to Employment*, OECD, Paris, 1992. R. Brijs, *De democratisering van het hoger onderwijs buiten de universiteit*, Departement Sociologie, K.U. Leuven, Leuven, 1992

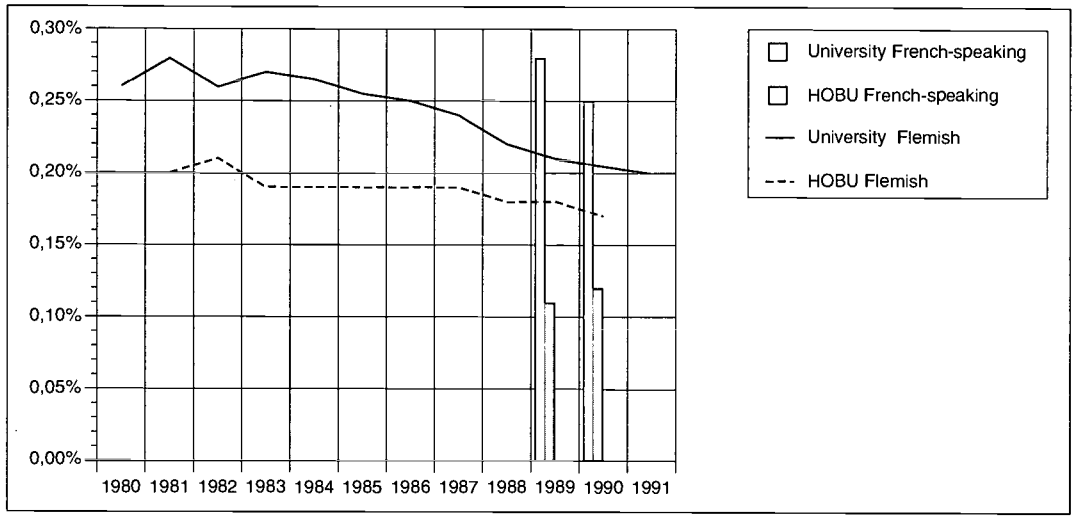
2.1.6 Unemployment

No aggregated data for Belgium or even the Flemish or French-speaking communities are available on unemployment rates of higher education graduates. The information available refers to university based studies. From these studies it appears that unemployment is lowest in B&L and civil engineering (1-2 %) and highest in S&T (varying from 4 to 9 %).[6] These unemployment rates differ between universities, so it is not possible to give an aggregated figure on the rate of unemployment of higher education graduates.

2.1.7 Financial resources

Time series analyses into the 1990s are possible for the Flemish community only. These data show that the decrease of public expenditure on higher education[7] as a percentage of GDP continues into the 1990s.

Figure 4 Public expenditure on Belgian higher education as a percentage of GDP



sources: Vercruysse, N., Brochure prepared for the European Colloquium 'The missions and means of the university: issues and prospects for the financing of the European university system', Barcelona, September 1989
Forum
Education et Formation, Annuaire statistique, p. 47

6 A. Bonte *op.cit.*

7 Expenditure on university refers to 'working allowances'

2.2 DENMARK

2.2.1 The higher education system

Higher education in Denmark is offered at a variety of educational institutions which can be divided into three sectors: the university sector, the college sector and the vocational schools. The university sector consists of five universities and thirteen university level institutions (*højere læreanstalter*). In the college sector there are 92 institutions. The vocational schools have training and education at the upper secondary level as their main task. In addition to these 'non higher education' tasks, vocational schools offer an important part of the short higher education programmes.

Higher education institutions offer programmes at three different levels:

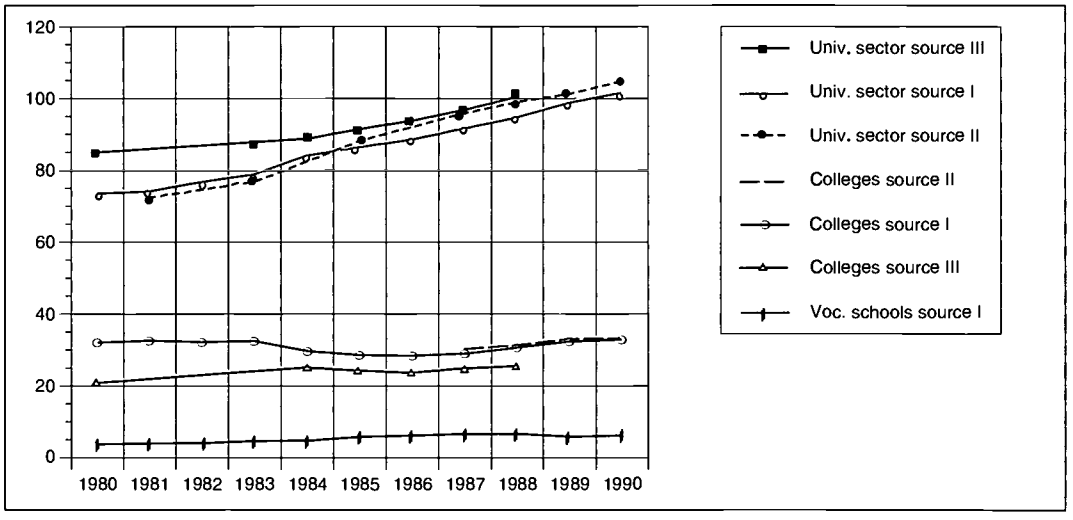
- Short programmes of 1-2 years, very often including practical vocational training. These course are offered mainly by the vocational schools.
- Medium level programmes of 3-4 years, i.e., teacher training, engineering, social work and business studies. Traditionally, medium level courses are offered by the college sector.
- Long programmes scheduled to last five years, leading to the '*Kandidat*' degree, which is regarded as an equivalent to the masters degree. Graduates with the '*Kandidat*' degree can go on with programmes leading to the Ph.D. degree. Long programmes are offered by institutions in the university sector.

2.2.2 Enrolment

For the Danish data on enrolment in higher education a number of sources which are not strictly comparable has been used. Part of the differences in the data presented may be due to the way part-time students are accounted for. In the university sector 12 % of the students are enrolled as part-time. In the college sector, this percentage is 3.6.[8] Although the information from the different sources is not identical, it shows that enrolment in the university sector (which is the largest sector) has steadily increased (by 40 %) whereas enrolment in the college sector has stabilised in the second half of the 1980s. Enrolment in higher education courses at vocational schools is relatively low, but has been increasing rapidly since 1980.

In the university sector enrolment is evenly divided over S&T, H&S and B&L, leaving medicine with 6 % of the total enrolment. In the college sector most students are enrolled in H&S (48 %) and S&T (45 %). B&L in the college sector is almost non existent.[9]

Figure 5 Enrolment in Danish higher education (*headcount, x 1000*)



source I: Information from Ministry of Education and Research
source II: *De videregaende uddannelser*
source III: UNESCO, Statistical Yearbook

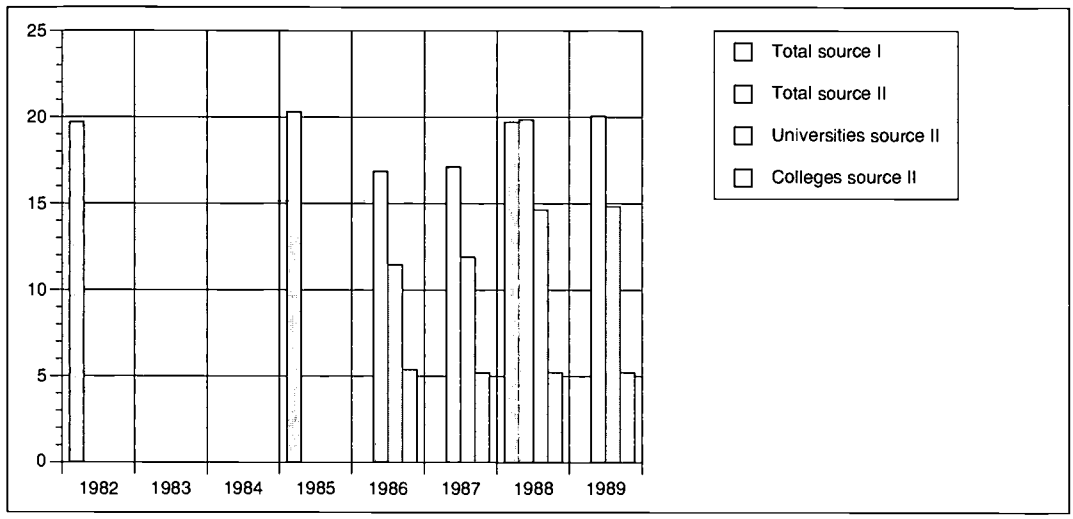
8 Year of reference: 1990, source: Danish Ministry of Education and Research

9 Year of reference: 1988

2.2.3 Graduates

Information on graduates in higher education is available only for the second half of the decade. The number of graduates at colleges remained stable during this period but the number of graduates in the university sector showed a substantial increase in 1988, due to an increase in business school graduates. The latter was caused by an expansion of the intake capacity of these schools in the middle 1980s.

Figure 6 Graduates from Danish higher education (*x 1000*)

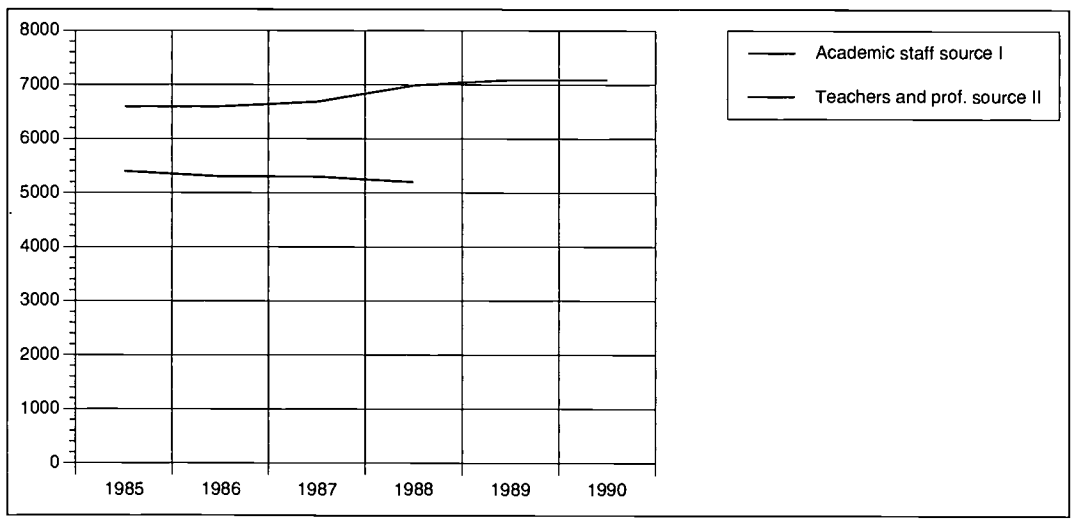


source I: *De vidergaende uddannelser*
source II: OECD, *From higher education to employment*, volume II, table 9 p.69

2.2.4 Teaching staff

The number of academic staff in the university sector increased by 8 % between 1985 and 1990.[10] However, another set of data provided by the Danish Ministry of Education and Research shows that the number of *teachers and professors* has decreased during the second half of the decade (by 4 % from 1985 till 1988). Since both datasets come from the Danish Ministry of Education and Research this would imply that the number of non-teaching academic staff has grown significantly.

Figure 7 Academic and teaching staff in Danish higher education (*in fte*)



note: Academic staff in university sector (source: Danish Ministry of Education and Research)
Teaching staff in total higher education (source: Danish Ministry of Education and Research)

10 Source: Danish Ministry of Education and Research

2.2.5 Duration of study

The standard duration of study in *Kandidat* programmes is five years (a few programmes take longer, e.g, medicine and architecture, and a few programmes take only four years, e.g. agriculture and computer science). For the medium level programmes, the standard duration is three years.

Before the reform of the State Education Grant and Loan scheme in 1988, the actual duration of study in the university sector was often 3-4 years longer than the standard duration. Many students had part-time jobs, in order to cover their cost of living. After the 1988-reform - that fixed the period during which students were eligible for student support on the standard duration of the programme plus 1 year and which also increased substantially the level of support per student - a new situation arose. Students in the long cycle programmes on average now finish their studies within the standard duration.

In the short and medium-cycle programmes in which attendance is compulsory and teaching is more 'classroom' organised and examination oriented, most students finish their studies within the officially stipulated time.

2.2.6 Unemployment

The average unemployment rate of higher education graduates is substantially lower than the average unemployment rate of the total population.

Table 2.2.1 Rate of unemployment of higher education graduates (in per cent)

	1983	1985	1988
short-cycle qualification	4.56	3.74	3.80
medium-cycle qualification	3.29	2.44	2.57
long-cycle qualification	4.60	4.23	3.39
total population	9.54	7.08	8.24

source: H. Traberg and P. Bache, Denmark in: *From higher education to employment*, volume I, pp. 69-86, table 11

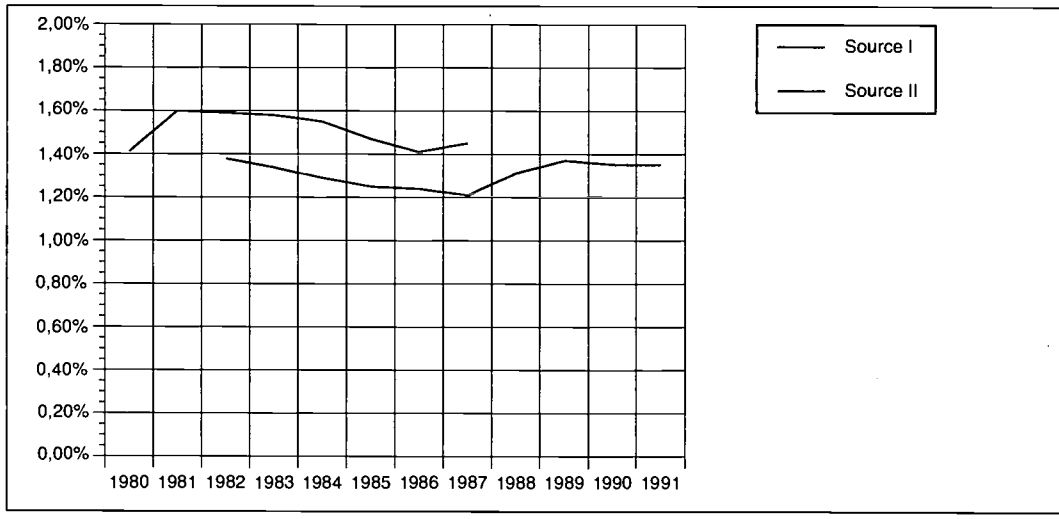
Part of the fall of the unemployment rate of higher education graduates in the mid 1980s can be explained by the fall in overall unemployment rates. However, in 1988 the overall unemployment rate had risen again but unemployment of higher education graduates remained stable or dropped even further (in long-cycle programmes, especially humanities and psychology). Figures for 1991 however indicate that unemployment rates of higher education graduates are rising again.

Unemployment rates are highest in H&S. In medicine the unemployment rates are below the average as were the unemployment rates for B&L graduates until 1991 when unemployment grew substantially in that field.

2.2.7 Financial resources

The Danish government has made substantial cutbacks in the higher education budget during the 1980s, which can be seen in the figure below. However, in 1988 and 1989 expenditure on higher education increased substantially due to a major change in the system of student support. This sudden increase levelled out in the early 1990s.

Figure 8 Public expenditure on Danish higher education as a percentage of GDP



sources: I Kaiser et al, *Public expenditure on higher education*
II Danish Ministry of Education and Research

2.3 GERMANY

2.3.1 The higher education system

The German higher education system consists of two main sectors: the university sector (*Hochschulen*) and the non-university sector (*Fachhochschulen*). Higher education in the university sector is provided by 67 universities, one comprehensive university, 8 colleges for teacher training and 29 colleges for music and art. The non-university sector consists of 98 *Fachhochschulen* and 24 colleges of public administration.

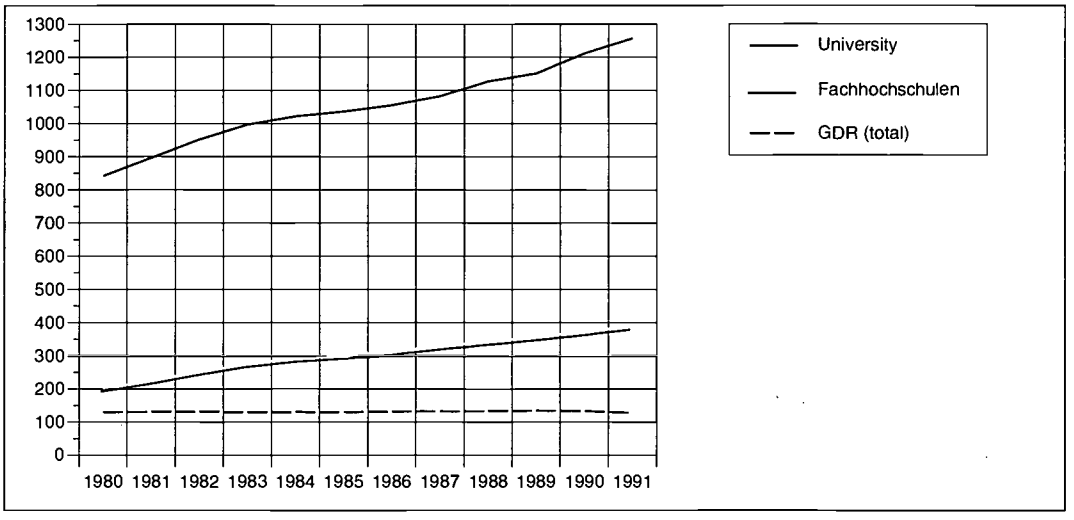
The programmes in universities lead to the *Diplom*, the state examination (*Staatsexam*), and the *Lehramtsprüfung* (teacher training). The standard length of study is 10 to 12 semesters. Universities have the exclusive right to award Ph.D.s (*Doktor*).

Fachhochschulen award the *Diplom (FH)*, which is supposed to be passed after a standard length of study of 8 to 9 semesters.

The situation in the former GDR was quite different. It comprised universities, technological universities, teacher training colleges, colleges for music and arts, etc. The system was, at least in its statistics, a unified system of higher education. Since no consistent time series data on the unified Germany are available, data are presented for both former countries separately.

2.3.2 Enrolment

Figure 9 Enrolment in German higher education (*headcount, x 1000*)



sources: Federal Ministry of Education and Science, *Basic and Structural Data*
AKTUELL Bildungswissenschaft: Studenten an Hochschulen, 1975 bis 1991, 7/92, BMBW
note: *Fachhochschulen* includes colleges of public administration

The breakdown by discipline cannot be carried out satisfactorily since B&L cannot be singled out from H&S. The distribution of students over the disciplinary fields in universities has remained stable during the 1980s: S&T 34 %, H&S 57 % and medicine 8 %. At the *Fachhochschulen*, enrolment has shifted from H&S (42 % in 1991) towards S&T (58 % in 1991), especially in the first half of the decade. In the former GDR, enrolment has shifted as well, according to the following overview. It is remarkable that the shift from S&T towards H&S which occurred in the 1980s has turned around in 1991.

Table 2.3.1 Breakdown by discipline of higher education enrolment in the former GDR

	S&T	H&S	B&L	M
1980	42 %	34 %	14 %	10 %
1990	52 %	25 %	13 %	10 %
1991	48 %	29 %	12 %	11 %

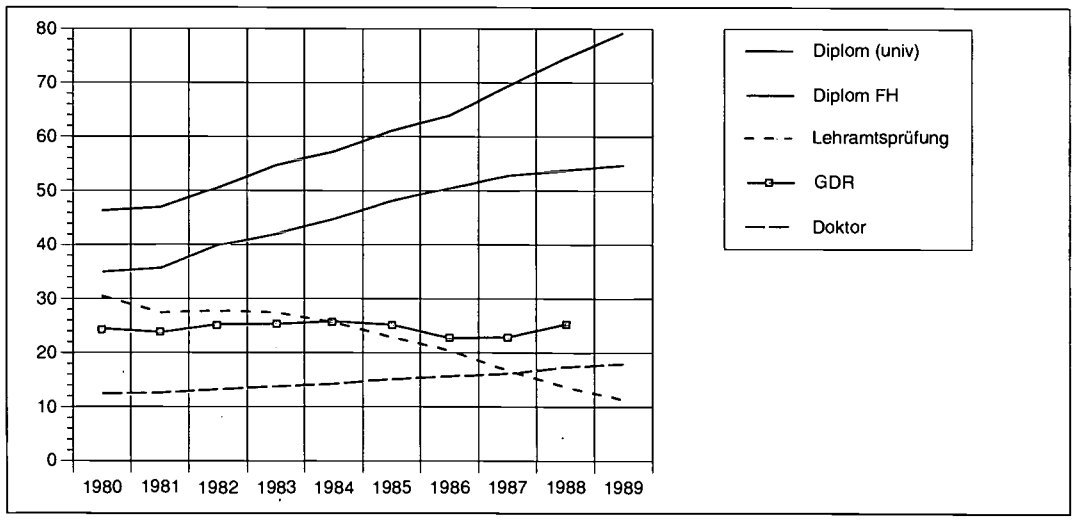
source: Hochschulstudium in der DDR, HIS, 1990

2.3.3 Graduates

Within the university sector, there are three main types of degrees. The first is the *Diplom/Staatsexamen*. This degree is awarded after four or five year programmes. The second type of degree is the *Lehramtsprüfung*, which is awarded in teacher training programmes. The final degree is the *Doktor* degree (Ph.D.). In the statistics on graduates in the former GDR no distinction is made according to the level of graduation.

The number of *Diplom* recipients (university and *Fachhochschule*) as well as the number of Ph.D.recipients have increased during the 1980s. However, the number of *Lehramtsprüfungen* has constantly decreased. The number of awards granted in the former GDR has remained relatively stable.

Figure 10 Graduates from German higher education (*x 1000*)



source: Federal Ministry of Education and Science, *Basic and Structural Data*

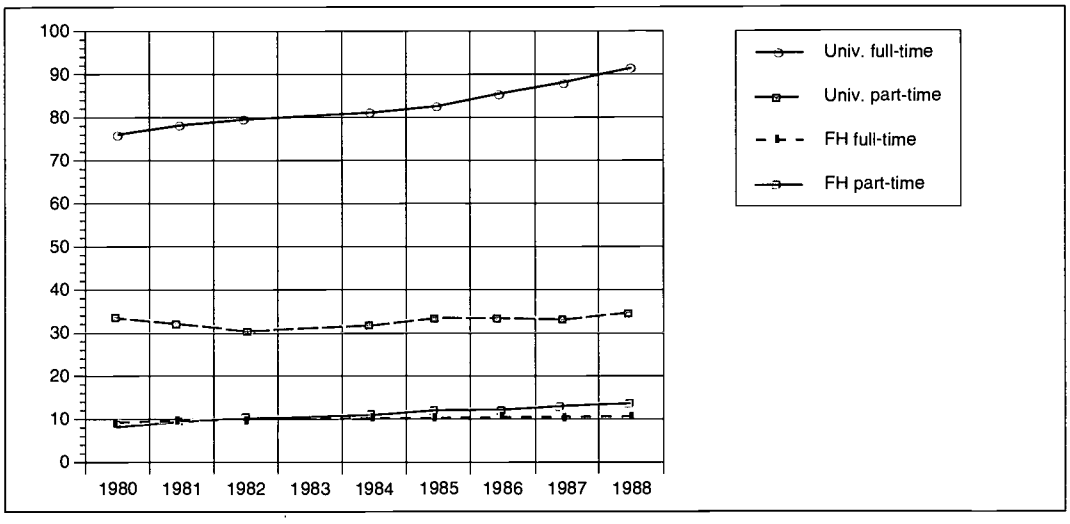
The breakdown by disciplinary field shows some fluctuations during the 1980s. Most of the *Diplom* holders graduated in H&S (48 %, 1989), the same percentage as in 1980 but in the mid 1980s this percentage was 3 to 4 % lower. The fluctuation in S&T graduates (37 %, 1989) was opposite to that of H&S, although the 1980 level was substantially lower (32 %) than the 1989 level. Regarding the *Diplom (FH)* holders similar fluctuations occurred. In 1980, the proportion of S&T was 8% higher than the proportion of H&S graduates (54 % vs 46 %). In 1985, however, these positions were completely reversed and in 1989 the graduates were evenly distributed over both disciplinary fields.

In 1990, most students (40 %) in the former GDR graduated in S&T and H&S (36 %) (B&L 14 %, medicine 10 %). In 1980 this distribution was more or less the same (S&T 38 %, H&S 37 %, B&L 17 %, medicine 9 %).

2.3.4 Teaching staff

The number of teaching staff has constantly risen in German higher education. A remarkable feature of this growth is that in the universities, it is due to the increase in full-time staff (the number of part-time staff has remained stable) whereas in the *Fachhochschulen* the growth is due to the increase in part-time staff (part-time staff grew from 48 % in 1980 to 57 % in 1988).

Figure 11 Teaching staff in German higher education (*x 1000*)



source: Federal Ministry of Education and Science, *Basic and Structural Data*

2.3.5 Duration of study

The extended duration of study is one of the major topics in German higher education. The average standard duration of a *Diplom* programme at the universities is about 4.5 years (9 semesters). According to a study of the German Wissenschaftsrat,[11] students in the fields of H&S and S&T are extending the duration of their study the most (+ 1.7 years and + 1.66 years respectively). In medicine and fine arts, graduates stay on average closest to the standard duration of study (+ 0.3 years and + 0.9 years respectively). Students in B&L are positioned mid-way (+ 1.3 years).

At *Fachhochschulen* the standard duration of study is four years, which in most disciplines is not exceed by more than half a year.[12] In engineering, architecture, arts and commerce, graduates use on average between one and two additional semesters to complete their study.[13]

11 Fachstudiendauer an Universitäten 1989, Wissenschaftsrat, Köln, 1992

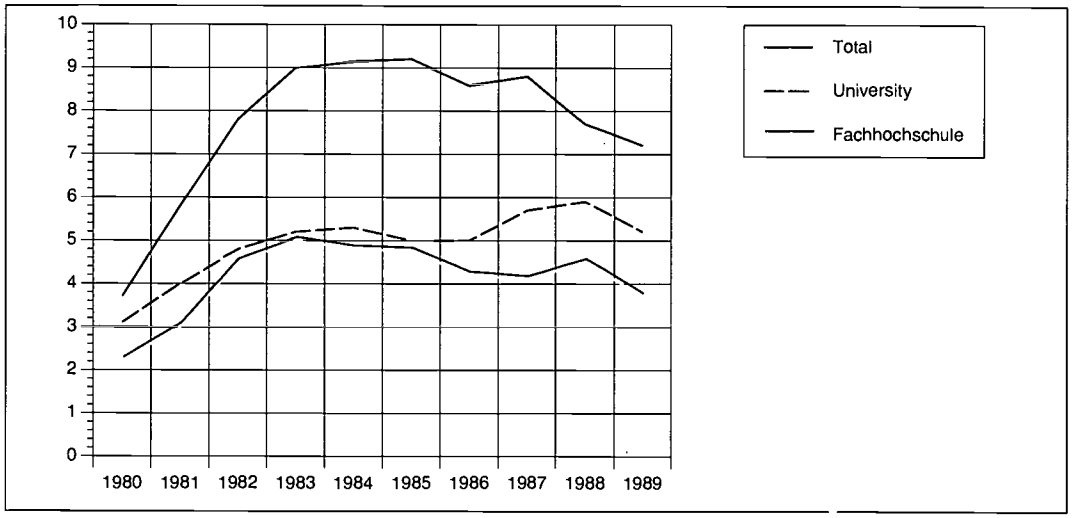
12 Source: Empfehlungen zur Entwicklung der Fachhochschulen in den 90er Jahren, Wissenschaftsrat, 1991

13 Fachstudiendauer an Fachhochschulen 1989, Wissenschaftsrat, Köln, 1992

2.3.6 Unemployment[14]

On average, graduates from higher education have a better relative labour market position than most other labour force groups. The unemployment rates for university graduates show a steady increase in the past years due to the growing number of higher education graduates.

Figure 12 Rate of unemployment (in percent)



source: M. Tessaring, Germany, in: *From Higher Education to Employment*, vol I, OECD, Paris, 1992

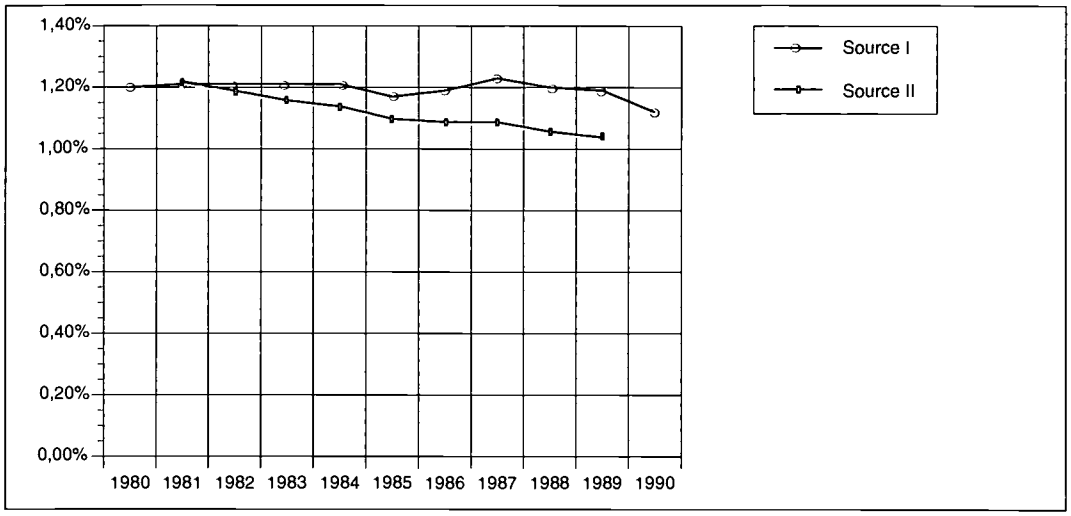
Broken down by discipline, the highest rate of unemployment is to be found in teaching, languages, arts, psychology, sociology and medical science. Graduates in engineering, economics and law enjoy high levels of employment. For *Fachhochschulen,* unemployment rates are high in social work and low in engineering and economic subjects.

14 See M. Tessaring, Germany in: *From Higher Education to Employment*, volume I, OECD, Paris, 1992

2.3.7 Financial resources

In 1992, a study was published on public expenditure on higher education in all twelve Member States (Kaiser et al., 1992). Based on information from national correspondents, an overview was given of public expenditure on higher education from 1975 till 1988. The information on budgets and financial resources in Germany available from other sources is not fully comparable to the information provided in this study.[15] Clearly the concepts and definitions used vary. However, the trend shown in figure 13 indicates that expenditure on higher education (as a percentage of GDP) decreased at the end of the 1980s.

Figure 13 Public expenditure on German higher education as a percentage of GDP



sources: I Federal Ministry of Education and Science, *Basic and Structural Data*
II *Public Expenditure on Higher Education*, Kaiser et al.

5 Time series on expenditure on higher education apparently differ in their year of reference. Inconsistencies between both time series are reduced if the time series of the EC-study is forwarded one year.

2.4 FRANCE

2.4.1 The higher education system

The French system of higher education has a rather complex structure. Two main sectors can be distinguished: a university sector and a non-university sector.

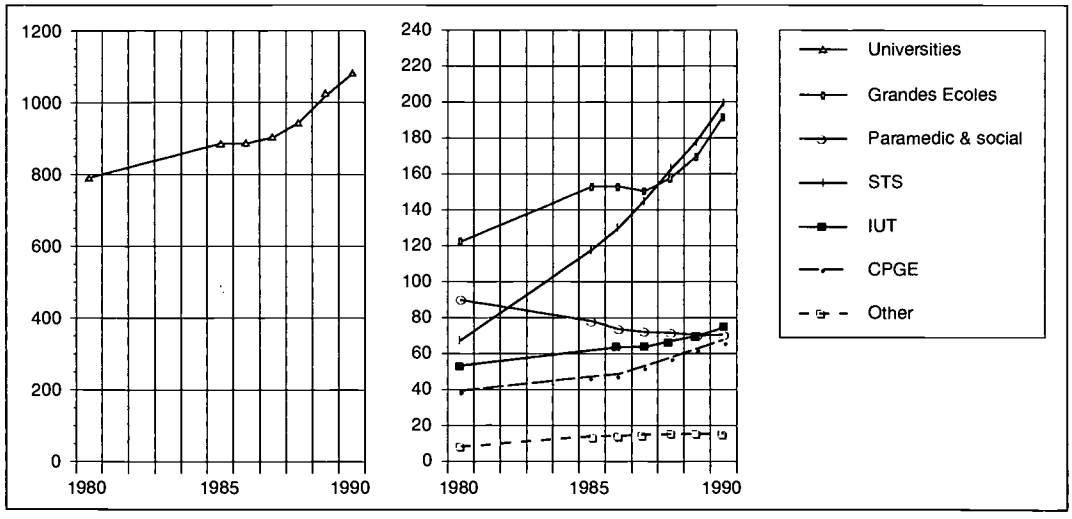
The non-university sector consists of two main types of institutions or courses, both selective in admission. The first type is the 'schools for higher education' or *Grandes Écoles*. These institutions select their students through a highly selective competition. To participate in such a competition two years of preparatory study are required after the baccalaureat, mainly in special preparatory classes (*Classes Préparatoires aux Grandes Écoles*: CPGE). The second type of non-university courses is the *Sections de Techniciens Supérieur* (STS). The two year courses, located at *Lycées*, are very vocationally oriented and lead to the *Brevet de Technicien Supérieur* (BTS). In addition to these two main streams is a number of schools that are oriented to a specific profession, e.g. social workers, and professions in the health services.

The university sector consists of two parts. The first part is the *Instituts Universitaires de Technologie* (IUT). The IUT are more or less autonomous components of the universities. Entrance to their vocationally oriented two year courses is selective. The courses lead to the *Diplôme Universitaire de Technologie* (DUT). The second and main part of the university sector is the universities. The 'normal' university courses start with two year programmes (first cycle) leading to the DEUG degree. There is no entrance selection to this first cycle. The holders of the DEUG are entitled to continue higher eduction in the second cycle, which consists of two stages. The first stage leads to the *Licence* degree while stage two leads to the *Maîtrise* degree. Beside this 'normal' structure, a wide variety of specialised courses are provided (*Magistère*, MSG, MIAGGE, DEUST, IUP etc.). Access to these courses (with the exception of DEUST) is highly selective. They are set up to fulfil the need for highly educated specialists and have a clear link with industry. The structure of university courses is completed by the third cycle courses. There are two types, both selective. The first type is vocationally oriented (DESS) and the second is a preparation for a scientific career (DEA).

2.4.2 Enrolment

Total enrolment in French higher education has increased considerably since 1980 (44 %). Especially in STS the growth has been enormous. The universities however remain the largest component of the system.

Figure 14 Enrolment in French higher education (*headcount, x 1000*)

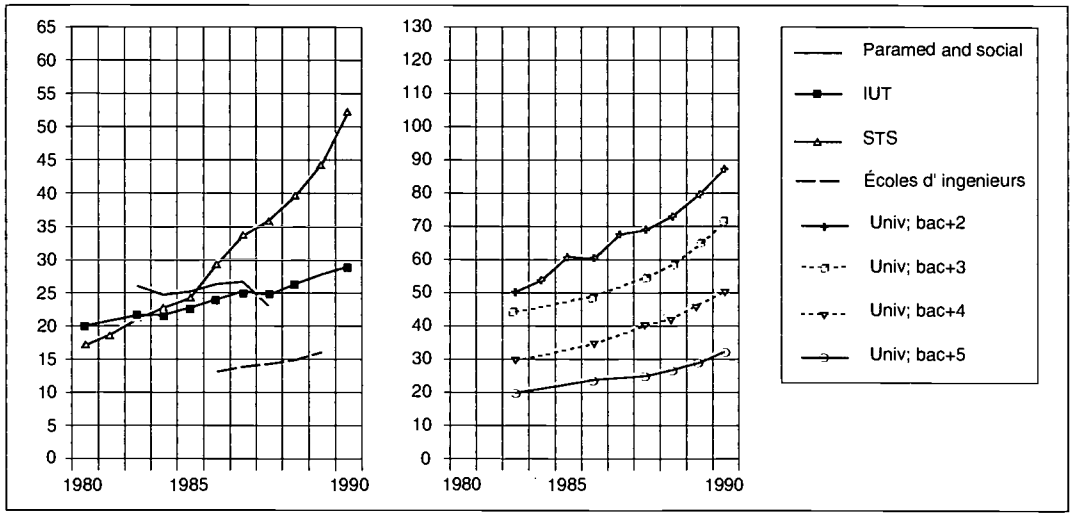


source: Repères & références statistiques
note: Data refer to France Métropolitain;
Universities: excluding IUT and ENSI;
Others: including *Préparations intégrées*

2.4.3 Graduates

Because of the variety and the 'multi-layered' character of higher education courses, there is a relatively high number of graduates. However, part of the diplomas awarded have an intermediate character; virtually all holders of the DEUG continue studying. Even the holders of 'final' qualifications like the DUT tend to continue studying in increasing numbers (42.8 % in 1990).[16] Because of this phenomenon, the numbers of diplomas awarded may be high compared to other EU-Member States.

Figure 15 Diplomas granted in French public higher education* (*x 1000*)



sources: Repères et Références Statistiques
Note d'Information 92.18 , 92.27 and 92.28
Tableaux statistiques
Lamoure-Rontonpoulou, J. and J. Lamoure (1989) table 9

note: * not including medical disciplines and pharmacy

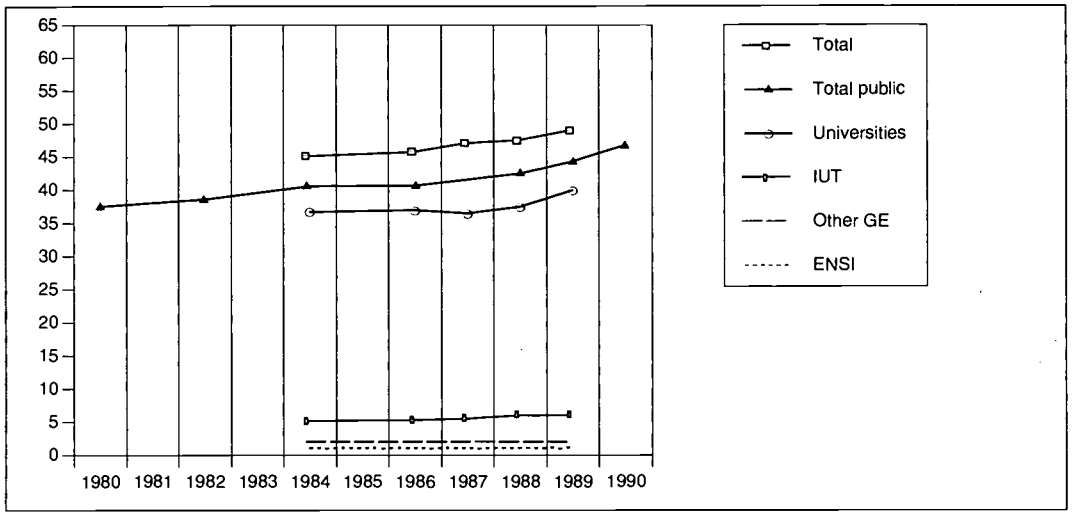
The number of diplomas awarded also shows a steady increase during the 1980s. Most (university) diplomas are awarded in the disciplinary field of H&S but with the fast increase in the number of diplomas in S&T, a clear shift becomes visible. In IUT most diplomas are awarded in S&T, although there is a substantial part of the diplomas awarded in B&L (± 30 %). There is very little information on the number of diplomas awarded in the *Grandes Écoles*. CPGE do not award diplomas.

16 Source: Note d'information 92-27, table V

2.4.4 Teaching staff

The number of staff presented below provides a rather rough picture of the situation in French higher education. Because of the diversity of the system and the administrative regulations concerning personnel in the different types of institutions, it is difficult to compile comparable information on staff numbers. The figure does not include data on staff of CPGE and STS (since they are part of secondary education institutions) nor does it include personnel paid for by the institutions themselves (through the 'supplementary hours funds'), nor personnel of certain *Grandes Écoles* that are not under the realm of the Ministry of Education.

Figure 16 Teaching staff in the major parts of French higher education (*in fte*)



sources: Repères & références statistiques
Note d'Information 91-48

note: Total public: Evolution des effectifs, en fonction, appartenant à des catégories d'enseignants de l'enseignement supérieur, France-public;
Universities include medical courses

2.4.5 Duration of study

Information on the duration of study in higher education is scarce. Some special studies have been completed of which the studies of CEREQ are the most used. In these studies the duration of study and drop-out are examined for the first cycle only, i.e. for DEUG, IUT, STS, CPGE, and paramedical and social schools. In the first cycle at universities only 29 % of the students obtain the DEUG after two years, which is the regular length of the programmes while 56 % finish the DEUG after three years, which is the maximum duration. In the CPGE no diplomas are awarded. Students may repeat the last year but no information is available on how many students use this (limited) option. Two thirds of the IUT students obtain their diplomas after the regular two years' study. About 75 % of the students have got the DUT after three years. The success rate after two years is a little lower at the STS: 70 % obtain their BTS after two or three years. The duration of study in the paramedical and social sector differs, according to the discipline. The number of students repeating one of the years is marginal (1 % to 5 %).[17]

In the early 1980s a study was undertaken regarding the actual duration of study in second cycle university courses.[18] The graduates from the 1978 generation completed their standard four year *Maîtrise* programme in 4.9 years (on average).

17 Source: Ministero dell'Università e della Ricerca Scientifica, AF Forum, L'istruzione superiore in cinque paesi: analisi di caso, (vol II), Roma, 1992

18 Teichler, 1989, p. 31

2.4.6 Unemployment[19]

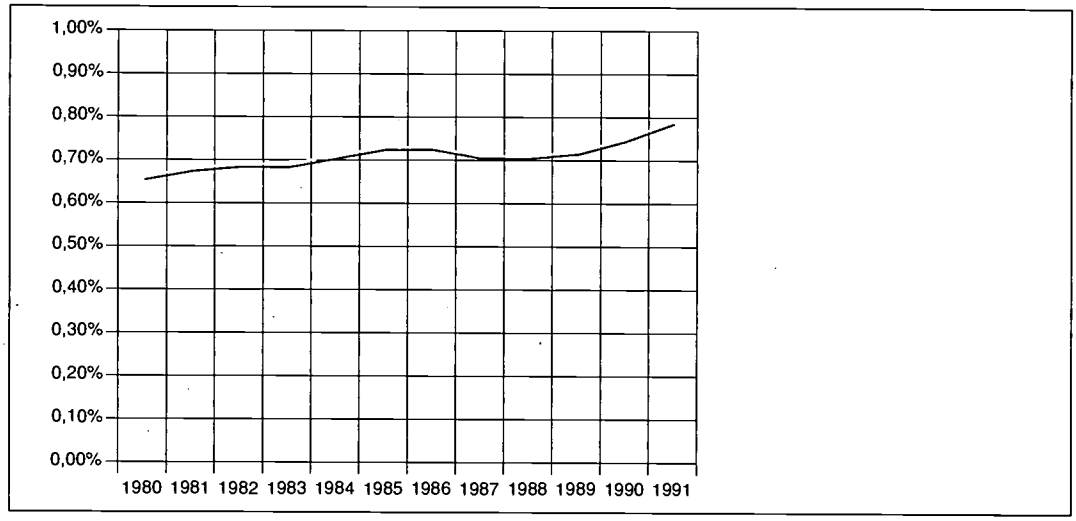
One of the indicators for the success of graduates from particular courses is the duration of unemployment after graduation. In France in 1987, 26 % of all male higher education graduates and 35 % of female graduates had not succeeded in finding a job. After one year these percentages decreased significantly: 9 % of the male and 13 % of the female graduates still were unemployed.

In the *Grandes Écoles* the unemployment rate after one year is lower than the average, which may be related to the highly selective character of these schools and their professionally oriented courses. Graduates from universities, in particular those who have graduated in B&L have relatively more trouble finding employment.

2.4.7 Financial resources

Public expenditure on higher education seemed to stabilise at the end of the 1980s but budget data for 1990 and 1991 show a substantial increase.

Figure 17 Public expenditure on French higher education as a percentage of GDP



source: Le compte de l'education 1985-1990
note: Data refer to 'financement des activités d'éducation et des achats de biens et de services liés à l'éducation; dépenses des financeurs finaux; dépenses totales (courantes et en capital) enseignement superieur; administration publique & entreprises & ménages'

19 Source: Alain Charlot, Francois Potties, France in: *From Higher Education to Employment*, vol I, OECD, Paris 1992

2.5 GREECE

2.5.1 The higher education system

Although Greece has a long tradition in the fields of philosophical and scientific thinking and teaching, its first 'modern' university was not founded until 1837. In addition to the university sector, a non-university sector is also part of the present Greek higher education system. There are 17 university level institutions for higher education in Greece, 8 of which have been established since 1964. University level institutions (*AEI*) are classified into three categories: universities, polytechnics and academies of fine arts. University courses last 4 to 8 semesters except for veterinary and agricultural sciences (10 semesters) and medicine (12 semesters). At polytechnics and academies of fine arts, courses usually take 10 semesters. The undergraduate diploma awarded is the *Ptychiou*. Besides undergraduate courses there are two types of post-graduate courses. The first type leads to a 'diploma of specialisation' after a one or two year programme. The second leads to the Ph.D.

The non-university sector consists of 11 Technical Educational Institutions, known as *TEI*. *TEI*s are relatively new institutions as they were introduced in 1983 as a replacement for *KATEE*s. The vocationally oriented courses take 7 to 8 semesters to lead to a diploma: the *Ptychiou TEI*.

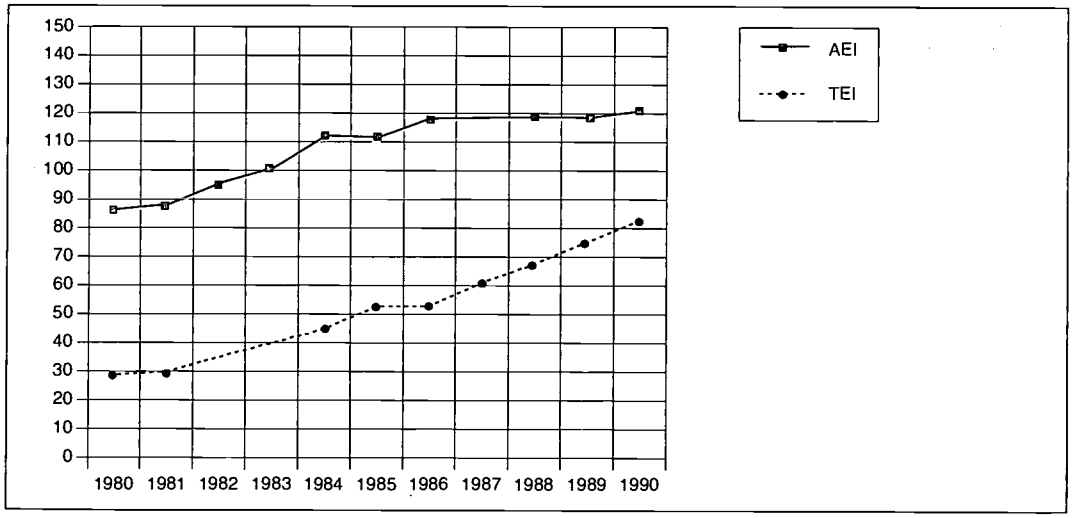
2.5.2 Enrolment

Enrolment in the university sector (*AEI*) stabilised in the second half of the 1980s after a substantial increase in the early 1980s. Enrolment in the technological schools (*TEI*) shows a continuous increase throughout the decade.[20]

In the *AEI* sector in 1990/91, most students (39 %) enrolled in S&T. 34 % of the students enrolled in H&S, 18 % in B&L and 9 % in medicine. There is no information on the shifts within this distribution during the last ten years.

At *TEI*s in 1987, 43 % of the students enrolled in S&T courses, 30 % in B&L and 27 % in paramedical courses. This distribution has changed quite fast: in 1990, the percentage of students enrolled in paramedical courses decreased to 21 % while enrolment in S&T and B&L increased by 3 percentage points each.

Figure 18 Enrolment in Greek higher education (*x 1000*)



sources: Greek Statistical Yearbook
Greek Ministry of Education

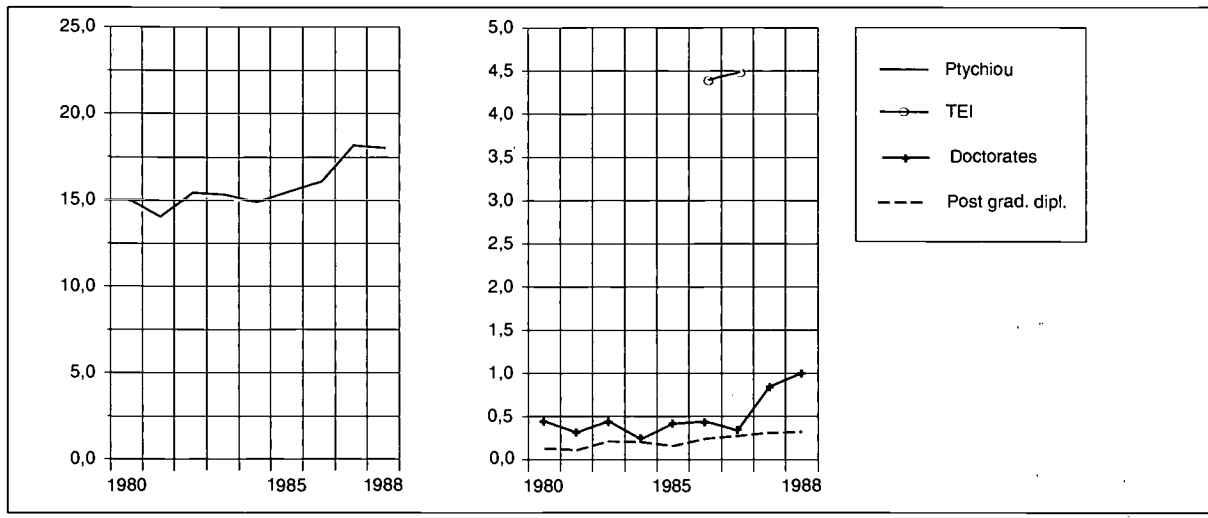
20 Sources: Statistical Yearbook of Greece, 1988
Kazamias, A.M. and A. Starida, Professionalisation or vocationalisation in Greek higher education in: European Journal of Education, vol 27, nos. 1/2, pp. 101-109, 1992

2.5.3 Graduates

The number of graduates in the university sector shows some fluctuation in the first half of the 1980s, but an overall upward trend may be discerned. On graduates in *TEI*, information is available for 1985 and 1986 only.

Most students in *AEI* graduate in H&S (40 %); 30 % in S&T, 17 % in B&L, and 12 % in medicine. For *TEI* no data on the disciplinary breakdown are available.

Figure 19 Graduates from Greek higher education (*x 1000*)

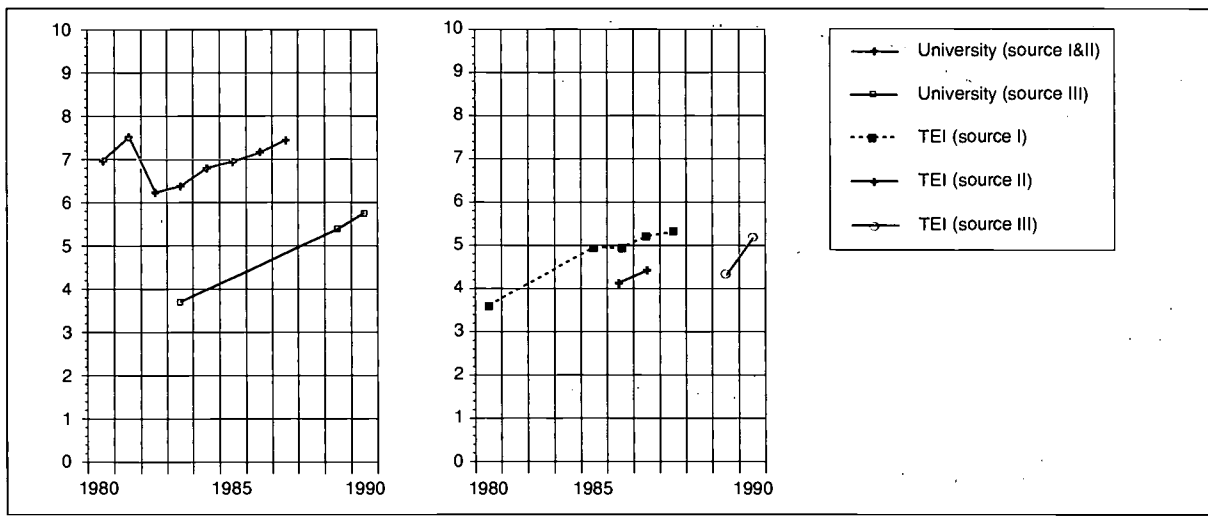


sources: Greek Statistical Yearbook
Greek Ministry of Education

2.5.4 Teaching staff

The number of teaching staff in *AEI* in 1987 has recovered from a substantial fall in teaching staff in 1982. In *TEI* the development of the number of teaching staff has been more continuous.

Figure 20 Teaching staff in Greek higher education (*x 1000*)



sources: I UNESCO Statistical Yearbook
II Greek Statistical Yearbook
III Greek Ministry of Education

2.5.5 Duration of study

Higher education institutions in the university sector provide programmes with a standard duration of 8 semesters (except for engineering and dentistry which require 10 semesters and 12 semesters for medicine). *TEI*s provide programmes of 6 semesters of course work and 1 semester of practical training. In some disciplines an extra semester of course work is required (fine arts and 'food and drink'). There is no information available on the actual duration of study.

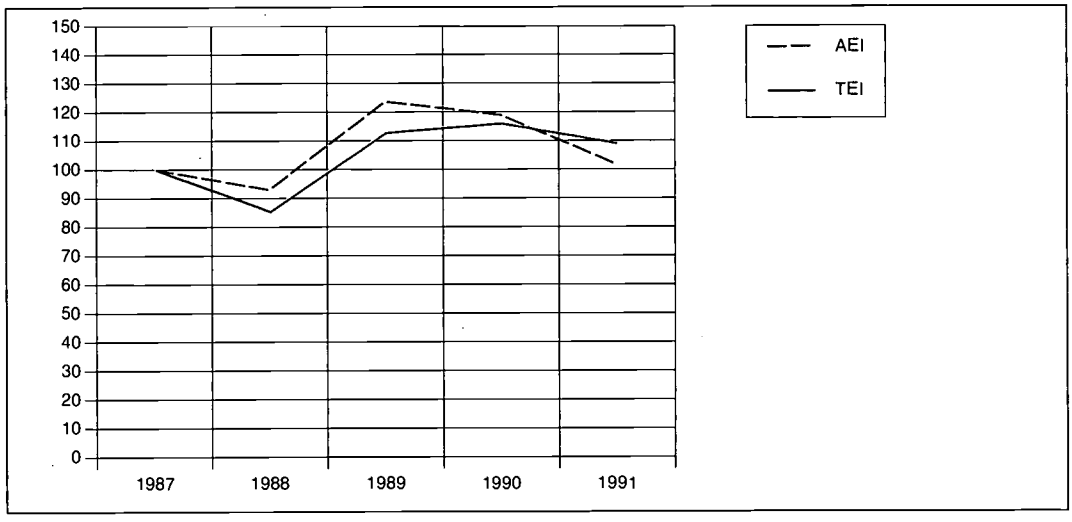
2.5.6 Unemployment

No information on unemployment of higher education graduates has been made available.

2.5.7 Financial resources

Recently, consistent time series data on public expenditure are not available. For expenditure on *AEI* only partial expenditure data are available. For *TEI*, data on total expenditure are available. Since these two data sets cannot readily be compared to each other, the figure below shows the changes in expenditure as a percentage of GDP. The figures on 1991 are budget figures, which are lower than the actual expenditure.

Figure 21 Changes in expenditure on Greek higher education (*AEI* partial data)



source: Greek Ministry of Education

2.6 IRELAND

2.6.1 The higher education system

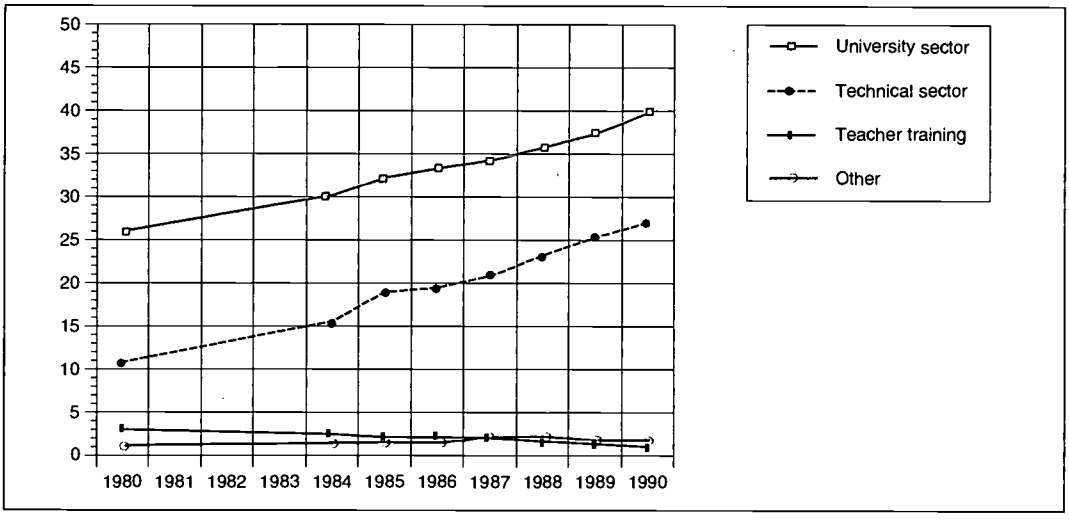
Like many other countries in Europe, Ireland has a binary higher education system which comprises a university and a non-university sector. The university sector consists of four universities: the National University of Ireland (constituent colleges: University College Dublin, University College Cork, University College Galway; recognised colleges: St. Patrick's College, Maynooth, The Royal College of Surgeons in Ireland, and three other colleges), University of Dublin (Trinity College), the University of Limerick and Dublin City University. The first degree which universities award is the Bachelor degree. The length of Bachelor courses varies between disciplines: in H&S and B&L, courses are three years; in S&T, courses are four years; in architecture and veterinary sciences, 5 or 6 years; and in medicine 6 years. There are three types of post graduate degrees that can be awarded by universities: the Masters degree (Bachelor plus 1-3 years), the Ph.D. or doctorate and higher doctorates.

In the non-university sector, the main elements are considered to be the 6 colleges of technology, 10 regional technical colleges and 10 colleges of education. These institutions award Certificates (after 2 year courses), Diplomas (3 year courses), and degrees (4 year courses). In addition there are 19 specialist colleges of art, theology, law, commerce, paramedicine, and hotel and catering.

2.6.2 Enrolment

As in most European countries enrolment in higher education has increased during the 1980s, especially towards the end of the decade.

Figure 22 Enrolment in Irish higher education (*x 1000*)



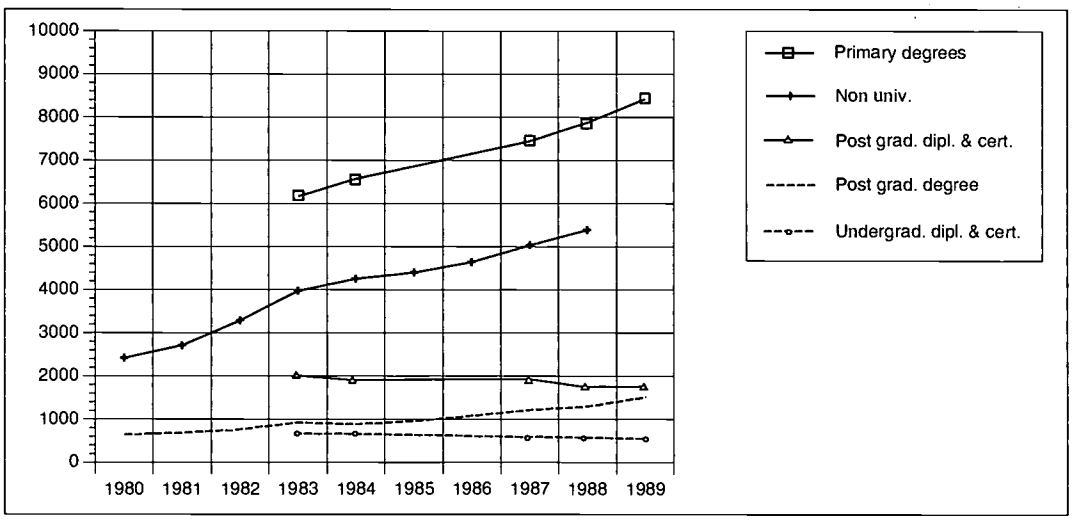
source: Student statistics
note: The university sector comprises the four universities, the National College of Art and Design, and Thomond College of Education
RTC and VTC (the technical sector) offer higher education courses as well as secondary education courses

Although enrolment in both the university sector and the technical sector has increased, a relative shift towards the 'technological sector' has occurred, whereas enrolment in teacher training has decreased dramatically (partly due to the diminishing demand for teachers on the labour market, caused by decrease in the birthrate). Within the 'technological sector' there has been a slight move from S&T (51 % in 1985, 46 % in 1989) towards H&S (14 % in 1985, 20 % in 1989).[21] Enrolment in B&L remained stable. Within the university sector, the distribution between disciplines has remained relatively stable during the period 1977-1987: S&T 32.6 %, H&S 40.3 %, B&L 16.4 %, and medicine 10.7 %[22] (the latter has been the only sector in which there has been a significant decrease in enrolment).

2.6.3 Graduates

The breakdown by discipline shows that most university sector students graduate in the H&S (42 %), followed by S&T (30 %), B&L (20 %), and medicine (8 %).[23] The information available on the breakdown by discipline in the technological sector is not readily available. However, from the data for the total higher education population it can be deduced that about three fifths of the students in the technical sector graduate in S&T and the rest of the graduates are spread more or less evenly between H&S and B&L. For all higher education graduates a shift from H&S towards S&T (and to a lesser extent business and law) can be seen.

Figure 23 Graduates from Irish higher education



sources: UNESCO, Statistical Yearbook
Clancy, P., 1991

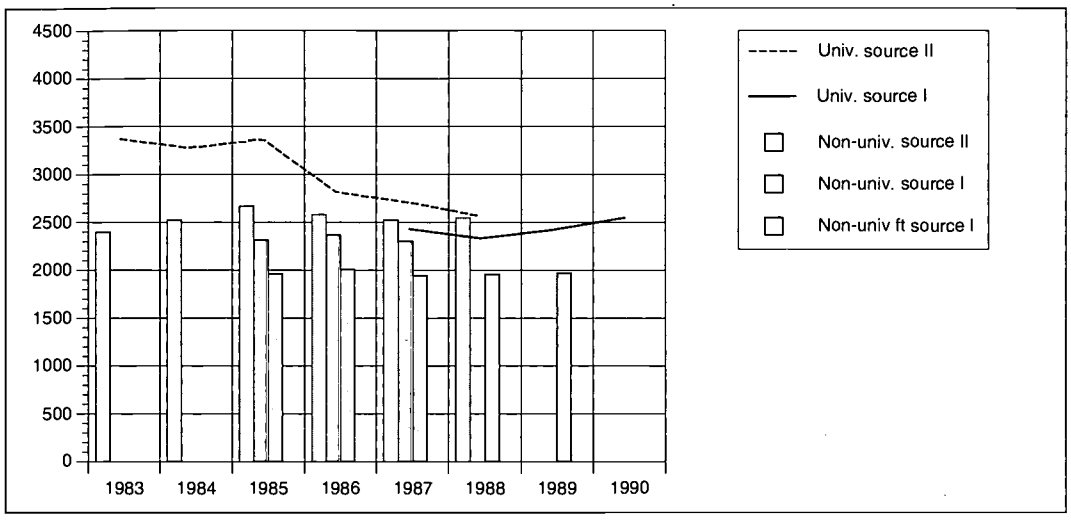
21 Source: National Council for Educational Awards and the Higher Education Authority

22 Source: Clancy, 1991

23 Year of reference for this breakdown is 1987, source: Clancy 1991

2.6.4 Teaching staff

Figure 24 Teaching staff in Irish higher education (*in fte*)



sources: I National Council for Educational Awards and the Higher Education Authority
II UNESCO, Statistical Yearbook

The two data sources are not strictly comparable. However, a downward tendency in fte teaching staff in the 1980s, and an increase at the end of the 1980s can be discerned from both data sets. For the non-university sector, no recent time series analysis on fte teaching staff can be made since data on part-time teaching staff are not available for all years. The level of teaching staff in the non-university sector is higher according to the Statistical Yearbook of UNESCO than according to the information from the National Council for Educational Awards and the Higher Education Authority. However, from both sources the same pattern emerges: the level of teaching staff has remained stable during the 1980s.

2.6.5 Duration of study

The standard duration of first degree courses is three or four years, with exceptions in architecture and veterinary medicine (5 years) and medicine and dentistry (5-6 years). There is very little information on the actual duration of study in Ireland but estimates are made in which the average actual duration is close to four years. The duration of diploma courses in the technical sector is three years.

2.6.6 Unemployment

The results of a survey repeated in different years among graduates of university sector institutions and *RTC*s show that the unemployment rate of graduates[24] has fluctuated tremendously during the second half of the 1980s. The table below shows also that graduates in H&S suffer a relatively high unemployment rate whereas graduates in medicine and B&L enjoy a relatively low unemployment rate.

Table 2.6.1 The proportion of primary degree recipients seeking employment by field of study in percent.

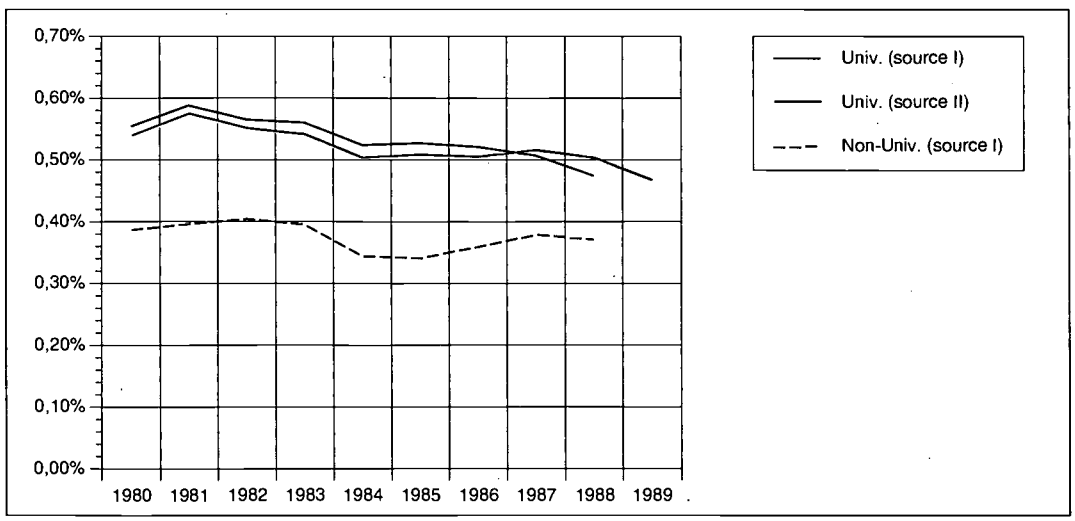
	Total	Science	Agricul-ture	Food sciences	Engineering	Arts and social sciences	Commerce	Law	Med.	Vet. med	Numbers
1985	9.1										3106
1986	9.7										3379
1987	6.2										3726
1988	4.9	4.9	4.2	5.1	4.7	9.2	3.4	2.8	0.2	4.6	4035
1989	4.9	4.1	8.7	2.4	3.3	10.9	3.6	0.9	-	-	4081
1990	8.5	9.7	13.3	4.0	6.9	17.1	6.9	2.4	-	-	4153

source: *First destination of award recipients in higher education*, HEA, Dublin, 1991

2.6.7 Financial resources

Recent information on financial resources is available only for university sector institutions. Two sources are available: the previously mentioned study on public expenditure on higher education (Kaiser et al., 1992) and Student Statistics, published by the Higher Education Authority (*HEA*). Both sources show a decrease in expenditure on university education in the early 1980s, followed by a period of stabilisation in the mid 1980s. The data from the first source indicate a continuation of the decrease in the late 1980s, but the data from Student Statistics show a further increase in 1987 and a decrease thereafter. Although both sources are inconsistent for the late 1980s, they both indicate that current public expenditure has fallen towards the end of the decade. For the non-university sector, only data based on the report by Kaiser et al. are available.

Figure 25 Current public expenditure on higher education in Ireland as a percentage of GDP



sources: I Kaiser et al., *Public expenditure on higher education*
II *Report, accounts, & student statistics*, The Higher Education Authority

24 The proportion of primary degree recipients seeking employment

2.7 ITALY

2.7.1 The higher education system

The Italian system of higher education, which consists primarily of universities, has been categorised as a conservative system, whose characteristics are the result of a compromise between a centralised approach, with a strong regulation regarding enrolment, courses, certificates, and steering, and an institutional approach with the locus of power at the institutional level, incorporating substantial freedom in teaching and research.

At the universities, until recently, only one degree, the *Laurea*, could be awarded after four or five year courses (medical courses take 6 years). While most universities are state universities (44), eleven were established by private institutions or organisations. They were approved by the state because their statutes, curricula and examinations meet the level of the state universities.

In the 1980 education reform law, a diversification in levels of curricula and degrees was mandated. A higher level, the '*Dottorato di ricerca*' which is comparable to a Ph.D. was created in 1980 as well as post-*laurea* schools of specialisation. Pre-*laurea* schools for special purposes, training middle-level professionals such as nurses, were created in 1982. These schools, leading to the *diploma*, can be considered post-secondary institutions attached to universities. In the higher education law of November 1990, short university courses (2 to 3 years) were introduced, leading to a 'primary level diploma'. By 1992, few universities had started such courses.

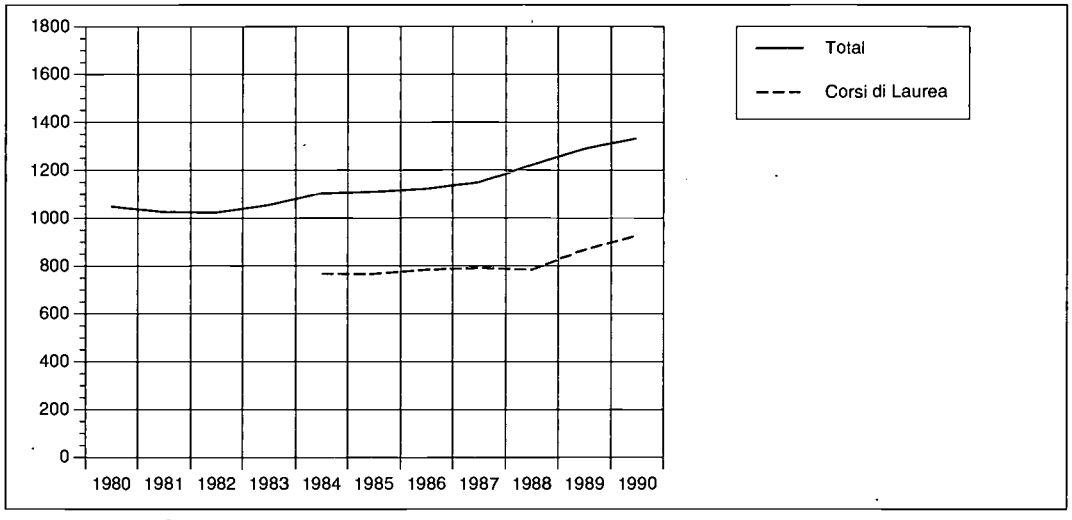
Other post-secondary education is provided by a few institutions for fine and applied arts and an institute of physical education. The duration of these courses varies but in general they take three years.

2.7.2 Enrolment

Enrolment in Italian higher education increased during the 1980s, especially towards the end of the decade: 21 % from 1984 to 1990. However, these data tend to overestimate the student population given the large number of dropouts and first-year 'phantom-students' who do not sit examinations and who do not attend university.[25]

Broken down by discipline, enrolment is fairly evenly distributed between the categories S&T, H&S, and B&L. Medicine and *Scuole diretti a fini speciale* (pre-*laurea*) comprised only 7 % of the students in 1990/91. This distribution has changed insofar as the proportion of students in medicine has decreased dramatically.

Figure 26 Enrolment in Italian higher education (*headcount, x 1000*)



source: *Censis*

[25] See A. Martinelli, Italy, in: *The Encyclopedia of Higher Education*, B.R. Clark and G. Neave (eds), vol I, p. 366, Pergamon Press, Oxford, 1992

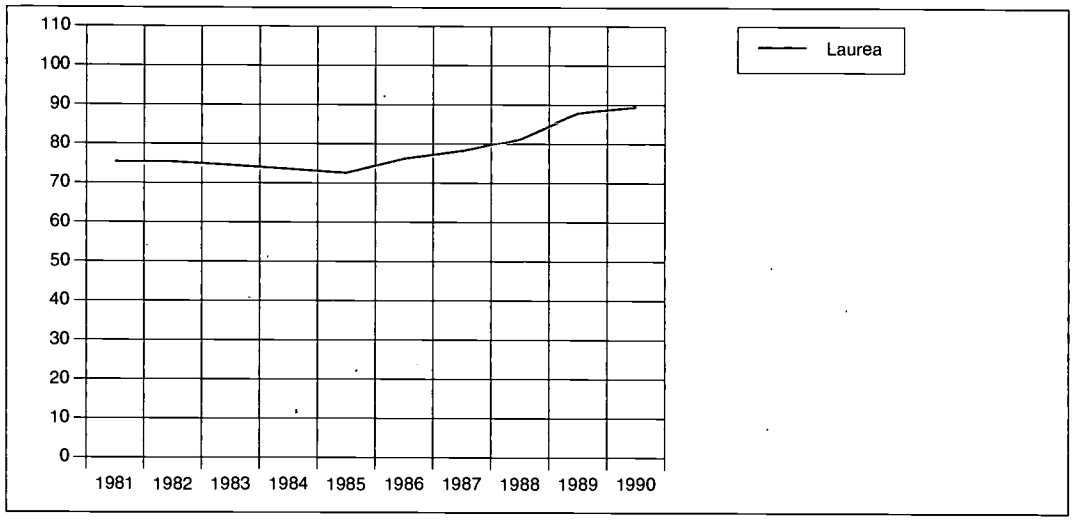
Time series data for enrolment in specialised schools and Ph.D. programmes are not available. 67,743 students were enrolled in specialised schools in 1985/86 and 9,158 students were enrolled in Ph.D. programmes in 1987/88.

2.7.3 Graduates

In Italy there are four levels of higher education degrees. The first is the *diploma*, awarded after two or three years of study. The second is the mainstream degree: the *Laurea*, which is awarded after four or five year courses. On the post-*laurea* level there are two types of degrees: the degrees awarded by the schools of specialisation and *Dottorato di ricerca* (Ph.D.). Time series data are available for the *Laurea* and *diplomi*. In 1985/86, 16,213 students graduated from the schools of specialisation (the majority of them in medicine).[26]

Growth in the 1980s suffered a minor setback in the mid 1980s from which it recovered by the end of the decade. As for the breakdown by discipline, medicine and S&T have suffered a relative loss of students, whereas H&S and B&L have gained a larger portion of the student body.

Figure 27 *Laurea* graduates in Italian higher education (*x 1000*)



source: Censis

Table 2.7.1 *Laurea*-Graduates by discipline, relative proportion (in percent)

	S&T	H&S	B&L	M	diplomi	total
1981/82	33	31	10	21	5	100
1990/91	29	39	15	13	4	100

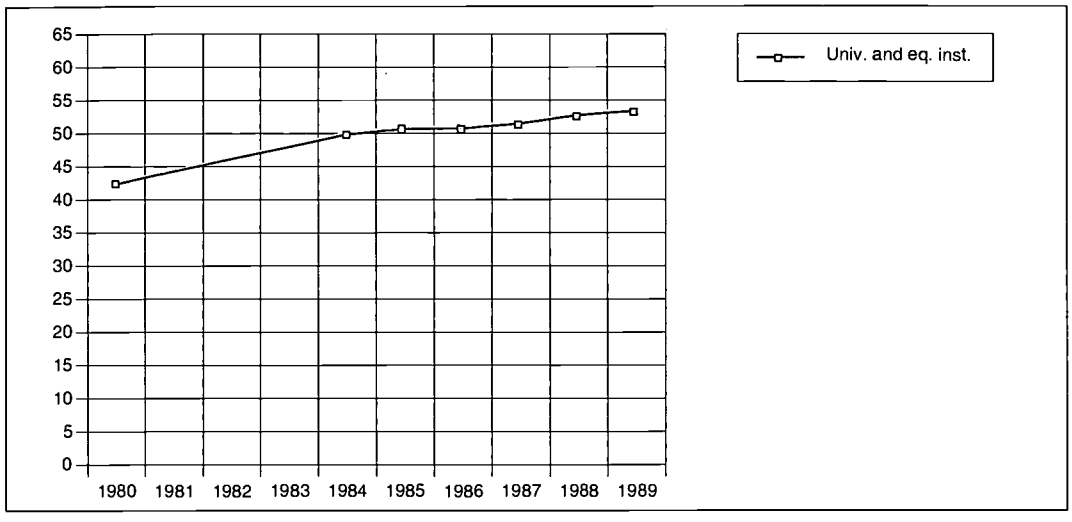
source: Censis

26 Source: Martinelli, 1992, p. 360

2.7.4 Teaching staff

According to the 1980 law, the career pattern of teaching staff consists of three levels: assistant professor, associate professor, and full professor. The number of staff has increased during the 1980s but this increase (7 %) is not as high as the increase in student enrolment (17 %).

Figure 28 Teaching staff in Italian higher education (*x 1000*)



source: UNESCO, Statistical Yearbook

2.7.5 Duration of study

As mentioned earlier, the length of courses varies, depending on level and subject of study. Actually, most students exceed the official length of courses: only 11% succeed in gaining degrees within the standard duration of study. The average time in excess of official course length in Italian higher education is about three years.[27] In medicine, the completion time is much lower than the average, in H&S it is above the average.

2.7.6 Unemployment

The unemployment rate for higher education graduates has dropped from 5.8 % in 1984 to 5.3 % in 1988 (the latest year for which statistics are available), which is remarkable since general unemployment rates have risen during that period.[28] Unemployment is highest for graduates in medicine and law and lowest for students in engineering and economics.

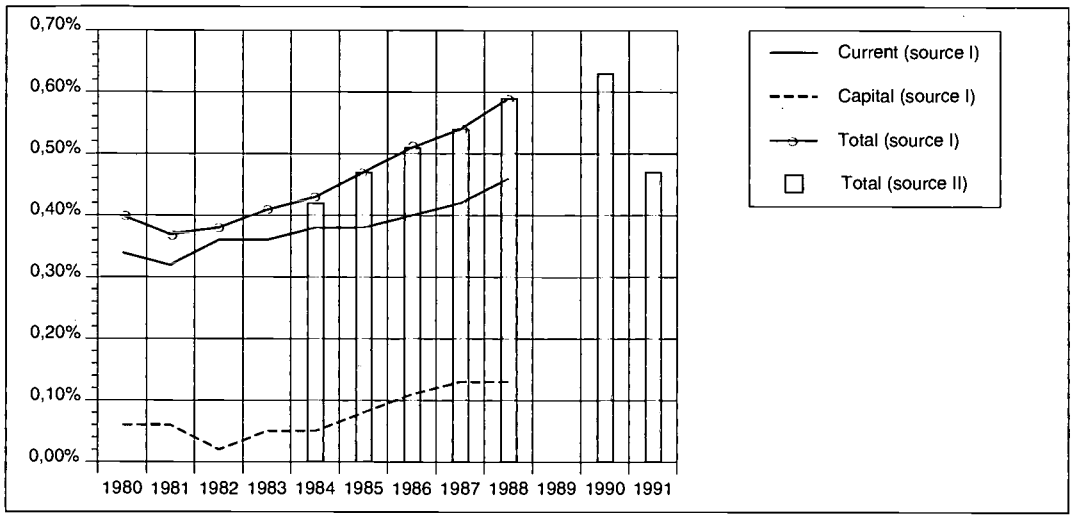
27 Teichler, 1989

28 Source: Martinelli

2.7.7 Financial resources

The data from the Censis report[29] coincide with the data provided in the EC-study. From these Censis data it can be seen that expenditure in 1990 is still higher than the previous years but, in 1991, there is a sharp drop in expenditure.[30]

Figure 29 Public expenditure on higher education in Italy as a percentage of GDP



sources I *Public Expenditure on Higher Education*, Kaiser et al.
II Censis; Spesa del Ministerio dell'Università e della Ricerca

29 Spesa del Ministerio dell'Università e della Ricerca

30 1990 and 1991 provisional figures

2.8 LUXEMBOURG

2.8.1 The higher education system

The Grand Duchy of Luxembourg does not have a completely self-contained system of higher education. The system consists of three institutions for higher education: a technological institute (*Institut Supérieur de Technologie*), a teacher training college (*Institut Supérieur d'Etudes et de Recherches Pédagogiques*), and an 'incomplete' university (*Centre Universitaire de Luxembourg*).

The technological institute offers three year programmes in mechanical engineering, electrical engineering, civil engineering, and applied computer sciences while the teacher training college provides three year programmes for primary and secondary school teachers. Both institutes have in addition to their teaching activities some research activities.

The university centre provides two types of programmes: one or two year programmes for new entrants and one or two year post-graduate programmes. The programmes for new entrants prepare students for a completion of their study abroad (in France, Belgium, Germany, Austria, Switzerland). The post-graduate programmes prepare graduates for the Luxembourg context in the field of law, business management and secondary teacher training.

The certificates awarded after the initial programmes are recognised by universities in the host countries mentioned above and the diplomas awarded by the universities in these host countries are recognised in Luxembourg.[31]

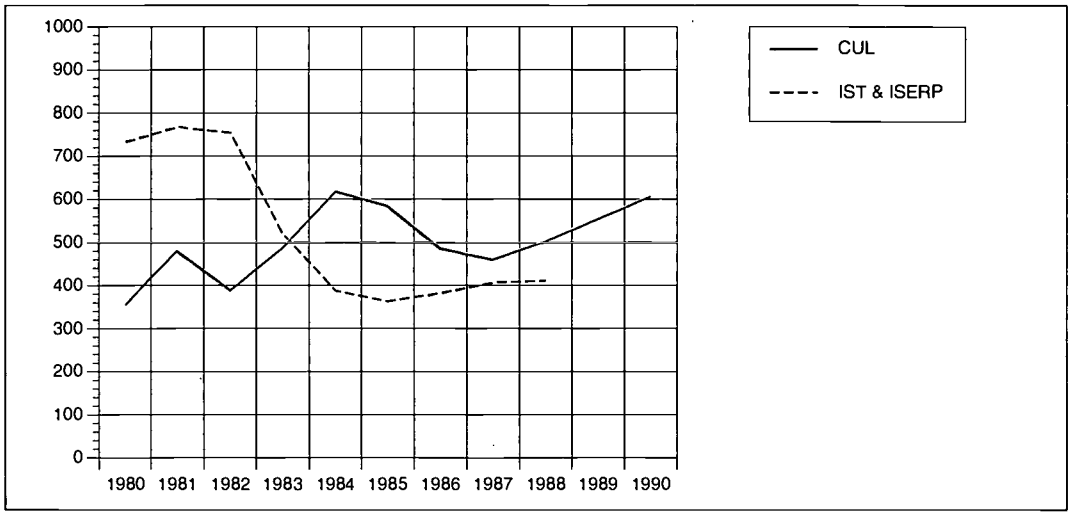
2.8.2 Enrolment

Enrolment in the teacher training college and the technological college decreased dramatically during the first half of the 1980s. After 1985 enrolment in these institutions grew slightly. About 70 % of the students enrolled in this sector are in the technological institute.[32]

Enrolment in the university centre is relatively unstable, and no general trend can be discerned. In 1986, most students in the initial programmes were enrolled in H&S (40 %) and in S&T (35 %).

Since the enrolment of Luxembourg students abroad has been accounted for in the statistics in the host countries these data are not presented here.

Figure 30 Enrolment in Luxembourg higher education



sources: Public Expenditure on Higher Education, Kaiser et al.
Annuaire Statistique
note: CUL=Centre Universitaire de Luxembourg
IST=Institut Supérieur de Technologie
ISERP=Institut Supérieur d'Etudes et de Recherches Pédagogiques

31 Source: Wirtgen, G., Luxembourg in: *The Encyclopedia of Higher Education*, B.R. Clark and G. Neave (eds.), Pergamon Press, Oxford, 1992

32 Year of reference: 1986

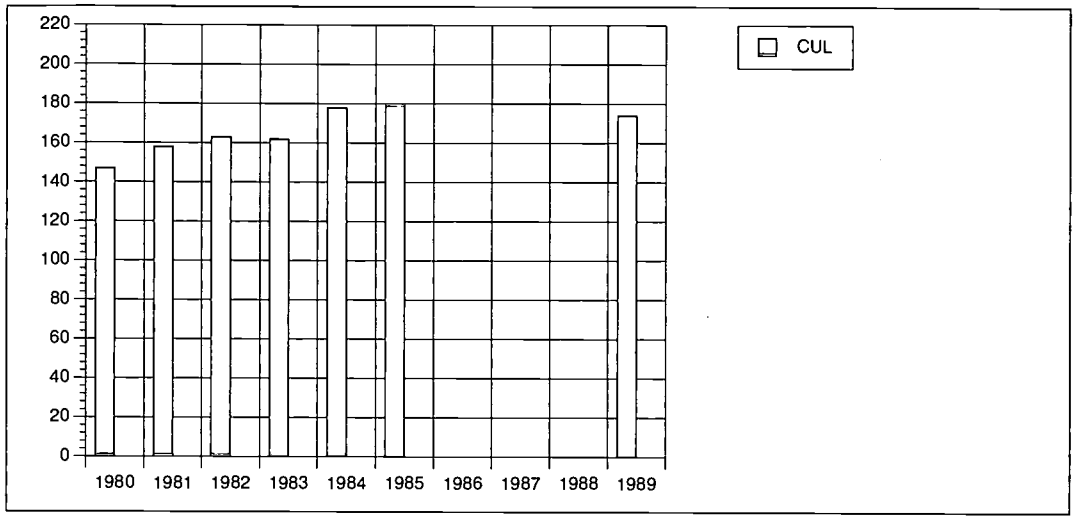
2.8.3 Graduates

No information available.

2.8.4 Teaching staff

The information available does not allow up-to-date time series analysis. For 1989 a rather rough estimate has been made.[33] Data do not represent full-time equivalents but actual number of teachers.

Figure 31 Teaching staff at the university centre of Luxembourg (*headcount*)



sources: Annuaire Statistique
Student Guide of the CUL

2.8.5 Duration of study

Although a study on retention rates has been carried out,[34] there is no relevant information available on the actual duration of study in the courses described above.

2.8.6 Unemployment

No information available.

2.8.7 Financial resources

No additional relevant information other than that presented in *Public expenditure on higher education* is available.

33 Based on the student guide of the university centre

34 Etude sur le devenir universitaire de la promotion 1981 de l'examen de fin d'études secondaires, in: L'annuaire statistique 1986-1987

2.9 THE NETHERLANDS

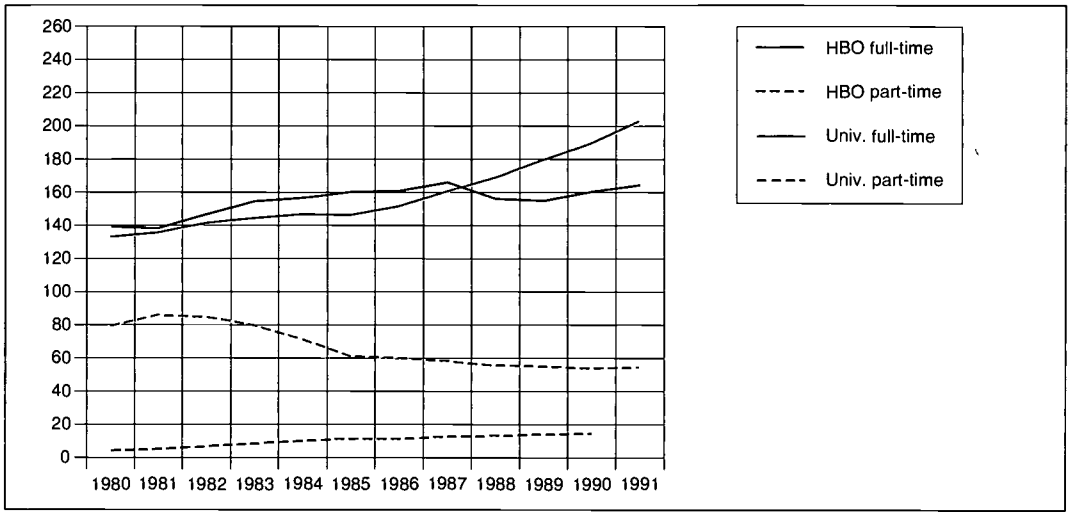
2.9.1 The higher education system

Dutch higher education consists of two sectors: the universities and institutions for higher vocational education (*HBO*). There are 13 universities in the Netherlands which provide four year courses that lead to the initial degree ('*Doctorandus*'). Courses in medicine take 5 or 6 years. This can be followed by a doctoral degree, taking approximately another four years.

There are approximately 85 institutions for higher vocational education. These institutions award a diploma - comparable to the British Bachelor degree - as their first and final qualification after a maximum of four years of study.

2.9.2 Enrolment

Figure 32 Enrolment in Dutch higher education (*headcount, x 1000*)



source: CBS

In the *HBO* sector there is a clear shift from H&S towards B&L, in both full-time and part-time enrolment. In the university sector the same shift has occurred but is less pronounced. Furthermore, enrolment in medicine has declined substantially.

Table 2.9.1 Breakdown of enrolment by disciplinary field (in per cent)

		S&T	H&S	B&L	M
HBO full-time	**1980**	29	51	9	11
	1990	29	34	28	10
HBO part-time	**1983**	6	88	2	5
	1990	9	65	18	9
university full-time	**1980**	27	39	22	13
	1990	26	35	31	7
university part-time	**1980**	-	22	78	-
	1990	4	47	40	3

source: CBS

2.9.3 Graduates

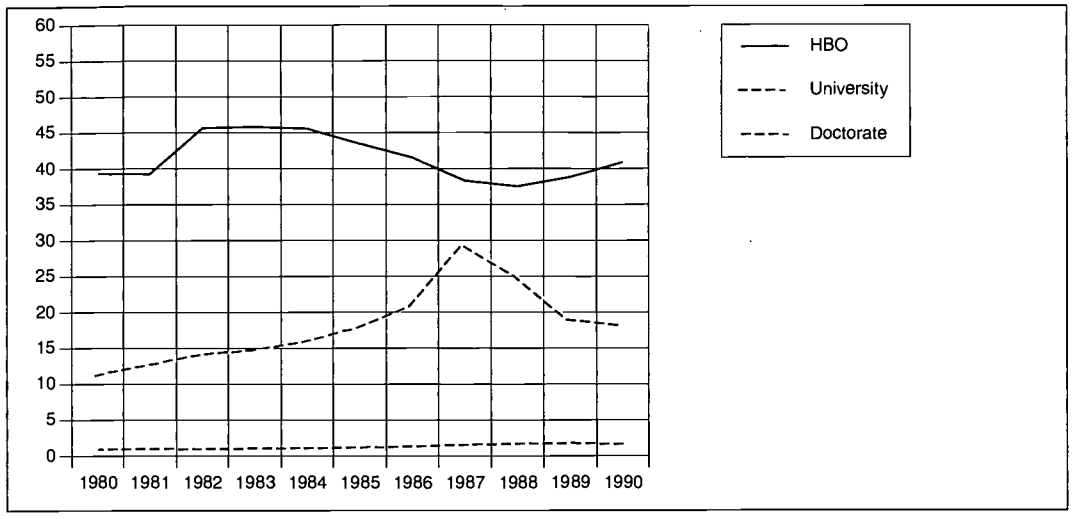
The number of graduates in *HBO* (full-time and part-time) fluctuated throughout the 1980s. In 1990 the number did not increase substantially compared to 1980. What has changed substantially is the number of students graduating in the different disciplines: there has been a shift from H&S towards B&L and S&T. The number of university graduates grew in the 1980s. There is a remarkable peak in the late 1980s, due to the university reform in 1982, in which the length of study was limited to four years; all students studying in 1982 had until 1986 to complete their study. The most remarkable shift in this decade was the decrease of graduates in medicine.

Table 2.9.2 Distribution of graduates by disciplinary field (in per cent)

		S&T	H&S	B&L	M
HBO	**1982**	18	65	5	11
	1990	25	38	24	12
university	**1980**	28	33	22	18
	1990	30	32	29	9

source: CBS

Figure 33 Graduates from Dutch higher education (*x 1000*)

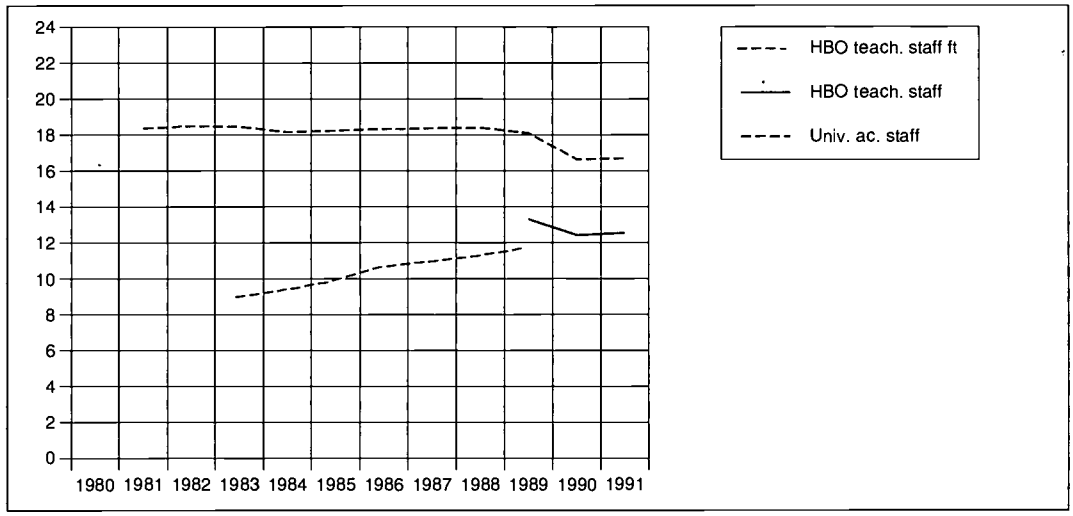


source: CBS

2.9.4 Teaching staff

The number of teaching staff in *HBO* increased by 30 % from 1983 till 1990 which is identical with the increase in the number of full-time students. Changes in the number of teaching staff in the university sector are not as smooth as in the *HBO* sector. Although the number of total academic staff remained fairly stable until 1990, there were substantial fluctuations in the different categories within the academic staff.[35]

Figure 34 Teaching staff and academic staff in Dutch higher education (*in fte, x 1000*)



source: CBS
VSNU

[35] AIOs (research trainees) are included in Dutch staff statistics, but in this comparative context this category of academic staff is excluded

2.9.5 Duration of study

The standard duration of study in both the *HBO* sector and the universities is four years. In some disciplines (e.g. medicine) the standard duration is five or six years. Partially because of the more organised way of teaching in the *HBO* sector, the actual duration of study in this sector exceeds the standard duration on average by only 0.45 years.[36]

There are no additional data on the actual duration of study at universities. However, estimates are made, based on calculations of retention rates. These calculations[37] show that the average duration of study is about 5.7 years, i.e. 1.7 years more than the standard duration of study. The changes in retention rates give the impression that the actual duration has fallen further in recent years.

2.9.6 Unemployment

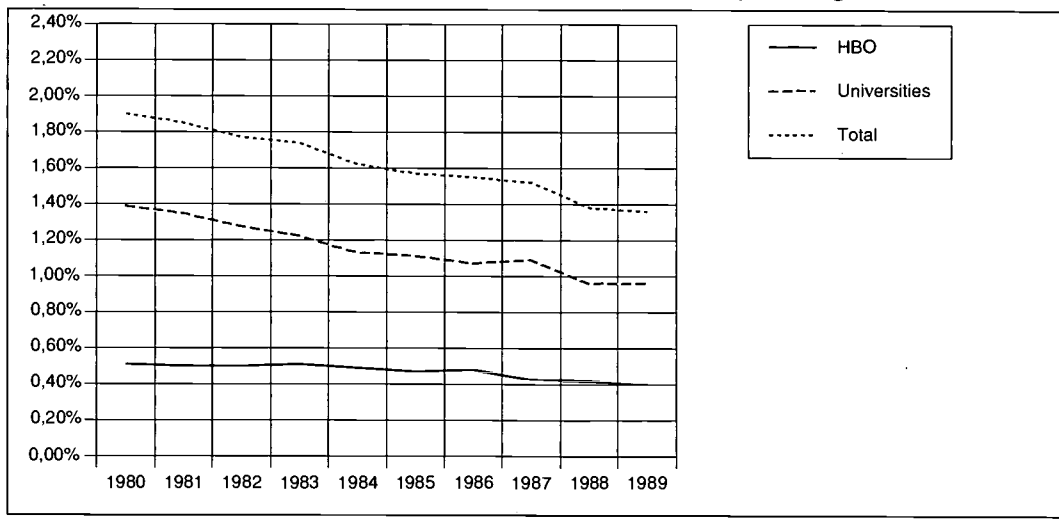
During the early 1980s, unemployment among university graduates increased substantially from a low of 3.5 % in 1980 to around 8 % in 1985. Thereafter the level of unemployment declined slightly but it rose further to 8.4 % in 1989.[38] In the early 1990s, unemployment rates tended to fall slightly again.[39] In 1989 the highest unemployment rate was in agriculture and H&S.

Unemployment rates among *HBO* graduates in 1990 were about 1 % lower than among university graduates. In 1985, unemployment among *HBO* graduates dropped but then increased again till 1988 when the number decreased. Most unemployed graduates are in the H&S field.

2.9.7 Financial resources

The downward trend in public expenditure on higher education continued throughout the late 1980s especially in the university sector.

Figure 35 Public expenditure on Dutch higher education as a percentage of GDP



source: CBS

36 Source: Ministerie van Onderwijs en Wetenschappen, *Feiten en Cijfers*, 1991, table 127

37 Bijleveld, R.J. Numeriek rendement en studieduur voor en na de invoering van de tweefasenwet, in: *Tijdschrift voor Hoger Onderwijs*, vol 8, nr 2, 1990

38 Coppens, I.M.T., The Netherlands, in: *From Higher Education to Employment*, vol III, OECD, 1992

39 Uitleg, nr 17, 1991

2.10 PORTUGAL

2.10.1 The higher education system

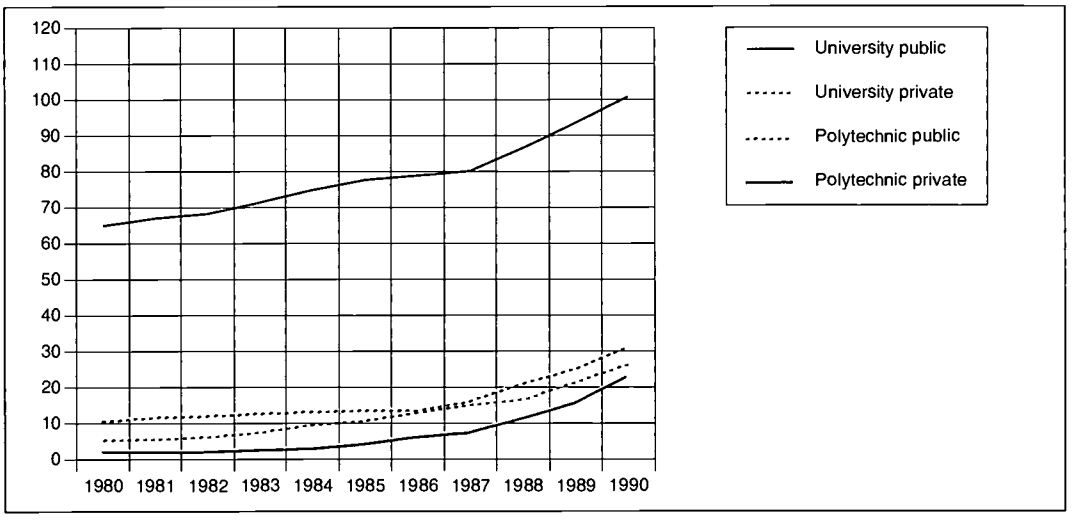
Since 1986[40] the Portuguese higher education system consists of two sectors: the university sector and the non-university sector. The university sector consists of 12 universities (*Universidades*), three non-integrated universities (*Escolas Universidades nao integradas*), five private universities and three private university centres. These universities offer three types of degrees: the *Licenciado* after a four, five (and sometimes) six year programme, the *Mestre* after another one to two year programme, and the *Doutor* for which a dissertation has to be written and a qualifying research project completed.

The non-university sector comprises 14 polytechnics (*Estabelecimentos Ensino Superior Publico Politecnico*), one 'non-integrated' and two private institutions. These non-university institutions offer a three year programme leading to the *Bacharel* degree. In some cases these polytechnics can offer another two year programme awarded with the *Diploma de Estudos Superiores especializados*, which is an equivalent to the *Licenciado*.

All degrees are awarded by the institutions themselves. Private schools are also entitled to award the degrees mentioned above but they also have to be officially validated.

2.10.2 Enrolment

Figure 36 Enrolment in Portuguese higher education (*x 1000*)



source: Ministry of Education

After the 1974 Revolution enrolment in higher education grew tremendously and continued to grow during the 1980s. Since 1977 polytechnics have been created and some upper secondary schools have been upgraded to polytechnics. But despite this increase in the capacity of public higher education, not enough places have been provided. This is one of the reasons why the private sector expanded rapidly.

Information on the breakdown of enrolment figures by discipline is not complete. Information for 1986[41] shows that one third of the students is enrolled in S&T, one third in H&S and a quarter in B&L. In the public sector, enrolment in B&L is relatively much lower (20 %) than in the private sector (50 %). In 1990/91 B&L grew by 4% whereas S&T, H&S, and medicine dropped by 1 % each.

40 Polytechnics existed already before 1986. The existing situation was given a legal base in 1986.

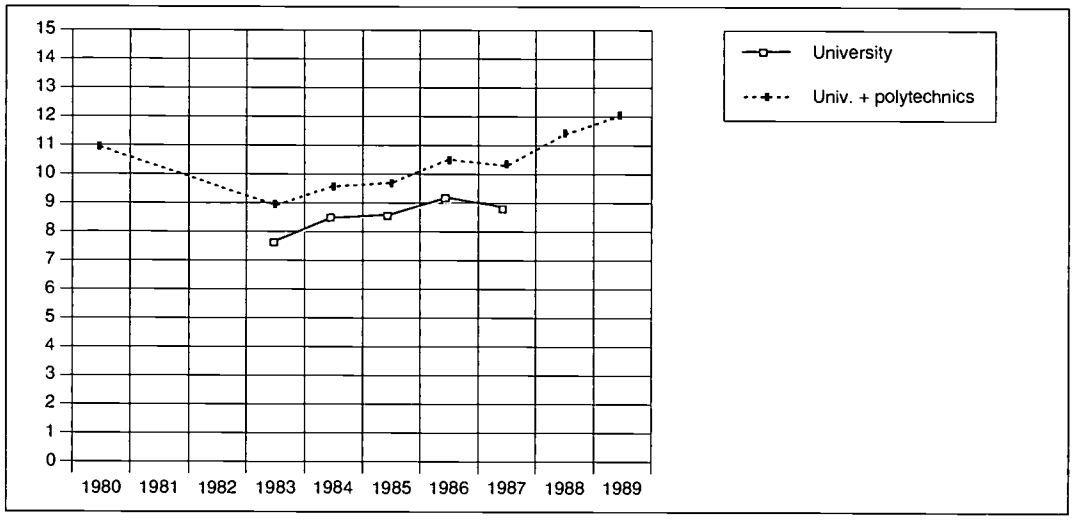
41 Source: Ministry of Education; Alunos matriculados, secugundo o nivel de programa e o sexo, por modalidades e ramos de ensino

2.10.3 Graduates

Available data on graduates do not cover the private sector. The figure indicates that the number of graduates increased since 1983. However, it has taken a few years to get back to the 1980 graduation level. It is unclear, however, for what reason(s) the 1980-1983 dip occurred.

Most students in the public sector graduate in the fields of H&S (44 %) and S&T (29 %). 19 % do so in B&L and 6 % in medicine.[42] Compared to 1980 this indicates a clear shift from medicine (21 % in 1980) to S&T (16 % in 1980).

Figure 37 Graduates in public higher education in Portugal (*x 1000*)



sources: Ministry of Education
university + polytechnics 1983-1985: M. Abecassis and M. Carmelo Rosa, Portugal, in: *From Higher Education to Employment*, vol IV, OECD, Paris, 1992, p. 39

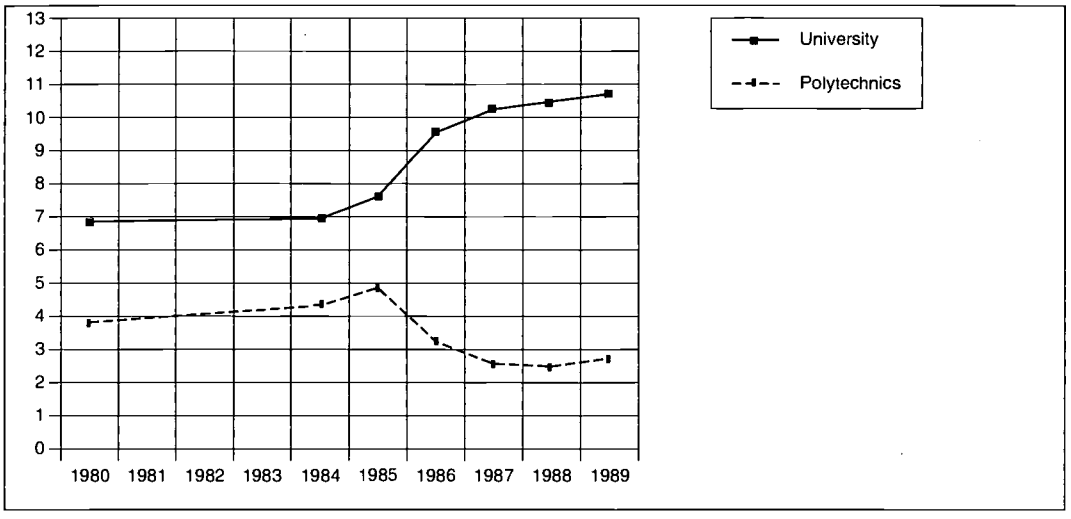
42 Year of reference: 1989, source: UNESCO Statistical Yearbook

2.10.4 Teaching staff

The number of teaching staff in higher education in Portugal stabilised during the late 1980s after a period of modest growth. If the breakdown by type of institution is made for this period of stabilisation it is evident that there have been some drastic changes. The number of polytechnic teaching staff decreased while the number of teaching staff in the universities increased.

In Portugal about 20% of the teaching staff work part-time, a percentage which used to be a little higher in universities and a little lower in polytechnics. No information is available on fte teaching staff.

Figure 38 Teaching staff in Portuguese higher education, full-time and part-time (*headcount, x 1000*)



source: Ministry of Education

2.10.5 Duration of study

The standard duration of the *Licenciado* programmes at universities varies from four years to six years:

four year programmes:	all programmes in humanities and social sciences, except teacher training, mathematics, 'general' sciences (chemistry, physics, biology, biochemistry);
five year programmes:	teacher training, architecture and urban planning, all programmes in business and law, applied mathematics, specialised sciences, engineering, pharmacy and agriculture;
six year programmes:	medicine and dentistry.

The *Bacharel* programmes of the polytechnics last three years.

There are some data on the actual duration of university study-time based on research carried out at the universities in Lisbon. The results of this study indicate that the extension of the standard duration of study is highest in the four year H&S courses (2.9 years) and lowest in the six year medicine courses and five year pharmacy courses (0.9 years). In sciences, the extension varies from 1.1 to 1.8 years. In the five year law programmes, the average extension of standard duration of study is 1.2 years.

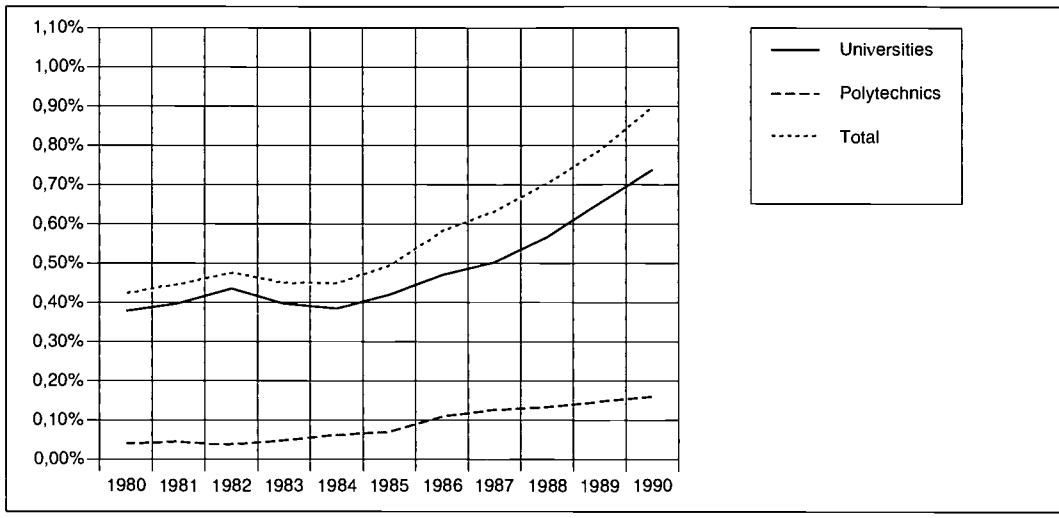
2.10.6 Unemployment

Comprehensive statistical information on the relationship between higher education and the labour market barely exists. Recently a survey among over 4000 graduates and a statistical survey on higher education students have been carried out.[43] These surveys show that only 3.9 per cent of the graduates were unemployed. Most of the graduates (more than 60 %) are employed in public services, especially education, which reflects the massive expansion of the education system.

2.10.7 Financial resources

The very strong increase in public expenditure on higher education in Portugal during the 1980s, which has been identified in the EC-study (Kaiser et al., 1992), has continued towards the 1990s, as figure 39 clearly shows.[44] However, whether this increase is sufficient to cover the costs of the expansion and modernisation of the system and the wage increases in 1990 and 1991 is in doubt. By the end of 1991 several universities threatened to shut down all operations because of the substantial underfunding by the government, which led the government to provide *ad hoc* additional funds.[45]

Figure 39 Public expenditure on higher education in Portugal as a percentage of GDP



source: Ministry of Education

43 L. Valadares Tavares, Issues and trends in higher education in: *From Higher education to Employment*, vol IV, OECD, Paris, 1992, pp. 7-20

44 Sources: 1989: calculated from the percentage of higher education in expenditure on teaching activities in 1989.
1990: special calculations of Ministry of Education

45 Times Higher Education Supplement, December 1991

2.11 SPAIN

2.11.1 The higher education system

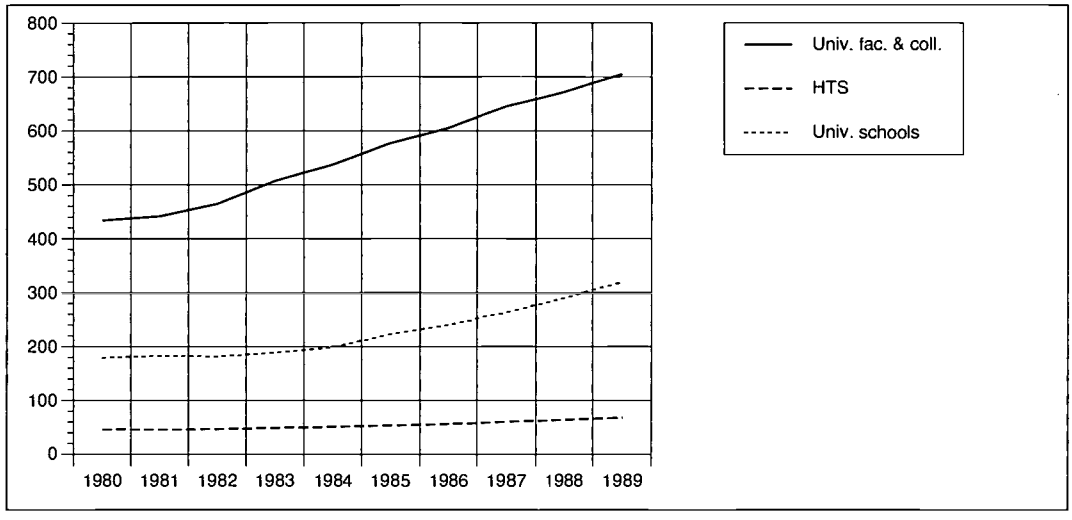
In Spain, the term 'higher education' and 'university education' are one and the same in theory and practice. It is determined by law that all higher education should be given at universities. There are four types of university institutions:

- *Facultades universitarias* (university faculties), that offer all three university levels: the first two levels (three years and two years) lead to the *Licenciado* qualification and the third to the *doctorate*;
- *Escuelas técnicas superiores* (higher technical schools) also offering three university levels, but confined to the sphere of technology;
- *Escuelas universitarias* (university schools) offering only the first level of university studies, leading to the *diplomado*. The three year courses are largely vocational;
- *Colegios universitarios* (university colleges) offering only the first level of university studies, corresponding to university faculties.

2.11.2 Enrolment

As figure 40 shows, enrolment in higher education increased substantially during the 1980s. The growth was highest in university schools, especially in the field of B&L. In university faculties, the proportion of students enrolled in medicine declined whereas the proportion of B&L increased by 10 %. At university schools, B&L and S&T both 'benefited' from the relative decrease in enrolment in H&S.

Figure 40 Enrolment in Spanish higher education (*headcount, x 1000*)

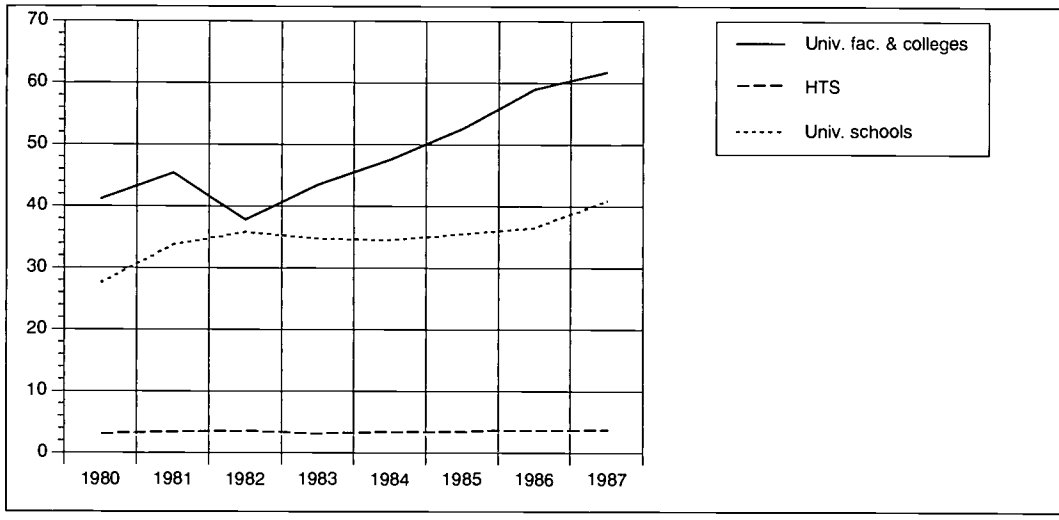


source: Anuario de estadística universitaria, Consejo de Universidades
note: For the calculation of the growth rate, enrolment in higher technical schools in 1989 has been extrapolated: 67900

2.11.3 Graduates

As figure 41 indicates, the total number of graduates increased during the 1980s: university faculties and colleges + 50 %, higher technical schools + 28 % and university schools + 49 % (year of reference 1980). In university faculties and colleges most students enrol in H&S (35 %) and B&L (32 %). The remaining students are evenly distributed over S&T and medicine (year of reference 1987). In 1982 the proportion of B&L was one third lower and in medicine twice as high.

Figure 41 Graduates from Spanish higher education (*x 1000*)

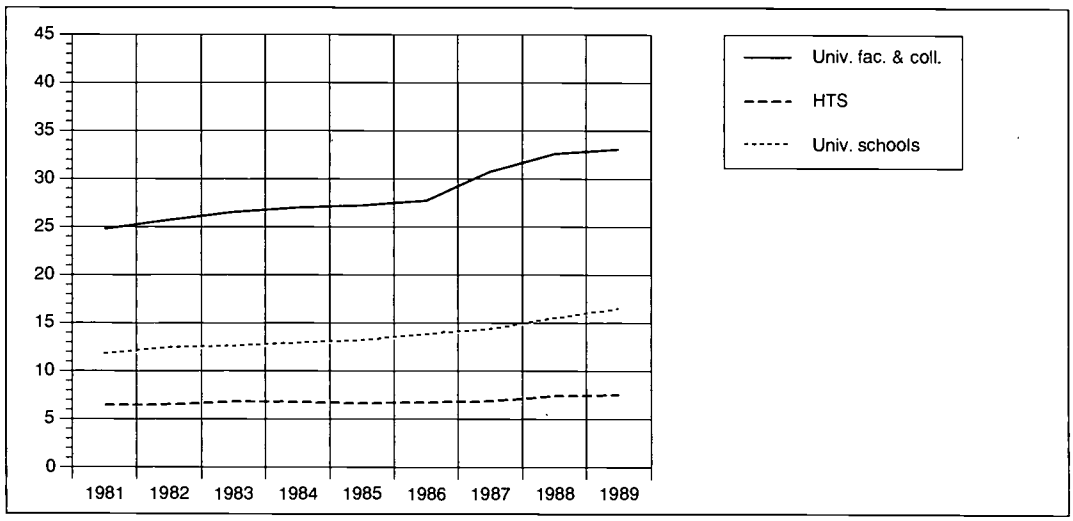


source: Anuario de estadística universitaria, Consejo de Universidades

2.11.4 Teaching staff

The number of teaching staff has grown considerably and most staff work full-time. Since the second half of the 1980s (after the 1983 education reform act) the vast majority of teaching staff has tenure. Before then, only a (small) part of the staff - the *profesores numerarios* - enjoyed permanent employment. Since 1983 there are four categories of teaching staff (university professors, tenured university teachers, university school professors and tenured university school teachers) which all have civil servant status. A very small proportion of teaching staff has short term contracts.

Figure 42 Teaching staff in Spanish higher education (*x 1000*)



source: Anuario de estadística universitaria, Consejo de Universidades

2.11.5 Duration of study

About four out of ten students repeat an academic year. While about 38 % of students in faculties and non-technical university schools repeat academic years, over 55 % of the students at the higher technical schools and almost 50 % of the students at technical university schools have to repeat some year of their course.[46] In an article on higher education in Europe[47] a rough estimate of the actual duration of study is stated as 8 years, which means that on average Spanish students extend their study by almost three years. From a more recent source, however, it appears that students in universities are taking about 1.5 to 2 years extra to complete their studies.[48] Government plans to limit the extension of the duration of study by introducing financial barriers for repeating courses, but it is not clear yet whether this is politically acceptable. Individual universities are trying to deal with the problem in their own way.[49]

2.11.6 Unemployment[50]

It is very difficult to get comparable information on employment rates for the past decade, since the major source for that information (the Labour Force Survey; LFS) was changed significantly in 1987. The LFS of 1989 showed that unemployment among higher education graduates was lower than in 1987 (13.3 % vs 16.1 %), which was lower than the overall unemployment rates (1989: 16.89 %; 1987: 20.58 %). An interesting point is that the level of unemployment among graduates of university schools in 1987 was higher than for graduates of faculties and higher technical schools, but in 1989 it was the reverse. As for the discipline breakdown, the LFS of 1987 made it clear that employment prospects were worse for teachers and graduates in humanities. Graduates in medicine and law had good employment prospects until a few years ago, but currently there are fewer job openings.

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46 A. Casanueva de Luis, Spain in: *From Higher Education to Employment*, vol II, p. 101, OECD, Paris, 1992

47 Teichler, 1989

48 Anuario de estadística universitaria 1990, Consejo de Universidades, Madraid, 1991

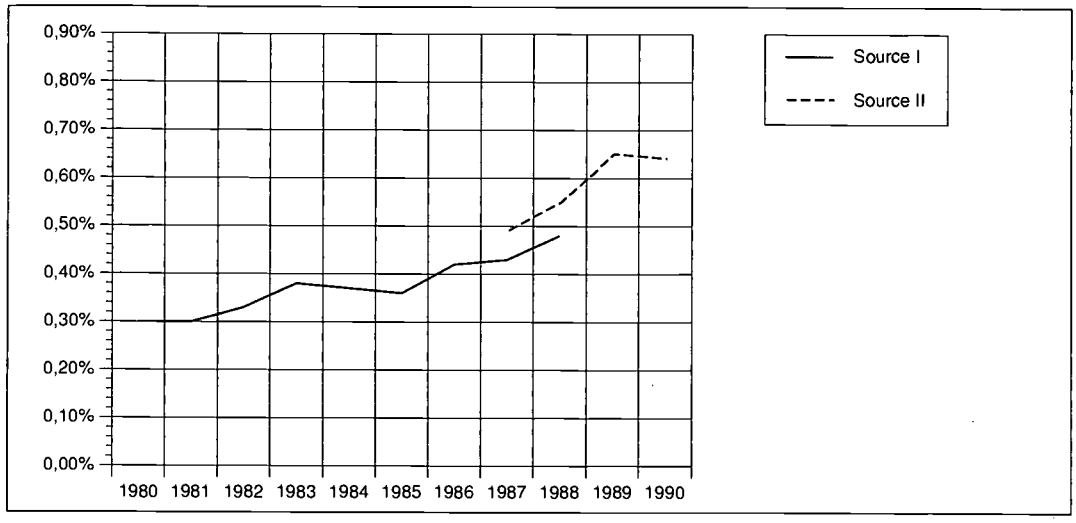
49 HBO-Journaal, dec. 1991

50 A. Casanueva de Luis, *op. cit.*

2.11.7 Financial resources

Public expenditure on higher education has increased substantially during the second half of the 1980s, although this trend appears to stop in 1990.

Figure 43 Public expenditure on higher education as a percentage of GDP



sources: I Kaiser et al., *Public expenditure on higher education*
II J.G. Mora and F. Pérez, *La financiación de la educación superior en España*, paper presented at the Workshop on Financing Higher Education, organised by IVIE, Valencia, 4-5 November 1992

note: The data for 1989 and 1990 are provisional figures

2.12 UNITED KINGDOM[51]

2.12.1 The higher education system

The British higher education system over the last 25 years has been characterised by its binary structure, consisting of on the one side the universities and on the other side the polytechnics and colleges. In the white paper 'Higher education, a framework' (1991) this binary line was abolished; polytechnics and colleges now have the right to call themselves universities.[52] However, since the binary system was in operation for the period the data presented refer to, this new situation is not taken into consideration in the following descriptions.

Although it is conventional to emphasise the binary division, by international standards most of the institutions, whatever side of the binary divide, offer a similar type of higher education.[53] Virtually all institutions offer the three year Bachelor programme and most also offer post-graduate degrees leading to master and doctoral qualifications. Some institutions offer part-time variants of these courses, particularly in the case of post-graduate awards. Polytechnics and colleges also offer some lower level qualifications, in particular the two year programmes leading to diplomas and certificates of the Business and Technician Education Council and other vocational qualifications. Although there are no rigid differences between institutions on either side of the binary divide, there are differences in emphasis: polytechnics and colleges provide more courses with a vocational or employment-related emphasis, whereas university education is more likely to be based on traditional academic disciplines and a higher proportion of post-graduate work. The Open University plays a significant part in British higher education, although the Open University is moving increasingly into continuing professional education, which is not taken into consideration in this overview.

Apart from universities, polytechnics and colleges, and the Open University, there is another sector of post-secondary education: the further education sector. This sector is not taken into consideration because as provision of higher education courses is presently insignificant.

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51 United Kingdom comprises Great Britain and Northern Ireland. Great Britain comprises England, Wales and Scotland

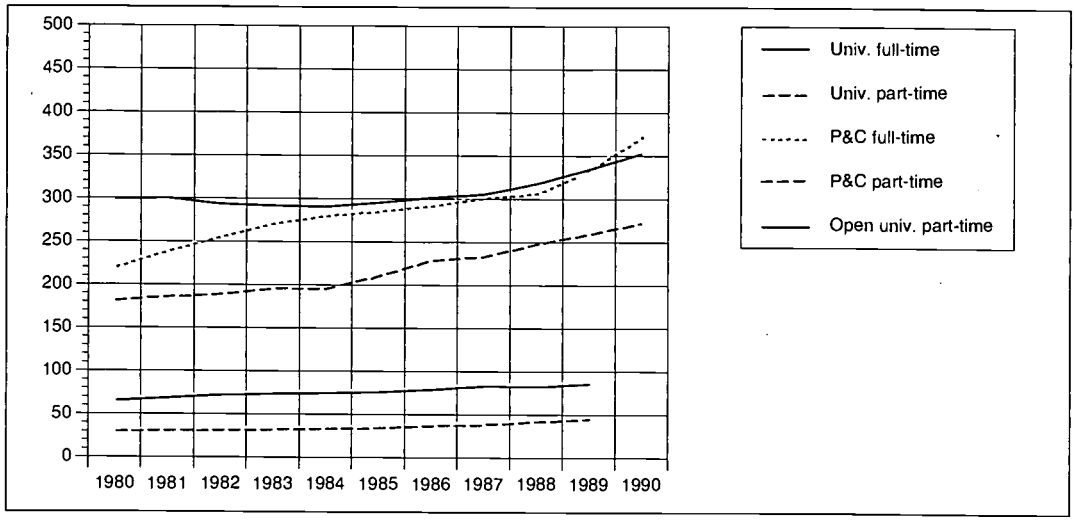
52 Legislation abolishing the binary policy was passed by Parliament in 1992

53 Polytechnics in Scotland provide only vocational courses; the binary divide is rather clear there

2.12.2 Enrolment

Students can enrol as full-time or part-time candidates. Over the last decade, the number of full-time enrolments in universities and polytechnics and colleges has more or less equalised due to the strong increase of full-time enrolments in the non-university sector.[54] With respect to part-time enrolment, the polytechnic and colleges sector has been dominant throughout the 1980s. Most university students enrol in courses in the S&T field or in H&S (41.6 % and 46.4 % respectively). This discipline distribution has remained fairly stable.

Figure 44 Enrolment in higher education (Great Britain) (*headcount, x 1000*)

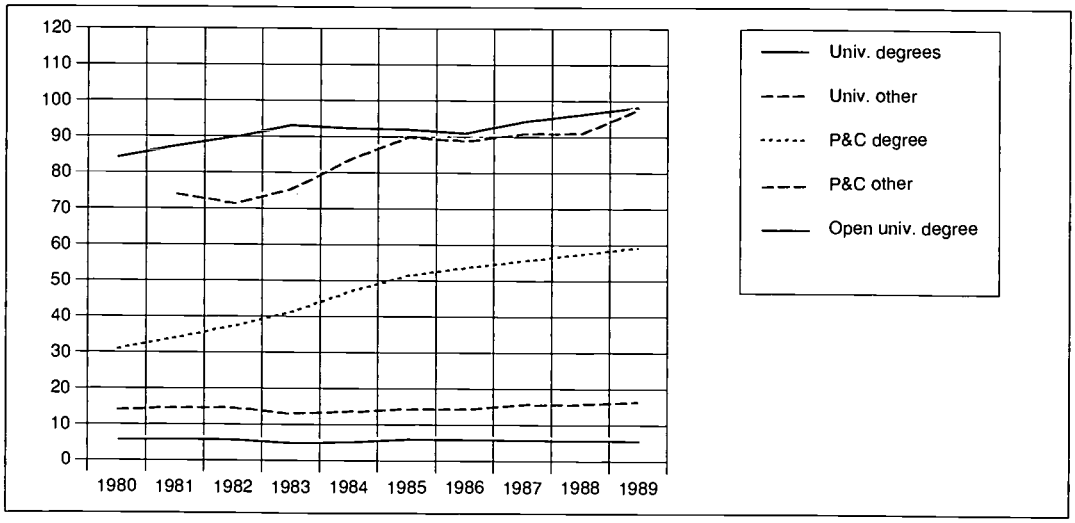


source: Statistical Bulletins

2.12.3 Graduates

Since 1980 there have been increases in all types of qualifications awarded, the greatest being in the number of degrees awarded by polytechnics and colleges. Regarding the BTEC awards the steady fall since 1986 continued until the end of the 1980s whereas the number of professional qualifications grew. Most degrees at universities are awarded in the H&S (47 %) and in S&T (38 %).

Figure 45 Higher education qualifications awarded (Great Britain, *x 1000*)



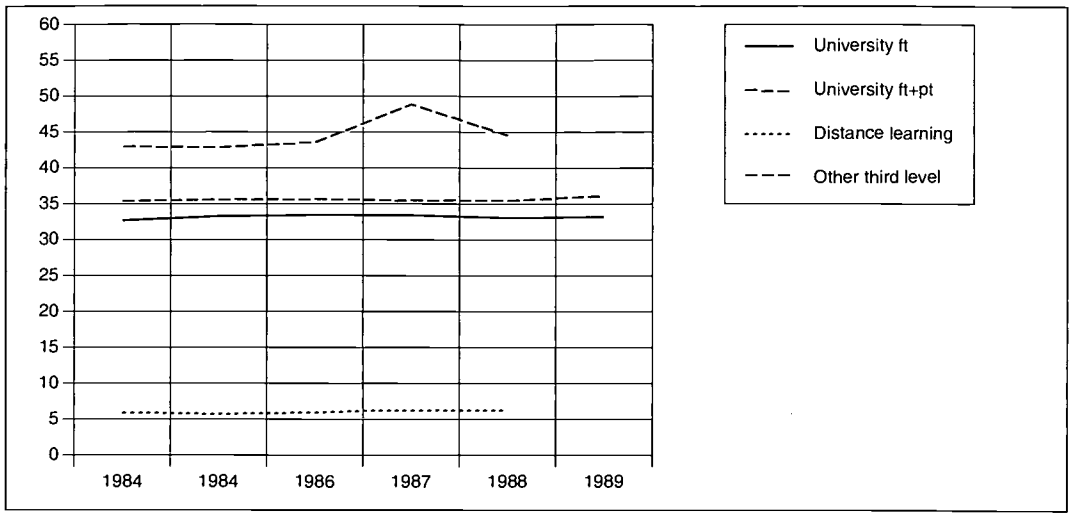
source: Statistical Bulletin 11/90, 10/91

54 UK-based data show that this strong increase in enrolment in the polytechnic and colleges sector continues into the 1990s

2.12.4 Teaching staff

The information available on teaching staff in higher education is rather sketchy. For universities, UK-based information on teaching staff in universities is available. Different sources provide somewhat different levels of information but it becomes clear that there have been no major changes in the number of full-time teaching staff. There has been some fluctuation in the number of part-time teaching staff. Information on the number of teaching staff in the non-university sector is inadequate. For example, the cause of the significant 'peak' in 1987 remains unexplained. However, the data show that the number of teaching staff in the non-university sector is higher than in the university sector.

Figure 46 Teaching staff in higher education (UK) (*x 1000*)



sources: University statistics 1989/90, volume 1
UNESCO, Statistical Yearbook

2.12.5 Duration of study

The standard duration of study for degree courses is three years. However, there is some variation in the standard duration according to region (in Scotland courses take longer), discipline (engineering and medicine take longer) and mode of study (part-time and sandwich courses take five and a half and four years to complete). Sub degree level courses have a standard duration of two years.

There is virtually no information on the actual duration of study available, although it is assumed among most experts that the actual duration of study does not significantly exceed the standard duration.[55]

2.12.6 Unemployment

Unemployment in the mid 1980s (1984) in Great Britain for university graduates was about 9%. For graduates in science, agriculture, language studies and arts the unemployment rate was higher than this average rate.[56]

For graduates from polytechnics and colleges, in England and Wales, unemployment was higher at about 13.5 %. Unemployment was above average in the same disciplines as for university graduates. From 1989/90 till 1990/91 unemployment among university graduates rose from 6.5 to 9.4 per cent. Unemployment rates for graduates of polytechnics, being already higher than for university graduates, showed an increase during that period of 3.5 per cent.[57]

55 Teichler, p. 14

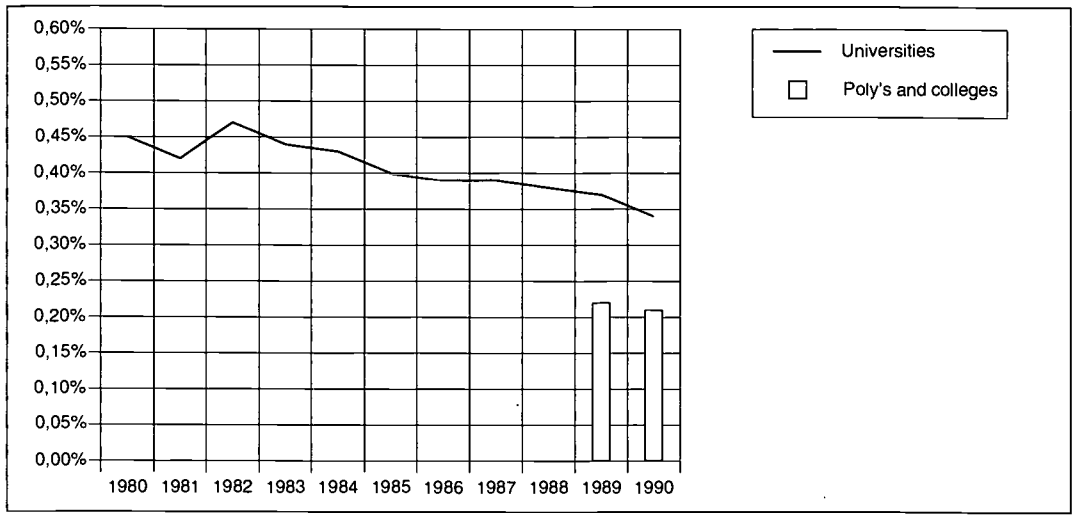
56 Source: Statistical bulletin 1/86

57 Source: Times Higher Education Supplement, June 5, 1992

2.12.7 Financial resources

The steady decline that was identified in the EC-study (Kaiser et al., 1992) continued to the end of the 1980s.

Figure 47 Public expenditure on higher education (GB) as a percentage of GDP



source: Statistical bulletin 21/91

note: Central governments own expenditure. For the universities, data are provided for Great Britain; for Polytechnics and colleges, data cover England only. Fees and support grants (0.11% of GDP in 1989) are not included since no consistent time series data were available. Percentages of GDP are lower than the data in the EC-report but this difference can be explained by the omission of student grants and fees.

3 National trends in higher education compared

3.1 SCARCE DATA, MULTIPLE SOURCES, AND THE COMPARISON OF LEVELS AND TRENDS

Statistical data on higher education systems are available in reasonable quantities, but reliable, consistent and complete time series data of higher education statistics are scarce. As could be expected this applies to the topics 'duration of study' and 'unemployment'. But it also applies to teaching staff and graduates and even to enrolment. Various sources had to be used to augment missing data, create time series analyses or to cross-check data. The use of multiple sources introduced a variety of definitions and concepts which in most cases led to different results. Within most countries it proved impossible to produce one consistent data set on all topics. Furthermore, the use of various sources at the national level reduces the possibility of applying a standard set of definitions in an international comparative framework.

Given these limitations, it becomes extremely difficult to compare the levels of the selected topics across all twelve Member States. The risk of producing biased comparisons is high. Therefore, a 'second best' solution has been chosen by using the changes in the levels of the selected higher education topics. The risk of producing biased comparisons is considerably lower if we assume that the impact of the use of different definitions on the level of the results has remained the same during the 1980s. Nevertheless, the conclusions have to be interpreted with some care.

In the following sections, the major conclusions regarding the national trends for the selected topics are presented.

3.2 ENROLMENT

Data on enrolment proved to be more inaccurate, inconsistent and aggregated than expected. For the breakdown by discipline and level of course, often different sources had to be used rather than the 'standard' ones providing totals. These different sources more than once provided data that were not fully compatible. The breakdown by level of course also proved too difficult to attain.

The university sector is the largest in all Member States, except in the Netherlands and the United Kingdom (see figure 48). Partly because of the very broad categorisation of disciplinary fields the breakdown by discipline did not produce a significantly different picture: H&S and S&T are the biggest sectors in all countries.

With respect to changes in enrolment during the 1980s, all systems (except Luxembourg; see figure 51) have expanded considerably. Portugal, Spain, Greece, and Ireland have taken a lead in the growth of overall enrolment. Enrolment (actual number of persons) in the non-university sector has been growing faster than enrolment in the university sector in Portugal, Germany, Ireland, and the United Kingdom. The opposite is true for the Netherlands and Denmark (see figures 49 and 50).

A clear pattern can be found in the changes in the breakdown by discipline. The proportion of students enrolled in B&L has increased (see figure 52) whereas relative enrolment in medicine has decreased substantially (see figure 53). In a number of countries a decline in the proportion of enrolment in H&S can be found, along with an increase in enrolment in S&T.

Figure 48 Enrolment in higher education in the EU-Member States (*x 1000*)

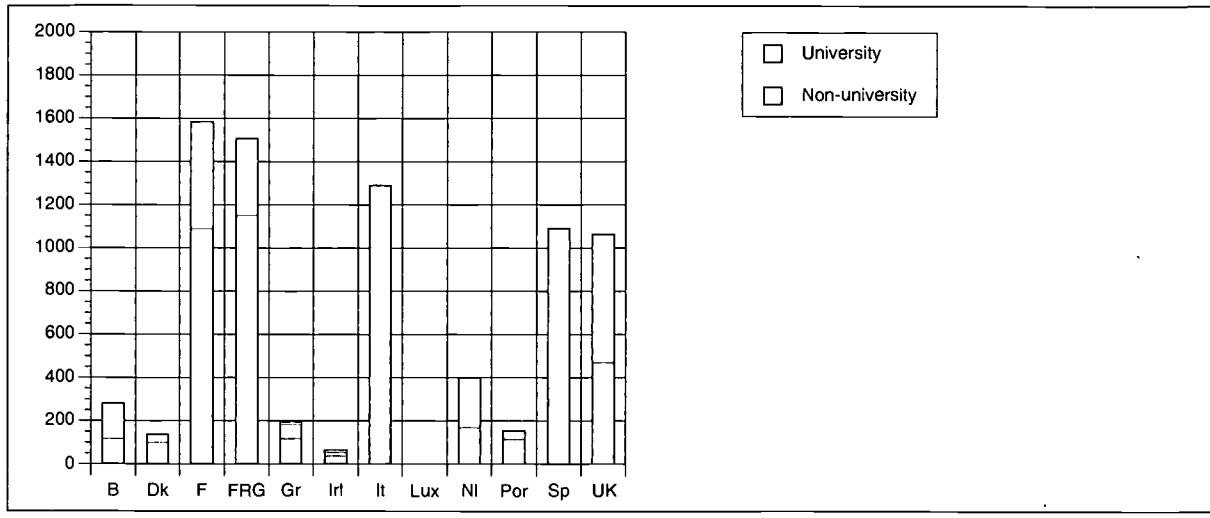
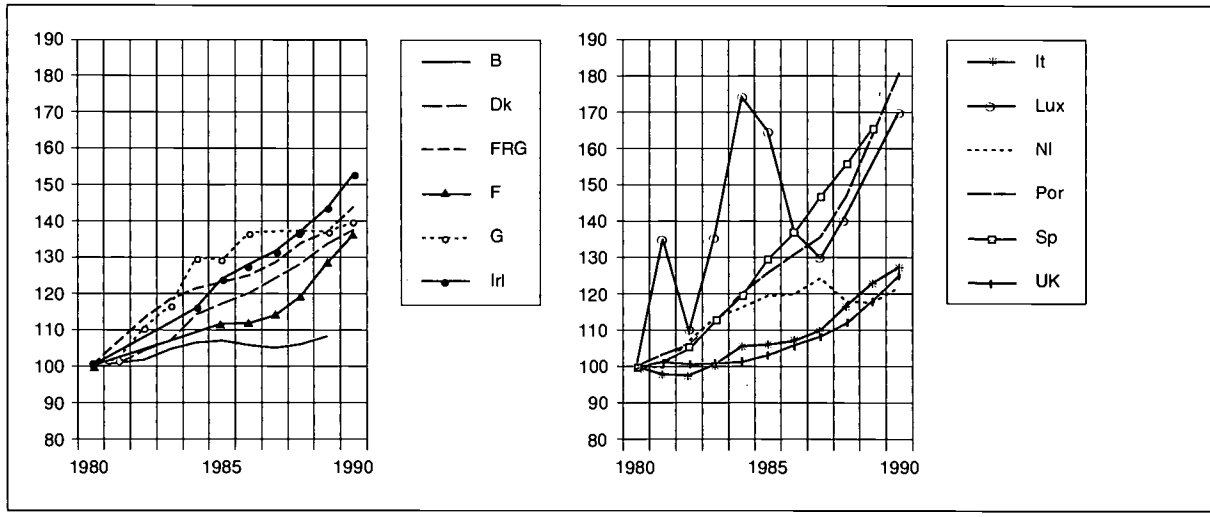
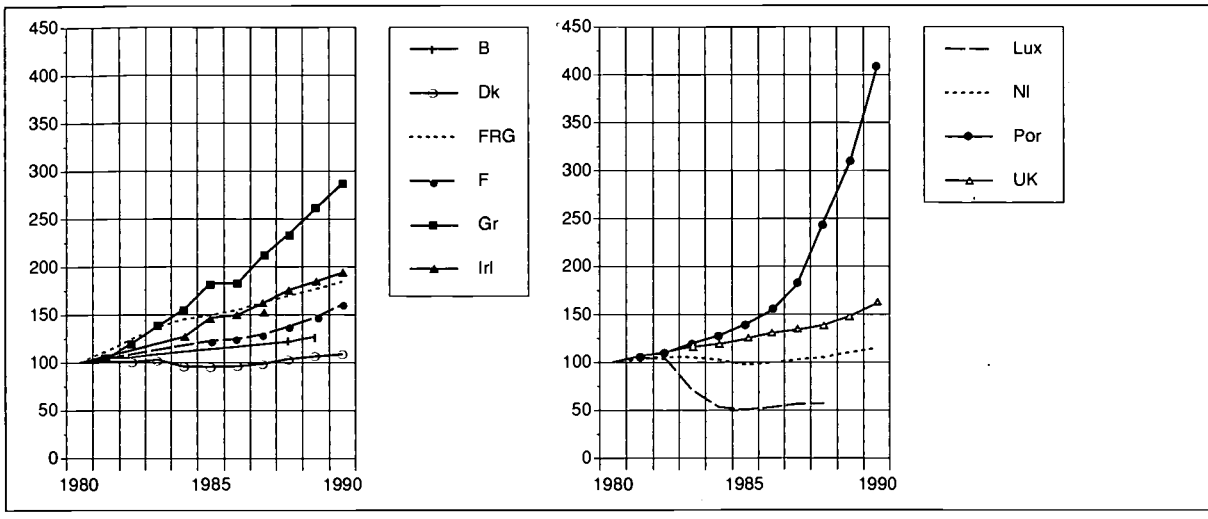


Figure 49 Changes in enrolment in higher education (university sector) in the EU-Member States



note: France: not including IUT
UK: full-time and part-time, including Open University

Figure 50 Changes in enrolment in higher education (non-university sector) in the EU-Member States



note:

	Denmark:	colleges and vocational schools
	France:	including IUT
	Ireland:	technical sector + teacher training + other

Figure 51 Changes in enrolment in higher education (total) in the EU-Member States

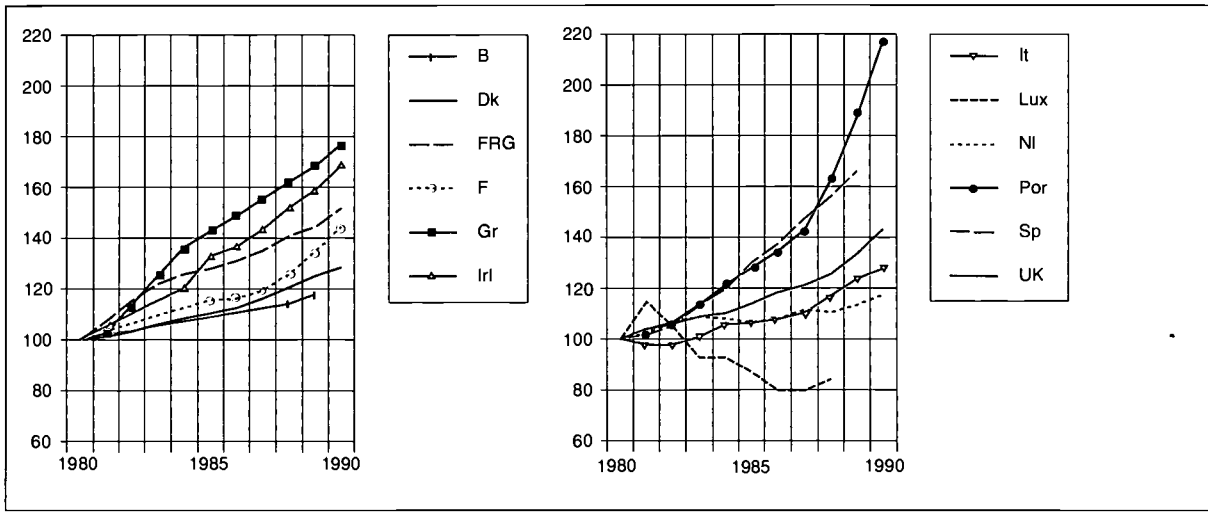
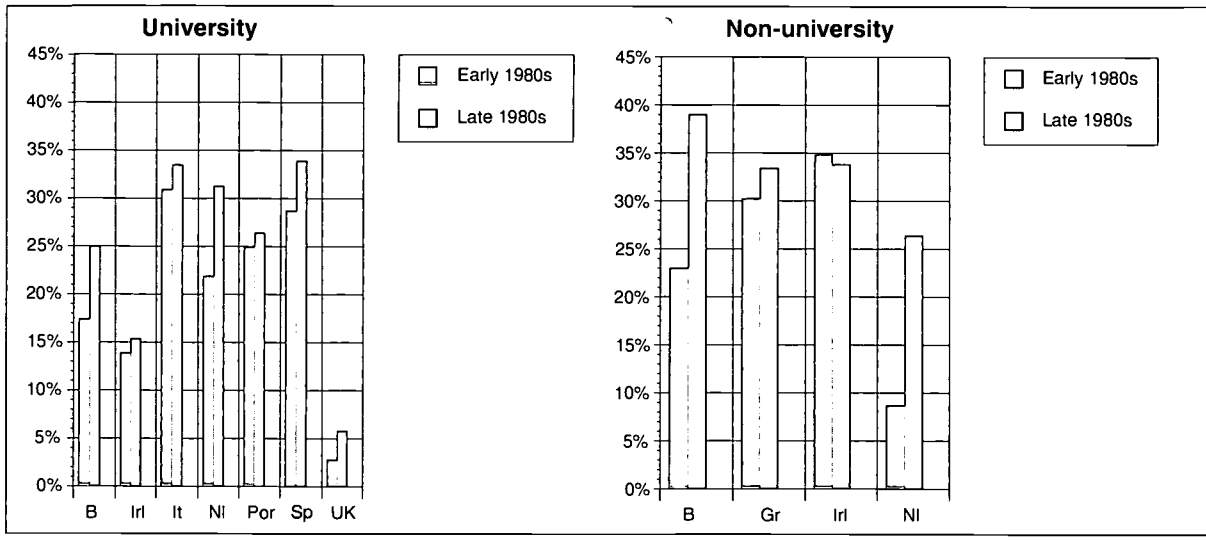


Figure 52 Proportion of enrolment in B&L



note:

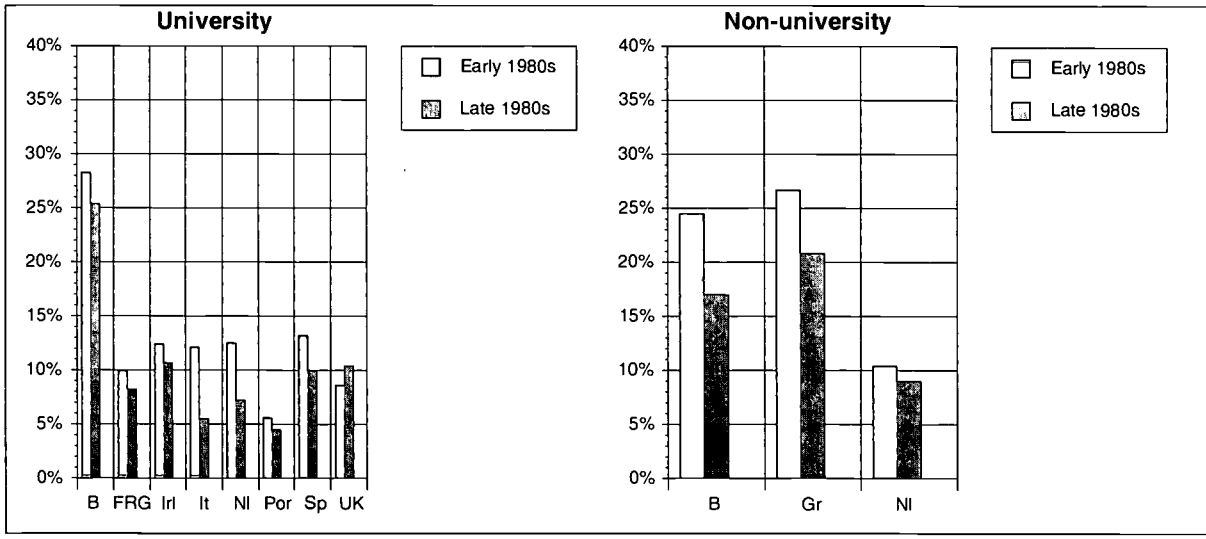
University;

B:	1980,1989	
FRG:	1980,1991	
GR:	1987,1990	
IRL:	1983,1990	
IT:	1984,1990	
NL:	1980,1990; full-time + part-time (headcount)	
POR:	1986,1989	
SP:	1984,1988	
UK:	1985,1989; full-time university	

Non-university; same years of reference

B:	HOBU short courses in Flemish community
NL:	full-time + part-time (headcount)

Figure 53 Proportion of enrolment in medicine



note: Same years of reference as in figure 52

3.3 GRADUATES

The analysis of change in the number of graduates relies upon an aggregation of the total number of diplomas, degrees, certificates, etc. This high level of aggregation generates rather crude and general results since within each country there is a wide variety of diplomas, etc. awarded. There are alternatives for this crude measure but these alternatives could not be used in this project. The first alternative is a breakdown by type of institution. In some countries (Belgium, the Netherlands, Germany, Greece, Portugal) the level of the degree awarded is closely related to the type of institution awarding the degree. For these countries a breakdown by type of institution would prove meaningful. However, in some other countries there is no close relation between type of institution and level of degree, either because no breakdown by type of institution can be made (Spain and Italy) or because one type of institution provides a range of degrees which overlap with the degrees awarded by another type of institution (France and the UK). Because of this, the use of a breakdown by institution would produce biased results.

The second alternative to using the total number of graduates is a breakdown by level of award. Applying this alternative would require an in-depth analysis of equivalence of degrees and mutual recognition of diplomas between the Member States, which would take us far beyond the scope of the project.

Overall, there has been an upward trend in the number of graduates in higher education. The relative number of graduates in B&L has risen in most countries whereas the proportion of graduates in medicine has fallen (see figure 55).

Figure 54 Changes in number of graduates from higher education (total) in the EU-Member States

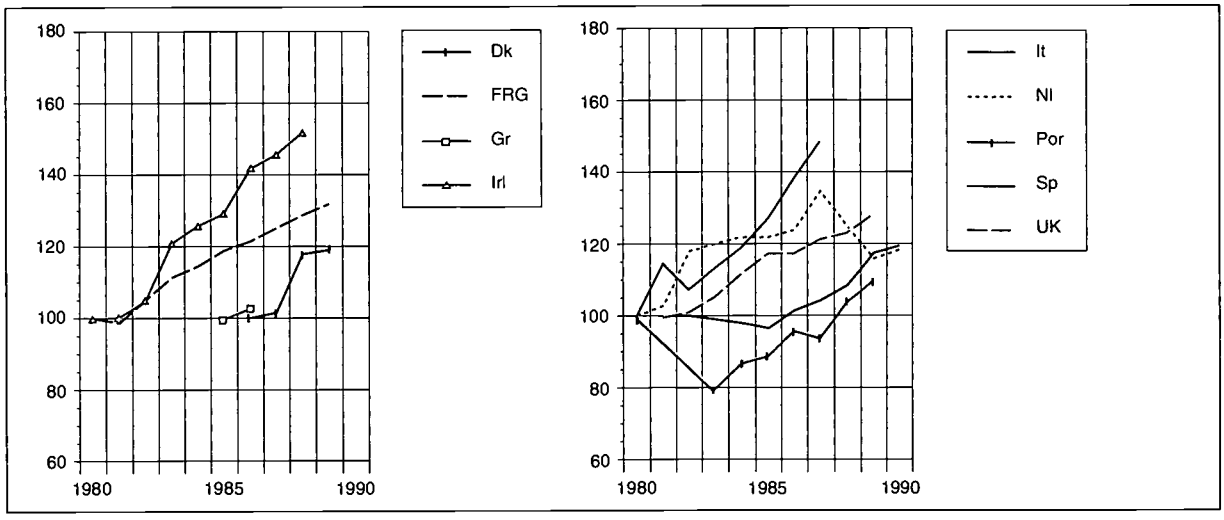
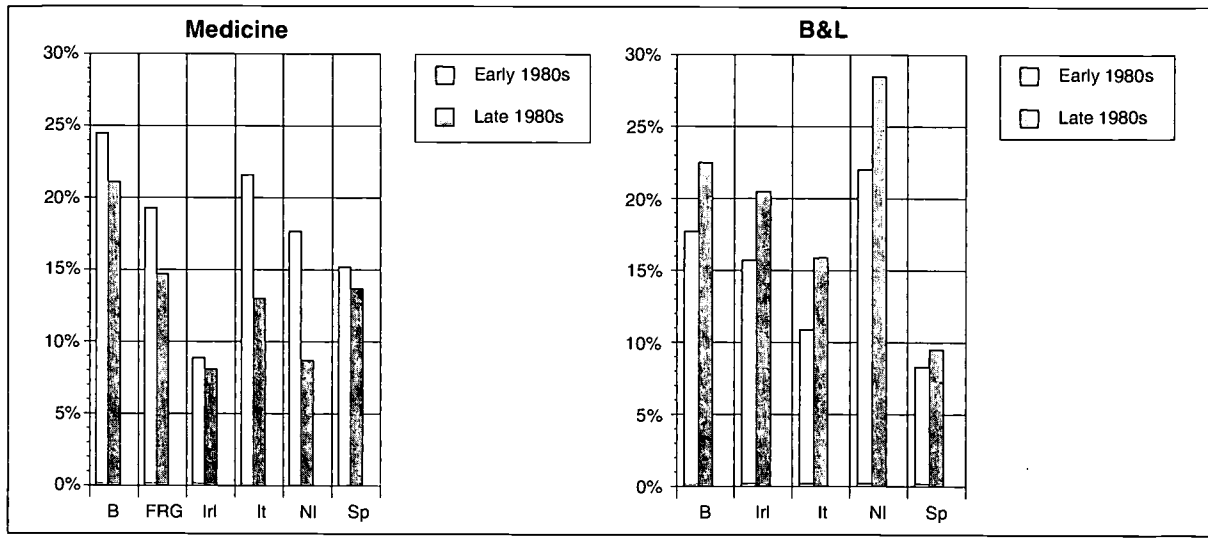


Figure 55 Proportions of graduates from universities



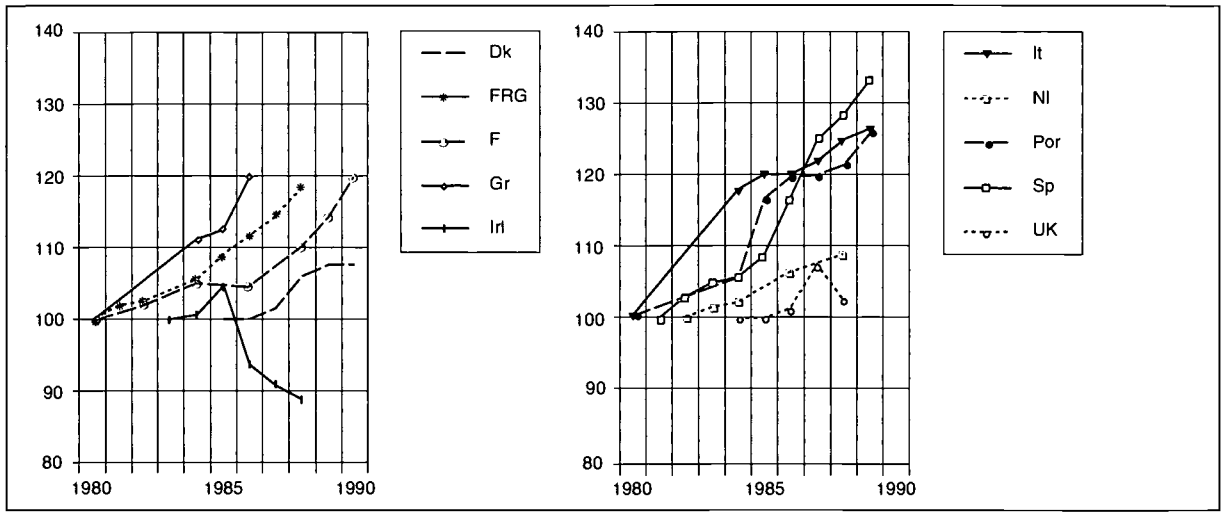
note:
B: 1980,1988
FRG: 1980,1989
IRL: 1977,1987
IT: 1981,1990
NL: 1980,1990
SP: 1982,1987

3.4 TEACHING STAFF

In chapter 1 a clear distinction was made between teaching staff and research staff. The latter were to be excluded in this report since research staff have no teaching responsibilities. In practice this simple dichotomy could not be made for all Member States. As a consequence, data on staff for some countries refer to teaching staff whereas in other countries they refer to academic staff. Comparing *levels* of teaching staff therefore will provide no valid results. Comparative analyses of *changes* in the number of staff may be biased by conceptual differences as well. Research staff as a share of total academic staff seem to have increased during the 1980s. If this shift is a significant one, changes in teaching staff are overestimated in those countries for which only data on total academic staff are available.

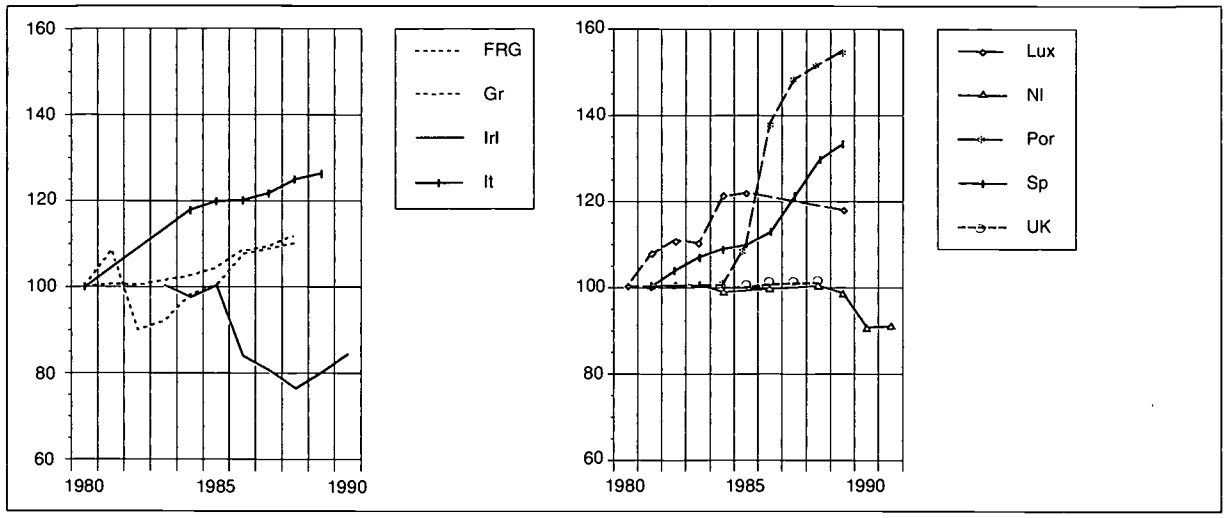
In most countries, the number of teaching/academic staff increased during the 1980s. Only in Ireland has the total number of teaching staff decreased. Broken down by type of institution, it appears that the pattern of growth is more consistent in the non-university sector than in the university sector. The reasons for the peculiar pattern in Portugal are unclear.

Figure 56 Changes in teaching/academic staff in higher education (total) in the EU-Member States



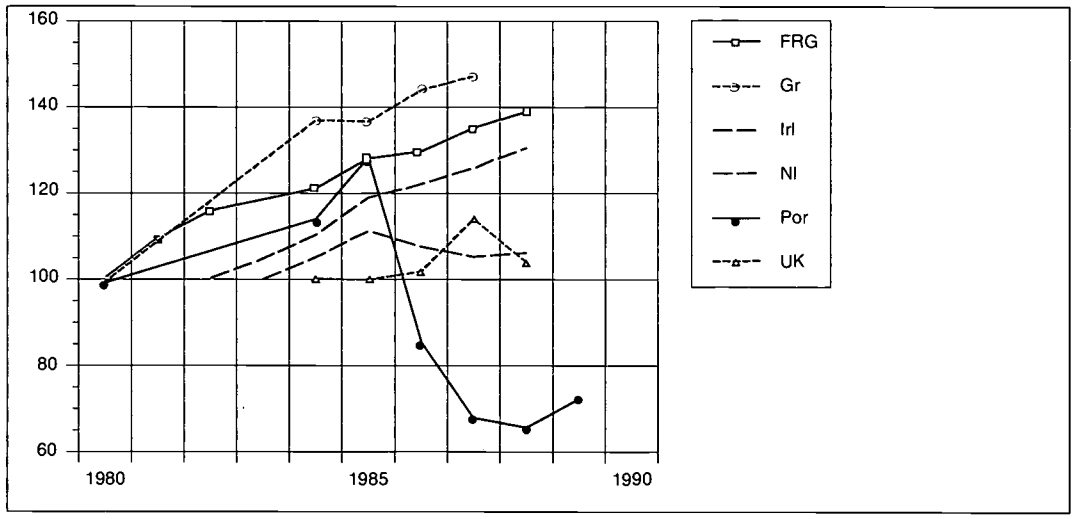
note: Denmark; academic staff full-time and part-time

Figure 57 Changes in teaching/academic staff in higher education (university sector) in the EU-Member States



note: FRG; full-time and part-time

Figure 58 Changes in teaching/academic staff in higher education (non-university sector) in the EU-Member States



3.5 DURATION OF STUDY

As has been expected, information on the duration of study is very fragmented. From the scarce information available it is often not very clear how the data are attained, which makes comparisons even more difficult.

From the information available, it seems that graduates in Italy and Spain take substantially more time to graduate than the standard duration of the courses. Up until 1988, graduates in Denmark also took substantially more time but after 1988 this dropped dramatically. The actual duration of study also exceeds the standard duration in Germany, the Netherlands, and Portugal, although the relative extension time is less than in Italy and Spain. In the United Kingdom and Ireland as well as in the medium and short courses in Denmark, the actual duration of study does not seem to be significantly longer than the standard duration of study.

3.6 UNEMPLOYMENT

To a great extent, conceptual differences and methodological inconsistencies hamper comparative analyses regarding unemployment rates. Most data originate from special studies and (limited) surveys. Therefore, neither a time series analysis nor a consistent and valid cross national comparison for any one year can be made.

3.7 EXPENDITURE

Public expenditure on higher education tended to converge during the period 1975-1987.[1] As a percentage of GDP, public expenditure on higher education decreased in countries spending relatively more on higher education (Belgium, Germany, the Netherlands, and the UK) and increased in countries spending relatively less (Greece, Italy, Portugal, and Spain). A similar pattern emerges regarding public expenditure during the 1980s. The increase in public expenditure in Portugal, Spain, and Italy which emerged during the early 1980s continued to the end of the decade. However, at the end of the 1980s a disturbance of this pattern occurred. Public expenditure in Spain and especially in Italy dropped. Although this 'change' may be due in some part to the provisional character of the data of the latest years, the extent of the decrease in Italy seems to indicate a real decrease. The new data on Greek public expenditure are not complete, and not compatible with other Greek data available. However, these data give the impression that the heavily fluctuating growth pattern of public expenditure on higher education has continued during the late 1980s.

Public expenditure on higher education keeps decreasing in Belgium, the Netherlands, and the UK.

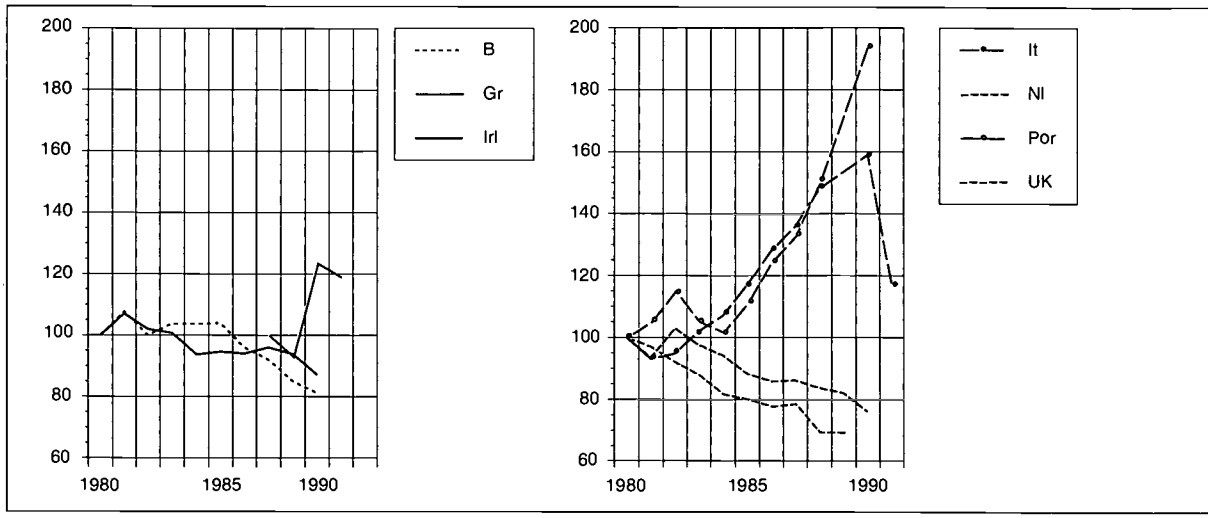
In three countries there has been a change in the development of public expenditure on higher education. In Denmark, the downward trend changed in 1986 when expenditure increased significantly. This 'new trend' stopped however after two years. In France public expenditure has grown substantially after a period of stabilisation. The Irish public expenditure on higher education increased from 1984 onwards but this upward trend turned into a downward trend after 1987.

1 Kaiser et al., 1992, p. 135

The new data on public expenditure on higher education are not as complete and consistent as existing data.[2] Furthermore, these data allow for only one indicator, whereas in other studies several indicators were used for monitoring higher education expenditure. Nonetheless, indications can be found that the pattern of convergence of public expenditure on higher education emerges from the data on the late 1980s as well. The efforts that national governments are making with respect to higher education keep converging.

Whether this means that the efficiency of the national systems is also converging cannot be determined on the basis of the data presented. To provide an assessment of efficiency, detailed information on the output of the national systems, both quantitative as well as qualitative, is required. This kind of information is not available.

Figure 59 Changes in public expenditure on higher education (university sector) in the EU-Member States



note: Belgium; data refer to the Flemish community

2 Kaiser et al., 1992

Figure 60 Changes in public expenditure on higher education (non-university sector) in the EU-Member States

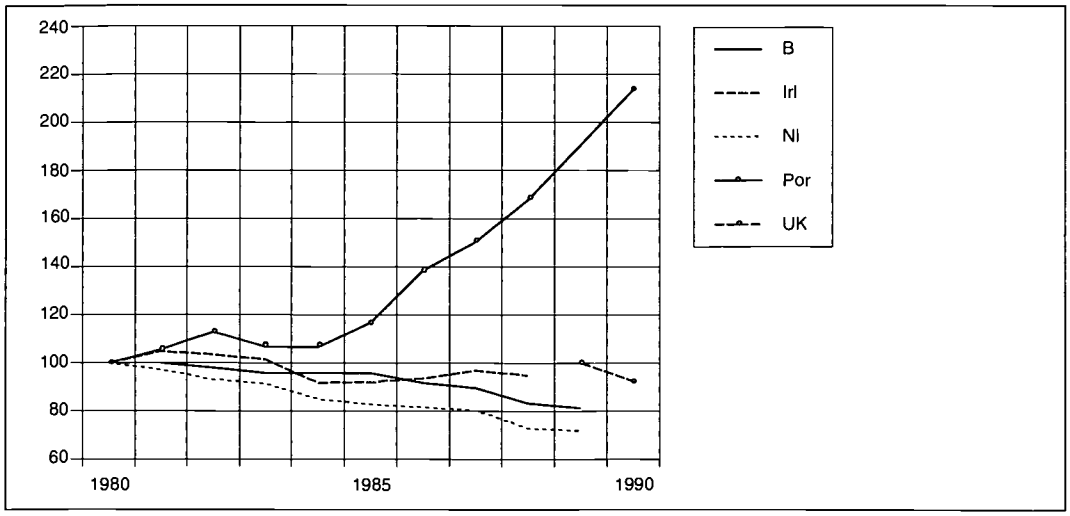
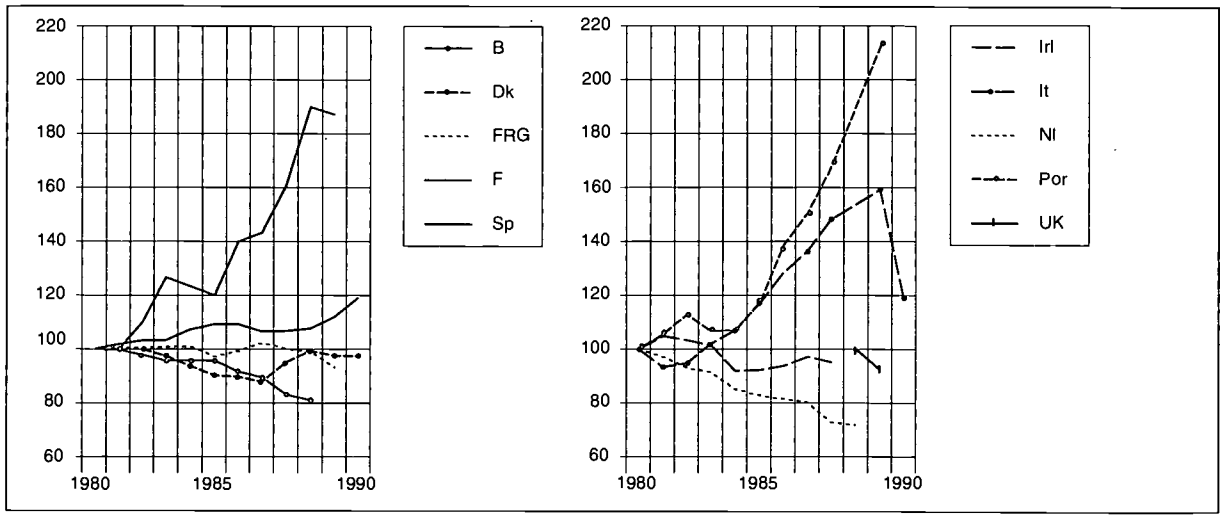


Figure 61 Changes in public expenditure on higher education (total) in the EU-Member States



3.8 COMPARATIVE ILLUSTRATIONS

The information on the changes in the levels of individual higher education topics presented above may be combined to get a further insight into the changes in national systems of higher education. In chapter 1, four basic ratios were mentioned: input/input, input/process, output/input, and outcome/output. Based on the topics selected and the information available, three basic ratios may be calculated:

- changes in public expenditure on higher education/changes in enrolment in higher education;
- changes in enrolment in higher education/changes in teaching staff;
- changes in public expenditure on higher education/changes in the number of higher education graduates.

Since no comparable information is available on employment (outcome) the fourth ratio cannot be calculated.

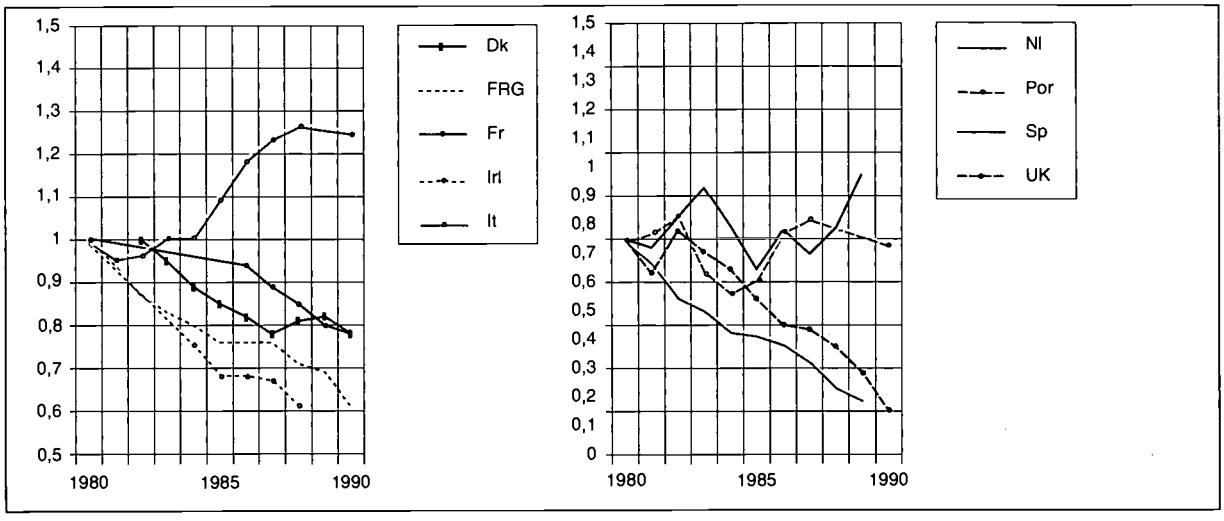
It should be stressed here that the analyses in the following section are illustrations of the possibilities of combining information on single topics. Conclusions that may be drawn from these analyses are tentative since there is very little information available on other variables which may have an impact on the interpretation of the findings (see also section 1.3.2) and the previous qualifying remarks made in this chapter.

3.8.1 Changes in public expenditure on higher education/changes in enrolment in higher education

Figure 62 shows a steady decrease in the ratio for most countries, which means that the national effort regarding higher education has decreased. The change in public expenditure did not match up with the increase in enrolment in those countries. In Italy and Spain, an increase in national effort can be found. These results are consistent with the conclusion that can be drawn from figure 61, except for France and Portugal. For these countries, figure 61 indicates an increase in national effort in the (late) 1980s, whereas figure 62 indicates a decrease or stabilisation of that effort.

The ratio has another possible interpretation (as mentioned in chapter 1). It may give an indication of the efficiency of the national system. Using this interpretation the conclusion would be that efficiency has increased in almost every country except Italy, Spain, and Portugal. However, this conclusion would be highly speculative since there is no information on the quality of the output (the level and quality of teaching), which is crucial in this context.

Figure 62 Ratio of the change in public expenditure on higher education and the change in enrolment in higher education

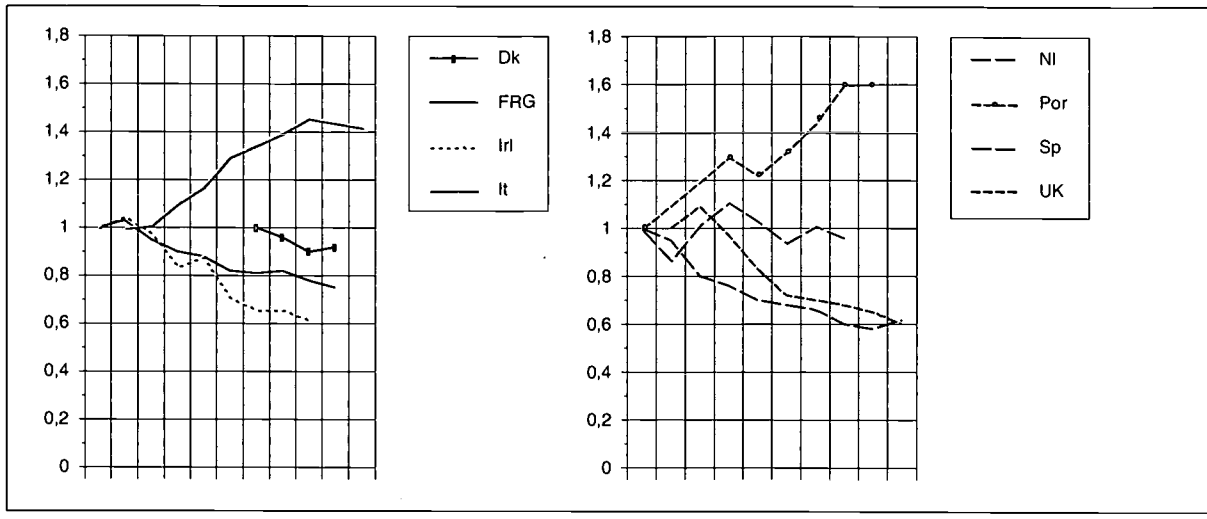


note: UK; university only

3.8.2 Changes in public expenditure on higher education/changes in the number of higher education graduates

Two patterns emerge from figure 63: a steady decline (in Germany, Ireland, the Netherlands, and the UK) and an increase (in Italy and Portugal). Using the interpretation mentioned in chapter 1, this would lead to the conclusion that efficiency has dropped Italy and Portugal and increased in Germany, Ireland, the Netherlands, and the UK. Again, there is no information on the quality of the output (the 'level' of qualifications of graduates). Therefore, statements on the efficiency of the national higher education system based on the data available cannot be made.

Figure 63 Ratio of the change in public expenditure on higher education and the change in the number of graduates from higher education



note: UK; university only

3.8.3 Changes in enrolment in higher education/changes in the number of teaching staff in higher education

Student/staff ratios have increased in all countries except Italy, Luxembourg, and the Netherlands. However, the breakdown by type of institution shows that this conclusion is distorted by the high level of aggregation, especially for Portugal and the Netherlands. Broken down by type of institution, it appears that the student/staff ratio in the university sector has not deteriorated as much in Portugal as figure 64 indicates and it has deteriorated more in the Netherlands than indicated in figure 64. Changes in student/staff ratio in the non-university sector are in the opposite direction.

Another source of bias is the mode of enrolment. In calculating the student/staff ratio, part-time students are counted as full-time students. If the change in part-time enrolment differs from the change in full-time enrolment, the calculated ratio will be biased. For most countries the extent or even the direction of this bias cannot be determined, since there are no data on part-time enrolment available. The Dutch ratio for the university sector will be biased upward if part-time students are counted as 0.5 full-time students (The student/staff ratio will be lower than the one calculated.) By the same token, the calculated ratio for the non-university sector will be biased downward. The British ratio for the university sector will be biased upward and the ratio for the non-university downward.

Figure 64 Ratio of the change in enrolment in higher education (total) and the change in the number of teaching staff in higher education (total)

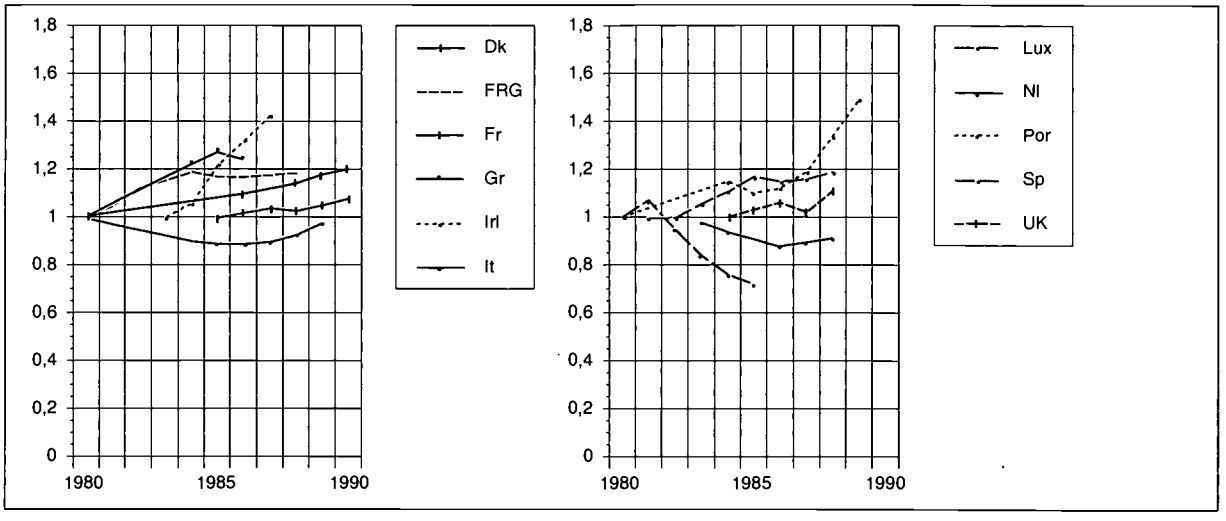
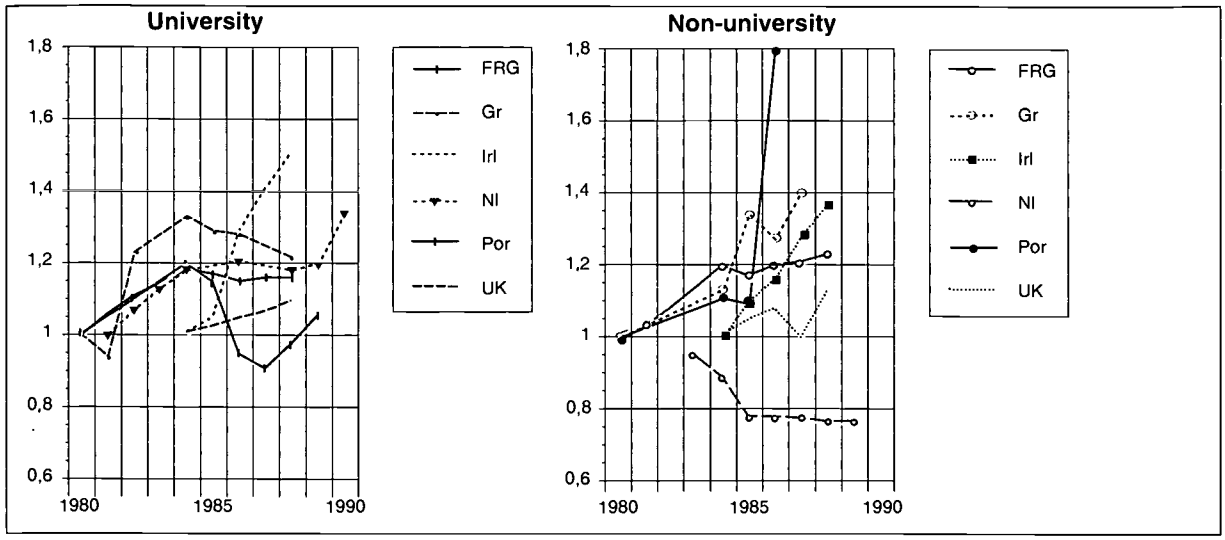


Figure 65 Ratio of the change in enrolment in higher education and the change in the number of teaching staff in higher education by type of institution



note: The ratio for Portugal in 1987 and 1988 is far beyond the scale of the figure

3.9 FINAL REMARKS

Various international organisations are making an effort to create and expand statistical overviews of basic characteristics of national higher education systems. These efforts need to be extended. Given the dynamic nature of higher education, an annual up-date of statistical data on higher education is not enough. A constant scientific review of the conceptual and methodological aspects of higher education statistics in a comparative perspective is also essential to keep the databases valid and relevant. As for the relevance of the information in the databases, it is important to keep in mind the shifting preferences of the audience, i.e. international forums, national governments, higher education institutions, students, etc.

This report is not meant to be a complete and comprehensive statistical publication. The diversity of the statistical information available and the problems encountered in making that information comparable, have kept us from making such a publication. However, the report may prove to be a rich source of statistical information on trends in higher education - a source which will stimulate the discussions on the reliability, validity, and relevance of the information presented, and of the statistical information available in the Member States. But this is not the most important goal of this report. The presentation of the statistical information is intended to stimulate the debate on higher education and higher education policies within the European context, following the Memorandum on Higher Education of the European Commission. If the report helps to focus and enhance these discussions, the main goal will have been achieved.

Appendix

Tables underlying the figures presented

Belgium

Table A.1 Enrolment in higher education (*headcount*)

BELGIUM	University	HOBU short	HOBU long	HOBU short Flemish	HOBU long Flemish
1980	106669			13183	45589
1981	107754	80415	25405	13854	48737
1982	108590			14584	50816
1983	111781			16271	51965
1984	113681			17787	51315
1985	114356			19502	50740
1986	113146			21272	53591
1987	112326			22822	54555
1988	113453	91242	37727	24218	55638
1989	115870	95635	38990	25225	56694
1990				25889	56348
1991				23897	61887

sources: Statistisch Jaarboek van het onderwijs
Annuaire Statistique
Jaarverslag, Dienst voor Universitaire Statistiek

Table A.2 Graduates from higher education

BELGIUM	University	HOBU long	HOBU short
1980	16922		
1981	18086		
1982	18135		
1983	18753		
1984	18991		
1985	19217		
1986	19107		
1987	19637		
1988	19676	9423	22271
1989		11557	23006

source: Jaarverslag 1990, Dienst voor Universitaire Statistiek
note: aantal einddiploma's uitgereikt aan de studenten en meisjesstudenten van Belgische of vreemde nationaliteit

Table A.3 Academic staff in higher education (*in fte*)

BELGIUM	University Flemish	University French	HOBU Flemish	HOBU French
1982	4030			
1983				
1984				
1985				
1986	3918			
1987				
1988	3945	3622		5618
1989		3600		5773
1990	4066	3570	6623	

sources: Annuaire Statistique de l'Enseignement
Statistisch Jaarboek van het Onderwijs
Vlaamse Interuniversitaire Raad, *Statistische gegevens betreffende het personeel aan de Vlaamse universitaire instellingen*
CIUF, Statistiques étudiants, personnel

Table A.4 Public expenditure on higher education as a percentage of GDP

BELGIUM	University Flemish	HOBU Flemish	University French	HOBU French
1980	0.26			
1981	0.28	0.20		
1982	0.26	0.21		
1983	0.27	0.19		
1984	0.27	0.19		
1985	0.27	0.19		
1986	0.25	0.19		
1987	0.24	0.19		
1988	0.22	0.18		
1989	0.21	0.18	0.28	0.11
1990		0.17	0.25	0.12
1991	0.21			

sources: Vercruysse, N., Brochure prepared for the European Colloquium 'The missions and means of the university: issues and prospects for the financing of the European university system', Barcelona, September 1989.
Forum
Education et Formation, Annuaire statistique, p. 47

Table A.5 Enrolment in higher education (*headcount*)

DENMARK	Univ. sector source I	Colleges source I	Voc. schools source I	Univ. sector source II	Colleges source II	Univ. sector source III	Colleges source III
1980	74000	32100	3900			85388	20853
1981	74600	32600	4100	72370			
1982	77200	32200	4200				
1983	79300	32500	4800	76954			
1984	84600	29700	4900			88812	25747
1985	86900	28600	5900	88636		91450	24869
1986	89000	28400	6300			93814	24227
1987	92100	29000	6700	96205	30841	96795	25461
1988	95200	30700	6800	99258	31883	100543	26119
1989	99300	32400	6000	101414	33701		
1990	102100	32900	6300	105023	33794		

sources: I Information from the Ministry of Education and Research
II *De videregaende uddannelsel*
III UNESCO, Statistical Yearbook

Table A.6 Graduates from higher education

DENMARK	Total source I	Total source II	Universities source II	Colleges source II
1982	19710			
1983				
1984				
1985	20314			
1986		16861	11470	5391
1987		17118	11913	5205
1988	19726	19856	14644	5212
1989		20073	14852	5221

sources: I *De videregaende uddannelsel*
II OECD, *From higher education to employment*

Table A.7 Academic and teaching staff in higher education (*fte*)

DENMARK	Academic staff source I	Teachers and professors source II
1985	6600	5400
1986	6600	5300
1987	6700	5300
1988	7000	5200
1989	7100	
1990	7100	

sources: I and II Danish Ministry of Education and Research

Table A.8 Public expenditure on higher education (including student grants and loans) as a percentage of GDP

DENMARK	source I	source II
1980	1.41	
1981	1.60	
1982	1.59	1.38
1983	1.58	1.34
1984	1.55	1.29
1985	1.47	1.25
1986	1.41	1.24
1987	1.45	1.21
1988		1.31
1989		1.37
1990		1.35
1991		1.35

source I Kaiser et al., *Public expenditure on higher education*
II Danish Ministry of Education and Research

Table A.9 Enrolment in higher education (*headcount*)

GERMANY	West Germany			*GDR*
	University	Fachhochschulen	Total	Total
1980	841832	201953	1043785	129970
1981	896642	224650	1121292	130633
1982	951757	251364	1203121	130442
1983	996820	276129	1272949	130097
1984	1021788	292100	1313888	129628
1985	1036380	301268	1337648	129885
1986	1055231	312468	1367699	131560
1987	1081931	328625	1410556	132602
1988	1127292	342968	1470260	132423
1989	1151043	356981	1508024	134440
1990	1212099	372599	1584698	133335
1991	1256982	389710	1646692	127780

sources: Federal Ministry of Education and Science, *Basic and Structural data*
AKTUELL Bildungswissenschaft: Studenten an Hochschulen, 1975 bis 1991, 7/92, BMBW

Table A.10 Number of higher education graduates

GERMANY	West Germany				*GDR*
	University		Fachhochschulen		
	Diplom	Doktor	Lehramt	Diplom FH	Total
1980	46300	12200	30500	34700	24200
1981	46900	12300	27400	35400	23520
1982	50600	13000	27800	39700	24983
1983	54800	13600	27400	41900	25143
1984	57200	14100	25600	44600	25638
1985	61100	15000	22900	48000	25046
1986	63900	15500	20400	50400	22573
1987	69300	16000	16700	52800	22762
1988	74500	17300	13700	53700	25249
1989	79200	17900	11300	54600	

source: Federal Ministry of Education and Science, *Basic and Structural data*

Table A.11 Teaching staff in higher education (West Germany)

GERMANY	University		Fachhochschulen	
	Full-time	Part-time	Full-time	Part-time
1980	76013	33685	9221	8464
1981	78211	32249	9649	9669
1982	79544	30737	10064	10402
1983				
1984	81171	31973	10204	11221
1985	82639	33734	10277	12362
1986	85618	33661	10437	12487
1987	88254	33385	10548	13380
1988	91447	34994	10611	13929

source: Federal Ministry of Education and Science, *Basic and Structural data*

Table A.12 Public expenditure on higher education as a percentage of GDP

GERMANY	Source I	Source II + research	Source II - research	Source III
1980	1.20			
1981	1.21	1.21	1.16	
1982	1.21	1.18	1.13	
1983	1.21	1.15	1.10	
1984	1.21	1.13	1.08	
1985	1.17	1.09	1.04	
1986	1.19	1.08	1.03	1.02
1987	1.23	1.08	1.03	1.01
1988	1.20	1.05	1.00	1.00
1989	1.19	1.03	0.99	0.98
1990	1.12			

sources:
I Federal Ministry of Education and Science, *Basic and Structural data*
II Kaiser et al., *Public expenditure on higher education,* Research refers to DFG funds (special funds for research in universities)
III Wissenschaftsrat: Eckdaten und Kennzahlen zur Lage der Hochschulen — Fortschreibung 1992 — (Datenstand: 1989/90/91). Köln, 1992, tables 19 and 21

Table A.13 Enrolment in French higher education (*headcount*)

FRANCE	Non-university sector				University sector		Other	Total
	STS	CPGE	*Grandes Ecoles*	Para-medic and social	IUT	Univer-sities		
1980	67315	40123	122879	91741	53667	792729	8376	1176830
1985	117766	47334	152890	78160	61905	885755	14087	1357897
1986	129942	48811	153155	73811	63705	886440	14279	1366610
1987	145053	53267	150227	72032	63780	903797	14974	1402130
1988	162057	57881	157741	71682	67101	945339	15276	1477077
1989	178500	62811	169855	70144	69894	1018637	15425	1585289
1990	199084	67465	191679	70385	74293	1080234	15576	1698716

source: Repères & références statistiques
note: France Métropolitaine
University: excluding IUT and ENSI
Others: including *Préparations intégrées*

Table A.14 Graduates from higher education

FRANCE	Bac+2	Bac+3	Bac+4	DEA/DESS-IUT		STS	Paramed and social	*Ecoles d'ingénieurs*
1980					19782	17442		
1981						19130		
1982	51028	44184	30276	21243	21620	21389	26420	
1983	54695				21676	23109	25066	
1984	61744				22759	24552	25590	
1985	61094	49062	35411	26019	24045	29594	26725	13107
1986	68526				25252	33933	27096	13848
1987	69855	54743	41123	25912	24690	36275	23483	14276
1988	73952	58493	43132	27692	26353	39936		14899
1989	80454	64508	47496	29878	27815	44796		16080
1990	88183	71325	51189	33150	28977	52667		

sources: Repères et Références Statistiques
Note d'information 92.18 , 92.27 and 92.28
Tableaux statistiques
Lamoure-Rontonpoulou, J. and J. Lamoure (1989) table 9
note: not including medical disciplines and pharmacy

Table A.15 Public expenditure on higher education as a percentage of GDP

FRANCE	
1980	0.66
1981	0.68
1982	0.69
1983	0.69
1984	0.71
1985	0.73
1986	0.73
1987	0.71
1988	0.71
1989	0.72
1990	0.75
1991	0.79

source: Le compte de l'education 1985-1990

note: Data refer to 'financement des activités d'éducation et des achats de biens et de services liés à l'éducation; dépenses des financeurs finaux; dépenses totales (courantes et en capital) enseignement supérieur; administration publique et entreprises et ménages'

Table A.16 Enrolment in Greek higher education (*headcount*)

GREECE	AEI	TEI
1980	85718	28810
1981	87476	29965
1982	94867	
1983	100254	
1984	111446	44821
1985	110959	52732
1986	117470	52807
1987		61003
1988	117979	67582
1989	117769	75257
1990	120051	82802

sources: Greek Ministry of Education
Statistical Yearbook, Greece

Table A.17 Graduates from Greek higher education

GREECE	AEI			TEI
	Ptychiou	Post grad. dipl.	Doctorates	
1980	14914	131	443	
1981	13921	110	314	
1982	15312	211	445	
1983	15196	203	236	
1984	14786	157	415	
1985	15414	241	441	4388
1986	16007	273	338	4480
1987	18090	310	843	
1988	17939	317	1001	

sources: Greek Ministry of Education
Statistical Yearbook, Greece

Table A.18 Teaching staff in Greek higher education

GREECE	AEI source I&III	AEI source III	TEI source I	TEI source II	TEI source III
1980	6924		3618		
1981	7489				
1982	6206				
1983	6350	3729			
1984	6778		4957		
1985	6934		4944	4149	
1986	7141		5209	4415	
1987	7435		5325		
1988					
1989	7707	5386			4322
1990		5765			5174

sources: I UNESCO Statistical Yearbook
II Greek Statistical Yearbook
III Greek Ministry of Education

Table A.19 Changes in public expenditure on higher education (AEI partial data) (1987=100)

GREECE	AEI	TEI
1987	100.0	100.0
1988	92.9	85.5
1989	123.6	112.9
1990	118.9	116.2
1991	101.7	109.3

source: Greek Ministry of Education

Table A.20 Enrolment in higher education (*headcount*)

IRELAND	University sector	Technical sector	Teacher training	Other	Total
1980	26104	10910	2962	1540	41516
1981					
1982					
1983					
1984	30317	15566	2473	1516	49872
1985	32388	18953	2132	1615	55088
1986	33443	19481	2092	1563	56579
1987	34365	20827	2029	2174	59395
1988	35820	23268	1659	2223	62970
1989	37466	25309	1362	1812	65949
1990	39918	27078	1036	1842	69874

source: Student statistics

Table A.21 Graduates from higher education

IRELAND	University sector					Non-university	Total
	Undergrad. dipl. & cert.	First degrees	First degr. + post-grad. dipl. & cert.	Post-grad. dipl. & cert.	Post-grad. degree		
1980			7748		645	2415	10808
1981			7455		686	2707	10848
1982			7321		760	3286	11367
1983	656	6164	8182	1994	923	3972	13077
1984	646	6572	8476	1894	884	4252	13612
1985			8625		959	4397	13981
1986			9616		1073	4641	15330
1987	588	7446	9541	1929	1212	5031	15784
1988	573	7875	9771	1745	1288	5386	16445
1989	546	8429	10184	1755	1517		

sources: UNESCO, Statistical Yearbook
Clancy, P., 1991

Table A.22 Teaching staff in higher education (*in fte*)

IRELAND	University source I	University source II	Non-university source II	Non-university fte source I	Non-university full-time source I
1983		3330	2399		
1984		3238	2523		
1985		3332	2670	2317	1965
1986		2787	2582	2370	2011
1987	2401	2677	2526	2306	1947
1988	2302	2538	2548		1960
1989	2391				1974
1990	2518				

sources: I Kaiser et al., *Public expenditure on higher education*
II UNESCO, Statistical Yearbook

Table A.23 Current public expenditure in higher education as a percentage of GDP

IRELAND	University source I	University source II	Non-university source I
1980	0.536	0.554	0.386
1981	0.572	0.588	0.396
1982	0.549	0.565	0.404
1983	0.540	0.560	0.395
1984	0.502	0.524	0.344
1985	0.507	0.527	0.341
1986	0.504	0.521	0.359
1987	0.515	0.507	0.379
1988	0.503	0.474	0.371
1989	0.467		

sources: I Kaiser et al., *Public expenditure on higher education*
II University statistics

Table A.24 Enrolment in higher education (*headcount*)

ITALY	Total	Index 1984=100	of which in *corsi di Laurea*	Index 1984=100
1980	1047831	95		
1981	1024681	93		
1982	1022282	92		
1983	1054768	95		
1984	1106661	100	766737	100
1985	1113175	101	766991	100
1986	1125635	102	783635	102
1987	1153298	104	791205	103
1988	1222765	110	784379	102
1989	1291991	117	867430	113
1990	1334821	121	926821	121

source: Censis

Table A.25 *Laurea* graduates in higher education

ITALY	*Laurea*	Index 1981=100
1981	74727	100
1982	74745	100
1983	73987	99
1984	73157	98
1985	72148	97
1986	75810	101
1987	77869	104
1988	81034	108
1989	87714	117
1990	89196	119

source: Censis

Table A.26 Teaching staff in higher education

ITALY	Universities	Index 1980 =100
1980	42531	100
1981		
1982		
1983		
1984	50154	118
1985	50996	120
1986	51081	120
1987	51815	122
1988	53142	125
1989	53760	126

source: UNESCO, Statistical Yearbook

Table A.27 Public expenditure on higher education as a percentage of GDP

ITALY	Current source I	Capital source I	Total source I	Total source II
1980	0.34	0.06	0.40	
1981	0.32	0.06	0.37	
1982	0.36	0.02	0.38	
1983	0.36	0.05	0.41	
1984	0.38	0.05	0.43	0.42
1985	0.38	0.08	0.47	0.47
1986	0.40	0.11	0.51	0.51
1987	0.42	0.13	0.54	0.54
1988	0.46	0.13	0.59	0.59
1989				
1990				0.63
1991				0.47

sources: I Public Expenditure on Higher Education, Kaiser et al.
II Censis; Spesa del Ministerio dell'Università e della Ricerca

Table A.28 Enrolment in higher education (*headcount*)

LUXEMBOURG	CUL	IST & ISERP
1980	356	732
1981	481	767
1982	390	754
1983	488	521
1984	620	387
1985	587	363
1986	488	382
1987	462	406
1988	505	411
1989		
1990	608	

source: Annuaire statistique

Table A.29 Teaching staff at the university centre (*headcount*)

LUXEMBOURG	CUL
1980	147
1981	158
1982	163
1983	162
1984	178
1985	179
1986	
1987	
1988	
1989	174

sources: Annuaire statistique
Student Guide of the CUL

Table A.30 Enrolment in higher education

THE NETHERLANDS	HBO			Universities		
	Full-time	Part-time	Total	Full-time	Part-time	Total
1980	132770	79038	211808	139335	4276	143611
1981	135214	85389	220603	138232	5000	143232
1982	141012	84397	225409	146848	6877	153725
1983	144148	79671	223819	154574	8439	163013
1984	146620	71181	217801	156655	10184	166839
1985	146087	61012	207099	160234	11295	171529
1986	151259	59934	211193	160845	11378	172223
1987	160137	57798	217935	165997	12525	178522
1988	168384	55294	223678	156154	13130	169284
1989	179332	54881	234213	154911	14057	168968
1990	189260	53546	242806	160406	14513	174919
1991	202600	54220	256820	164400		

source: CBS, Zakboek onderwijsstatistieken
CBS, Statistiek van het hoger beroepsonderwijs, Instellingen en studenten

Table A.31 Graduates from higher education

THE NETHERLANDS	HBO	University undergraduate	University PhD
1980	39342	11160	911
1981	39251	12583	1015
1982	45640	14082	925
1983	45818	14706	1020
1984	45585	15934	1052
1985	43486	17834	1176
1986	41529	20824	1306
1987	38318	29382	1518
1988	37516	24970	1664
1989	38801	19036	1692
1990	40895	18240	

source: CBS, Zakboek onderwijsstatistieken

Table A.32 Teaching staff and academic staff in higher education (*in fte*)

THE NETHERLANDS	HBO	HBO full-time	Universities
1980			
1981			18365
1982			18484
1983	8982		18462
1984	9387		18154
1985	9898		
1986	10678		18344
1987	10966		
1988	11289		18397
1989	11712	13309	18096
1990		12420	16629
1991		12540	16699

sources: CBS, Zakboek onderwijsstatistieken
CBS, Statistiek van het hoger beroepsonderwijs, personeel
VSNU, WOPI
HOOP, Ministry of Education and Science

Table A.33 Public expenditure on higher education as a percentage of GDP

THE NETHERLANDS	HBO	Universities	Total
1980	0.51	1.38	1.90
1981	0.50	1.34	1.85
1982	0.50	1.27	1.77
1983	0.51	1.22	1.74
1984	0.49	1.13	1.62
1985	0.47	1.11	1.57
1986	0.48	1.07	1.55
1987	0.43	1.09	1.52
1988	0.42	0.96	1.38
1989	0.40	0.96	1.36

sources: CBS, Statistiek van de uitgaven der Overheid voor onderwijs
CBS, Uitgaven voor het wetenschappelijk onderwijs

Portugal

Table A.34 Enrolment in higher education (*headcount*)

PORTUGAL	University			Non-university			Total
	Public	Private	Total	Public	Private	Total	% private
1980	64978	5220	70198	10947	2609	13556	9.35%
1981	67034	5494	72528	12036	2375	14411	9.05%
1982	68255	6118	74373	12385	2552	14937	9.71%
1983	71409	7376	78785	13187	3105	16292	11.02%
1984	74847	9538	84385	13745	3612	17357	12.92%
1985	77666	10600	88266	14144	4827	18971	14.39%
1986	78874	12928	91802	14086	6789	20875	17.50%
1987	80149	15026	95175	16560	8033	24593	19.25%
1988	86468	16577	103045	21509	11891	33400	20.86%
1989	93541	21448	114989	25728	16292	42020	24.04%
1990	100828	26213	127041	31613	23584	55197	27.33%

source: Ministry of Education

Table A.35 Graduates from public higher education

PORTUGAL	Universities	Universities + polytechnics
1980		10942
1981		
1982		
1983	7609	8915
1984	8436	9569
1985	8552	9694
1986	9151	10514
1987	8808	10292
1988		11395
1989		12053

sources: Ministry of Education
University + polytechnics 1983-1985: M. Abecassis and M. Carmelo Rosa, Portugal, in: *From Higher Education to Employment*, vol IV, OECD, Paris, 1992, p. 39

Table A.36 Teaching staff in higher education, full-time and part-time (*headcount*)

PORTUGAL	University	Polytechnics
1980	6906	3789
1981		
1982		
1983		
1984	6949	4323
1985	7614	4862
1986	9555	3235
1987	10246	2574
1988	10486	2491
1989	10708	2738

source: Ministry of Education

Table A.37 Public expenditure on higher education as a percentage of GDP

PORTUGAL	Universities	Polytechnics	Total
1980	0.378	0.040	0.418
1981	0.397	0.044	0.441
1982	0.435	0.037	0.471
1983	0.397	0.048	0.446
1984	0.384	0.062	0.446
1985	0.419	0.070	0.489
1986	0.470	0.109	0.579
1987	0.502	0.126	0.628
1988	0.567	0.133	0.701
1989			0.784
1990	0.736	0.160	0.896

source: Ministry of Education

Table A.38 Enrolment in higher education (*headcount*)

SPAIN	University faculties & colleges	Higher technical schools	University schools	Total
1980	433911	46147	179040	659098
1981	441473	45880	182495	669848
1982	464624	46278	181769	692671
1983	507101	48700	189017	744818
1984	537725	50991	199452	788168
1985	576896	53701	223507	854104
1986	605543	55967	240774	902284
1987	645402	59843	264167	969412
1988	672145	63893	290980	1027018
1989	772914*		320172	1093086
Δ 80-89	+ 62 %*	+ 47 %**	+ 79 %	+ 66 %

source: Anuario de estadística universitaria, Consejo de Universidades
note: * Higher technical schools included
** For the calculation of the growth rate, enrolment in higher technical schools in 1989 has been extrapolated to 67900

Table A.39 Graduates from higher education

SPAIN	University faculties and colleges	HTS	University schools	Total
1980	41115	2635	27524	71324
1981	45397	2906	33760	82063
1982	37831	3156	35823	76814
1983	43456	2823	34767	81046
1984	47538	3017	34532	85087
1985	52543	3031	35499	90873
1986	58979	3308	36533	98820
1987	61772	3431	40904	106107

source: Anuario de estadística universitaria, Consejo de Universidades

Table A.40 Teaching staff in higher education

SPAIN	University faculties and colleges	HTS	University schools
1981	24761	6470	11571
1982	25712	6487	12195
1983	26533	6831	12402
1984	27000	6772	12803
1985	27224	6658	13064
1986	27728	6761	13732
1987	30735	6852	14232
1988	32590	7399	15414
1989	33080	7510	16417

source: Anuario de estadística universitaria, Consejo de Universidades

Table A.41 Public expenditure on higher education as a percentage of GDP

SPAIN	Source I	Source II
1980	0.30	
1981	0.30	
1982	0.33	
1983	0.38	
1984	0.37	
1985	0.36	
1986	0.42	
1987	0.43	0.49
1988	0.48	0.55
1989		0.65
1990		0.64

sources: I Kaiser et al., *Public expenditure on higher education*
II J.G. Mora and F. Pérez, *La financiación de la educación superior en España*, paper presented at the Workshop Financing Higher Education, organised by IVIE, Valencia, 4-5 November 1992

Table A.42 Enrolment in higher education (Great Britain)

G.B.	University		Polytechnics & colleges		Open university
	Full-time	Part-time	Full-time	Part-time	Part-time
1980	298700	31900	221700	181100	67800
1981	300200	33200	241300	185800	71000
1982	293400	33500	257700	188500	74600
1983	291700	34600	273400	195300	76300
1984	290600	36000	282700	195100	77400
1985	295500	37100	288000	210000	78700
1986	301300	39400	294700	228400	81800
1987	305400	40700	303300	232700	85800
1988	317600	44500	308700	247500	85200
1989	334500	47900	335900	259400	89000
1990	352600	146900*	374800	271800	

source: Statistical Bulletins
note: * Open University included

Table A.43 Higher education qualifications awarded (Great Britain)

G.B.	University		Polytechnics & colleges		Open university
	Degrees	Other qualifications	Degrees	Other qualifications	Degrees
1980	84300	14000	31000		6300
1981	87200	14600	34000	74600	6500
1982	89800	14500	37200	72000	6400
1983	93100	13000	41200	76100	5600
1984	92300	13500	46800	84500	5900
1985	92000	14300	51400	90600	6700
1986	91000	14300	53600	89500	6600
1987	94200	15600	55600	91600	6500
1988	96200	15700	57400	91700	6500
1989	98200	16400	59200	98600	6400

source: Statistical Bulletin 11/90, 10/91

Table A.44 Teaching staff in higher education

G.B.	University full-time	University full-time & part-time	Distance learning	Other third level
1984	32670	35345	5906	42595
1984	33260	35588	5723	42489
1986	33456	35670	5932	43300
1987	33407	35460	6207	48506
1988	33049	35471	6252	44172
1989	33210	36107		

sources: University Statistics 1989/90, vol. 1
UNESCO, Statistical Yearbook

Table A.45 Public expenditure on higher education

G.B.	at current prices		as a percentage of GDP		
	Universities	Polytechnics & colleges	Universities	Index 1980=100	Polytechnics and colleges
1980	1041		0.45	100	
1981	1071		0.42	93	
1982	1283		0.47	103	
1983	1325		0.44	98	
1984	1360		0.43	94	
1985	1401		0.40	88	
1986	1450		0.39	86	
1987	1597		0.39	86	
1988	1726		0.38	84	
1989	1852	1114	0.37	82	0.22
1990	1836	1108	0.34	76	0.21

note: Central government's own expenditure. For the universities, data are provided for Great Britain; for Polytechnics and colleges, data cover England only. Fees and support grants (in 1989 0.11 % of GDP) are not included since no consistent time series was available. Percentages of GDP are lower than the data in the report of Kaiser et al. but this difference can be explained by the omission of student grants and fees.

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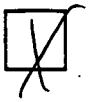

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