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**Educational Attainment:
A French-German Comparison**

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Non technical summary

This documentation analyses the structure of educational attainment in France and Germany. While France and Germany share in many respects similar socio-economic structures, they sharply differ with respect to their educational system. First, the three-tiered secondary school system in Germany, where pupils are streamed after primary schooling according to their learning ability into different secondary schools, contrasts with the situation in France, where all pupils attend a single structure up to upper secondary level. Moreover, in France, general education is more prized than vocational education. The French maturity certificate, has a key position in the educational system, while vocational education tends to be reserved to those pupils who have failed on the way to maturity completion. By contrast, the German education system is strongly oriented towards vocational training and the apprenticeship has a central position. At the higher education level, a relatively homogenous system in Germany can be opposed to a much more differentiated landscape in France, both in terms of types of institutions and of gradation of educational credentials.

These differences have repercussions on the distribution of educational attainment in both countries. With the help of a comparative typology of educational credentials established in this documentation, empirical evidence on the distribution of educational attainment in France and Germany could be gathered from representative data sets.

A striking feature is the stronger dispersion of educational attainment in France compared to Germany. This is obvious at the secondary level, where more French than German people do not have any school degree at, while more French people hold the general maturity certificate, but also in terms of final educational attainment. Thus, more French than German people do not hold any vocational degree, but there are also more higher education graduates in France, while the distribution of educational attainment in Germany is concentrated around basic and intermediate vocational qualifications. There has been in both countries a substantial upgrading of the qualification structure since the mid-1980s, but the expansion has been stronger in France, especially among women.

Gender differences are more pronounced in Germany. French women do better at school than French men, and they have increased their comparative advantage, particularly with respect to maturity certificates. In Germany also, women have improved their position compared to men, but this expresses in a strong progression of intermediate school certificates, while men have conserved their advantage in terms of maturity certificates. In terms of final educational attainment, however, men do better than women in both countries, but the gender gap is much more pronounced in Germany, particularly at the higher education level. In both countries, women have improved their position compared to men since the mid-1980s, but the expansion has been stronger in France, and in Germany, it was limited to qualifications below tertiary level.

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1 Introduction

The qualification structure of the population is commonly viewed as an essential element for economic and social development. Indeed, economic growth largely depends on the ability of firms to find, at an acceptable price, a labour force disposing of the qualifications needed for their activity. From a social point of view, the qualification of individuals determines to a large extent their chances of finding a job and thus their chances of not having to rely on social solidarity. Beside skills acquired through work experience or specific training courses, the initial educational attainment is a major component of one's overall qualification. Numerous studies state the link between the distribution of educational attainment and economic performance, at the individual as well as at the aggregate level. Therefore, it is of interest to analyse in detail the structure of educational attainment with a view to assessing the strengths and weaknesses of a country regarding this essential socio-economic factor. In order to identify the specific features of educational attainment in one country, it is particularly helpful to compare it to another country.

In this documentation, the detailed structure of educational attainment in France and Germany is examined in a comparative manner. France and Germany are interesting objects of analysis for this issue insofar as they share in many respects similar socio-economic structures and a comparable level of economic development, while they sharply differ in major characteristics of their educational system. A French-German comparison thus provides some insights into the way institutional differences are reflected in the distribution of educational attainment in the population, which in turn, has repercussions on economic outcomes. Fortunately, we dispose of representative data sets for France and Germany, which make it possible to conduct parallel statistical analyses for the very same time period (1984-99) for both countries. Beside comparisons on the overall level and structure of educational attainment itself in both countries, special emphasis is laid on developments over time and on gender differences. However, comparing educational attainment in France and Germany requires that an adequate and comparable measure for educational attainment be defined for both countries. All the difficulty consists in finding a measure for educational attainment which, on the one hand, accounts for the relevant hierarchies of credentials within each country while being suited to highlight similarities and differences across countries. This, in turn, requires a good understanding of the logic underlying the education systems. Therefore, it is essential to compare in a first step the educational institutions, in particular the organisation and the basic principles of the respective education systems if misinterpretations due to insufficient knowledge of the institutions are to be avoided.

The documentation is organised as follows. Sections 2 and 3 outline in a comparative manner the main features of the education system in France and in Germany. Based on this knowledge, a comparative typology of educational

credentials can be established in Section 4. Hereby, the objective is to provide a measure for educational attainment suited for a French-German comparison and implementable with data sets commonly available for research. Finally, a broad statistical overview of various aspects of the educational distribution is conducted in Section 5. This empirical analysis is expected to provide some elements of interpretation of the observable differences between France and Germany in outcomes related to education. Thus, the aim of this documentation is twofold. Beyond the primary objective of analysing educational attainment in a French-German comparison, it is also intended to serve as a practical tool for other comparative analyses related to educational outcomes in France and Germany.

The description of the institutional features of the education systems is based on information drawn from various sources. The main source is the information provided by the Eurydice organisation (<http://www.eurydice.org/>), an information network on education in Europe, which prepares and publishes comparative analyses of the education systems in Europe as well as specific studies on subjects of European interest related to education (see for instance Eurydice/Cedefop, 1995 or Eurydice, 2000). A large part of this information is available online, in particular through Eurybase, the online database of Eurydice. This was supplemented by information from the European Commission (see Communities, 1998, for the field of higher education), from the national ministries for education (<http://www.bmbf.de/> for Germany and <http://www.education.gouv.fr/> for France) as well as from various publications (Rothe, 1995, Moebus and Verdier, 1997, Brauns, Müller and Steinmann, 1997).

2 Administration and distribution of responsibilities

France and Germany differ a lot with respect to the distribution of responsibilities for educational matters. Broadly speaking, a very centralised French education system can be opposed to a decentralised education system in Germany.

Germany. The German education system is characterised by the federal structure of the Federal Republic of Germany, which counts sixteen *Länder* (federal states)¹, and about 16.000 communes. Each *Land* has its own constitution and Government. The Basic Law (*Grundgesetz*) stipulates that legislative powers basically fall to the *Länder*, unless the Basic Law confers them explicitly to the Federation (*Bund*). Thus, education policy is primarily the responsibility of the *Länder*.

The Federal Government's responsibilities in educational matters include essentially the regulation of financial assistance for pupils and students, the promotion of research, the regulation of distance-learning courses and the passing of

1 Five *Länder* were re-introduced after German unification in 1990.

framework legislation on the general principles of higher education (*Hochschulrahmengesetz*). The Federal Government also provides legal provisions for civil service employment (e.g. for teachers and professors). The *Länder* make the legal provisions set at the federal level more concrete by creating and implementing the relevant *Land* legislation.

The Basic Law also sets the framework for the cooperation between the Federation and the *Länder* in educational matters, which is necessary to guarantee a uniform fundamental structure of the school system in Germany. This cooperation takes place within the framework of the *Bund-Länder* Commission for Educational Planning and Research Promotion (*Bund-Länder-Kommission für Bildungsplanung und Forschungsförderung, BLK*), in which the Federal Government and the governments of the *Länder* are represented. Furthermore, *Länder* governments also cooperate among themselves within the framework of the Standing Conference of the *Länder* Ministers of Education and Cultural Affairs (*Ständige Kultusministerkonferenz, KMK*). The *Länder* have agreed upon, among other things, the designation and organisation of the various types of educational institutions and the mutual recognition of qualifications in all *Länder*.

In the segment of pre-primary education, about 70 percent of all institutions are run by the voluntary bodies of the youth services, mainly churches and welfare services, while the remaining 30 percent are administered by the communes. As far as primary and secondary education are concerned, the authority of the *Länder* extends not only to the organisation of the schools themselves, but also to the definition of teaching objectives and curricula and to the supervision of teachers. As a rule, higher education is provided by public institutions under the authority of the *Länder*. However, the higher education institutions have administrative autonomy in the limits of legal provisions. This autonomy includes both academic matters, such as the establishments of curricula, and administrative matters such as personnel, economic, budgetary and financial administration.

The responsibility for initial vocational training is shared by the *Länder* and the Federation. While the Federation is responsible for the regulation of in-company vocational training, the *Länder* are responsible for vocational schools and define among other things the curricula. The chambers (of commerce and industry, of agriculture etc.) control the practical implementation of national regulations in companies providing vocational training. All actors cooperate within the framework of the so-called "dual" education system.

Almost all schools - general, vocational or of higher education - are public institutions. Teachers at public schools are usually civil servants². In principle,

2 The majority of teachers in the *Länder* in the former German Democratic Republic (GDR) currently hold the status of salaried employees. The KMK reached an agreement in May 1993 on the "Recognition of Teacher Training Courses in the former GDR and their Assignment to Conventional Career Paths" in order to clarify the salary groups of teachers who received their training in the former GDR. The agreement has helped to ensure that regulations are drawn up under which east German teaching staff can obtain civil servant status and be integrated into the salary structure of the *Länder* in Western Germany.

attendance to all public schools is free of charge. Schools run by voluntary bodies are also subject to state supervision and are supported financially by the *Länder* or the communes. For their school-leaving degrees to be recognised, they must comply with the relevant *Land* regulations concerning courses taught, teacher qualifications and examinations. Higher education is mostly free of charge. Only a low "social contribution" (*Sozialbeitrag*) or "contribution to the student administration" (*Studentenwerksbeitrag*) is charged for the use of social facilities. Despite the allocation of major public subsidies to *Kindergärten*, and of church tax receipts in the case of church-run *Kindergärten*, the parents have to pay fees for pre-primary institutions, which may depend on their income. Pupils in general and vocational education (from the tenth school year on) may obtain financial assistance in the form of a grant depending on parental income. Students who have few other means are entitled to receive financial assistance under the terms of the Federal Training Assistance (*Bundesausbildungsförderungsgesetz*, in brief BAFöG) partly in the form of an interest-free loan, partly as a grant.

France. The French education system is characterised by its high degree of centralisation, even though the process of decentralisation³, initiated in 1982, has somewhat altered the distribution of responsibilities also in educational matters. Metropolitan France (i.e. without oversea *départements*) is composed of 22 regions, each of which containing two to eight *départements* and counts about 36.000 communes.

Education policy remains primarily the responsibility of the central State. Thus, the Government is responsible for the definition and the implementation of education policy in accordance with the Constitution. The State defines educational guidelines, curricula and contents of examinations, the latter having national validity. Furthermore, it is responsible for the recruitment, the training, the administration and the salaries of teaching and administrative staff and is directly responsible for all matters concerning tertiary education as well as for initial vocational training.

For certain specific fields of education policy, however, regional and local authorities were vested with new responsibilities. Thus, each authority is now responsible for a particular level of education: the regions are responsible for building and maintaining the *Lycées*, for specialised institutions and have important powers regarding vocational training; the *départements* are responsible for building and maintaining *Collèges* (lower secondary schools) as well as for the provision of school transport; and the *communes* are responsible for building and maintaining pre-primary and primary schools.

Since 1985, the autonomy of *Collèges* and *Lycées* in teaching and educational matters has been recognised. However, this autonomy relates only to the definition of a specific school plan by which national objectives and curricula are to be

3 Decentralisation consists in transferring to regional authorities certain responsibilities which were previously exerted by the State.

implemented, taking into account the characteristics of the local socio-economic environment. Also universities have been granted administrative and academic autonomy since 1984, but this autonomy only takes a real meaning in 1989, when a contractual policy between the State and the higher education institutions⁴ replaced the traditional annual grants of resources by the central administration.

The State covers the salaries of teaching and administrative staff at all levels of the education system. However, the local authorities are now responsible for investment and operational expenditure in their respective field of responsibility⁵. Since the end of the 19th century, the State guarantees the availability of "compulsory, free and secular" public education. Nevertheless, private education is also allowed and present. Public education covers more than 80 percent of pupils up to upper secondary school. The bulk of private education is composed of Catholic institutions which signed a contract with the State. So doing, these institutions are committed to the timetables and curricula applied in public education and are subject to State supervision. The school fees charged by private institutions vary from school to school and may depend on parental income. The cost of apprenticeship is covered from two sources: an apprenticeship tax equivalent to 0.5 percent of the gross annual salary costs of companies⁶ and from the regional apprenticeship fund. The latter is funded by state transfers and by the regional council's own resources. The regions also contribute to the financing of universities together with the State. Universities only charge low registration fees, but in other tertiary level public or private institutions, fees may be higher. Students may receive financial assistance in the form of grants provided on the basis of social criteria or on the basis of the institutions' own criteria and interest-free loans.

3 Organisation of the educational career

In France, education is compulsory from age six to age sixteen, i.e. for ten years. Note that education rather than school attendance is compulsory. In Germany, school attendance is compulsory for all children older than 6 for 9 years of full-time general education and three years of part-time education in vocational training schools for those pupils not willing to pursue further general or vocational full-time education after the end of compulsory general education. In the French education system, all pupils follow a common core curriculum throughout primary and lower secondary education. A differentiation of educational tracks appears at the upper secondary level only. The situation is different in Germany, where

4 Each tertiary education institution defines a four-year development plan which leads to the negotiation and signature of a contract obliging the State to grant the required resources for the four-year period.

5 The regions also contribute to the financing of universities together with the State.

6 The liberal and agricultural professions are exempted from this requirement.

differentiation already takes place after the common primary education, when pupils are directed into different kinds of secondary schools.

The educational career can be broken down into a certain number of sequential stages, namely pre-primary education, primary education, secondary education and tertiary education. Figures 1 and 2 provide a synthetic overview of the education systems in both countries, which is developed in the following sections.

3.1 Pre-primary and primary education

Germany. In Germany, the *Kindergarten* is the traditional form of pre-school provision for children aged between three and six. This service does not come under an educational jurisdiction but under that of social services for children and young persons. Therefore, children in those institutions are looked after by trained educational and auxiliary staff, which are no teachers but educators. Beside *Kindergärten*, children over five may attend pre-school classes (*Vorschulen*) at primary schools, which aim at encourage children to learn by playing. Attendance of pre-school institutions takes place on a voluntary basis. As a rule, children attending pre-school institutions are not expected to achieve any specific level of intellectual attainment, even in the pre-school classes. The function of *Kindergärten* rather consists in the care and the general up-bringing of the child as well as the inculcation of basic social and behavioural rules.

Primary education is provided at primary schools (*Grundschulen*) and spans over four years (six years in Berlin and Brandenburg), generally on a half-day basis. It is common for all children. The *Grundschule* lays the foundations for secondary education. The acquisition of reading, writing and arithmetic skills plays a central role.

France. In France, contrary to Germany, nursery schools (*écoles maternelles*) are an integral part of the education system. The teachers in nursery schools have the same qualifications as the primary school teachers. Children between the ages of two and six may attend the nursery schools, and in practice, almost all children aged three to six do so. In order to provide a smooth transition from the pre-primary to the primary level, the upper class of the nursery school is part of the basic learning cycle which continues into the first two years of primary education. These nursery schools aim at contributing to the child's development, but also prepare them for primary school. Therefore, there exists a specific curriculum for nursery education and teachers decide on the basis of the child's achievement whether to introduce him or her into the primary level.

Primary education is common for all children and spans over five years. It is organised in two cycles: the basic learning cycle (*cycle des apprentissages fondamentaux*), which begins in the upper classes of nursery schools and continues for two years at the primary level, and the consolidation cycle (*cycle d'approfondissement*). The skills to be acquired are defined for each cycle. These

Figure 1: The German education system

24	Tertiary	University <i>Universität</i>			Higher technical college <i>Fachhochschule</i>	Technical college <i>Fachschule</i>	Night school <i>Abendschule und -kolleg</i>	Professional experience	
23									
22									
21									
20									
19									
18	Upper secondary	Comprehensive school <i>Gesamtschule</i>	Gymnasium 2 nd stage <i>Gymnasium-Oberstufe</i>	Specialized Gymnasium <i>Fachgymnasium</i>	Senior technical school <i>Berufsaufbau- und Fachoberschule</i>	Full-time vocational school <i>Berufsfachschule</i>	Vocational training in enterprise and vocational school <i>Duales System / Berufsschule</i>		
17									
16	Lower secondary	Comprehensive school <i>Gesamtschule</i>	Gymnasium 1st stage <i>Gymnasium-Unterstufe</i>	Intermediate secondary school <i>Realschule</i>		Lower secondary school <i>Hauptschule</i>			
15									
14									
13									
12									
11									
10	Primary	Orientation stage						Special school <i>Sonderschule</i>	
9									
8									
7	Pre-primary	Primary school <i>Grundschule</i>							
6									
5									
4	Pre-primary	Nursery school <i>Kindergarten</i>							
3									
Age	Education level								

Figure 2: The French education system

22	Tertiary	Graduate school <i>Grande Ecole</i>	University <i>Université</i>								
21											
20		Preparation to graduate school <i>CPGE</i>		Technical university <i>IUT (DUT)</i>		Higher specialized school <i>Ecole spécialisée</i>	Higher technical school <i>STS (BTS)</i>				
19											
18	Upper secondary	High school degree <i>Bac Général</i>	Technical high school degree <i>Bac Techno</i>	Technical degree <i>BT</i>	Vocational high school degree <i>Bac Pro</i>	Vocational degree <i>BEP</i>	Vocational certificate <i>CAP</i>				
17											
16								General and/or technological Lycée <i>Lycée d'enseignement général et/ou technologique</i>			
15	Lower secondary	General education		Technological education		Vocational education					
14											
13		Orientation stage <i>Collège</i>									
12	Primary										
11											
10		Primary school <i>Ecole élémentaire</i>									
9											
8	Pre-primary										
7											
6											
5		Nursery school <i>Ecole maternelle</i>									
4											
3											
Age	Education level										

include both disciplinary and general skills and a special emphasis is laid on the acquisition of language skills. The teaching load is significantly heavier in France than in Germany⁷. Until 1989, pupils could take the CEP (*Certificat d'Etudes Primaires*) examination at the end of primary education and receive the certificate of the same name in case of success.

3.2 Secondary education

3.2.1 Lower secondary education

Germany. After primary education, pupils are directed into different types of secondary schools according to their abilities. In the fifth and the sixth years, regardless of the school type attended, there is a phase of observation and orientation towards a further choice of educational path. In some *Länder*, this orientation stage is established as a separate stage, independent of the type of school attended. From the seventh year onwards, the school types are increasingly differentiated in terms of courses offered and requirements according to the school-leaving certificates aimed at. In most *Länder*, the different school types are:

- the *Hauptschule* (lower secondary school), which provides pupils with a fundamental general education. It generally comprise five years (six in some *Länder*). After obtaining their school-leaving certificate (*Hauptschulabschluss*), pupils may pursue vocational training or, for particularly able pupils, transfer to the *Realschule* to pursue general education;
- the *Realschule* (intermediate secondary school), which offers pupils an intermediate general education. It generally covers the fifth to the tenth grade (six years), and after obtaining their school-leaving certificate (*Realschulabschluss* or *Mittlerer Schulabschluss*), pupils may pursue vocational studies or transfer to school types providing a higher education entrance certificate like the *Gymnasium*;
- the *Gymnasium* (higher secondary school), which provides intensified general education and is designed to lead to a degree entitling to pursue tertiary level studies (*Abitur*). The first stage of *Gymnasium* studies corresponding to lower secondary education covers the fifth to the tenth grade (six years). At the end of the sixth year of *Gymnasium*, pupils who have achieved at least pass marks in all subjects are promoted to the upper level of *Gymnasium*;
- the *Gesamtschule* (comprehensive school), which combines (cooperative type) or merges (integrative type) the various forms of lower secondary

⁷ In 1997/98, the annual teaching load for a seven-year-old pupil amounted to 615 hours in Germany compared to 846 in France, and for a ten-year-old pupil 713 hours in Germany compared to 846 in France (Eurydice, 2000).

education mentioned previously. In the *Gesamtschulen* of the cooperative type, pupils are streamed according to their intended final school-leaving certificate, whereas *Gesamtschulen* of the integrative type form one single entity where children are streamed according to their ability level in each subject.

In recent years, some *Länder* have introduced new types of schools with different names depending on the *Land* (*Mittelschule*, *Sekundarschule*, *Regelschule*, *Regionale Schule*, *Integrierte Haupt- und Realschule* etc.). These new schools combine the educational paths of the *Hauptschule* and the *Realschule*. Moreover, special education is offered in so-called *Sonderschulen* (special schools) for children with learning disabilities or with some other physical or mental handicap.

The basic idea of the German system is to offer pupils a basic general education adapted to their needs and aptitudes, while allowing pupils to pass from one branch to another under certain conditions. For instance, not only pupils who have followed a *Gymnasium*-type course may be entitled to proceed to the upper level of *Gymnasium*. The entrance requirement may also be obtained by way of a *Realschulabschluss* of a certain merit or via qualifications from *Berufsaufbau-schulen* (vocational extension schools), *Berufsfachschulen* (full-time vocational schools) or *Fachschulen* (technical schools). However, in practice, upward mobility is rather limited.

France. After primary education, all pupils in France attend a single structure, the *Collège*⁸. Education in *Collège* spans over four years and is subdivided into two cycles: the observation cycle (first and second year) and the guidance cycle (third and fourth year). A national certificate (*Brevet National* or *Brevet d'Etudes du Premier Cycle*, BEPC) is awarded at the end of *Collège*, but pupils move up to the next level regardless of whether they pass or fail the BEPC. People who have failed the BEPC may request the DFEO (*Diplôme de Fin d'Etudes Obligatoires*) which attests that they have completed compulsory schooling.

At the end of the second year, the pupil has to choose between general and technological classes. In principle, this choice does not determine the pupil's subsequent options in upper secondary education. Pupils with learning difficulties can be placed in smaller third year classes (*classe d'integration*) which offer special assistance and take the place of a pre-vocational class. At the end of the third year, pupils may also choose a fourth year class leading to the vocational branch. Since 1992, this class has been gradually replacing the pre-apprenticeship class. Originally set up in vocational *Lycées*, the pre-vocational branch in the third and

8 The *Collège unique* was introduced by the Haby Law in 1975. Before this date, secondary education was divided - analogue to the German system - into three branches: the *Lycée* section, leading to the maturity certificate, the *Collège* section leading to short cycle secondary education and the *transition* section providing basic general education. The unification of the three branches at the lower secondary level followed two objectives: raising the general education level or the population and promoting social democratisation, the three-tiered system being viewed as too strictly segregated and unfavourable to poorer social groups.

fourth year has been progressively incorporated to the *Collèges* since 1990. At the end of the fourth year, pupils are directed towards one of the three branches of upper secondary education: the general track, the technological track or the vocational track.

3.2.2 Upper general or technical secondary education

In both countries, one can distinguish at the upper secondary level between general, technical and vocational education.

Germany. General education at the upper secondary level is provided in the upper classes of the *Gymnasium* (*gymnasiale Oberstufe*) and is usually divided into a one-year introductory phase and a two-year qualification phase. Pupils study subjects in three areas: i) languages, literature and arts, ii) social sciences and mathematics, and iii) natural and technical sciences. At the end of the three years of *Gymnasium*, pupils take the *Abitur* examination. Though this examination is organised at the level of *Länder*, the *Länder* have largely standardised the requirements of the examinations and agreed upon uniform criteria for a large number of subjects, so that the *Abitur* is recognised throughout all of Germany. Pupils who pass the *Abitur* receive a certificate which grants access to any branch of higher education (called *allgemeine Hochschulreife*, meaning general higher education entrance qualification). The assessment is partly based on a continuous assessment of the last two years of *Gymnasium*, and partly on the results of the *Abitur* examination.

Technical education at the upper secondary level is offered at a technical or specialised *Gymnasium* (called *Berufliches Gymnasium* or *Fachgymnasium* depending on the *Land*), which have no classes at the lower secondary level. Like the general *Gymnasium*, the study course spans over three years, but it emphasises career-oriented subjects, like business and engineering. To be admitted, a pupil must hold a certificate equivalent to the *Realschule* leaving certificate or qualify for the upper classes of general *Gymnasium*. The specialised subjects may be chosen in place of general subjects for the *Abitur* examination and pupils who pass the examination qualify for entry to any type of tertiary education (*fachgebundene Hochschulreife*). In some *Länder*, it is possible to obtain at *Fachgymnasien* a double qualification, i.e. the right to pursue higher education and a vocational qualification. In that case, the courses take four years and involve two separate examinations for the vocational qualification and for the *Abitur*.

France. General or technological *Lycées* prepare pupils in three years for the *Baccalauréat*, a national examination which entitles them to enter higher education. If the pupils fail this examination, they can request a secondary school leaving certificate which does not entitle them to pursue tertiary level studies (*Certificat de Fin d'Etudes Secondaires*, CFES). No continuous assessment enters the *Baccalauréat* results. The first year at the *Lycée* offers a common core

curriculum followed by all pupils and is essential for pupil's educational orientation. Depending on his preferences and abilities, the pupil chooses the type of courses he will attend in the following two years in accordance with the type of *Baccalauréat* aimed at. Thus, at the end of the first year in the *Lycée*, pupils may be directed to:

- three types of general *Baccalauréat*: L (literary), ES (economic and social) and S (scientific);
- six types of technological *Baccalauréat* (BTn): STT (tertiary sciences and technologies), STI (industrial sciences and technologies), STL (laboratory sciences and technologies), SMS (medical and social sciences) and in the agricultural field STAE (agricultural and environmental sciences and technologies) or STPA (farm-produce industry sciences and technologies);
- the technical certificate (*brevet de technicien*, BT). This certificate provides a qualification as a technician specialised in a specific area, but is not really of the same standard as the *Baccalauréat*. Holders of the *brevet de technicien* can either enter employment in their specific area of specialisation or continue their studies, but only at the lower tertiary level (primarily in the higher technical classes STS or in a university institute of technology IUT, see below).

3.3 Initial vocational qualification

3.3.1 Part-time vocational tracks

Germany. Following full-time compulsory education, most young people in Germany pursue vocational education and training courses, mainly through the so-called "dual" system, the German apprenticeship training system. This training system is referred to as dual because it is carried out at two different places, namely at a vocational school (*Berufsschule*) and at a firm. Training is provided within the framework of a civil-law contract between a company and the young person. The contract covers all important aspects of the training, like the duration of the training (generally about three years), the skill profile of the chosen occupation, the level of the basic allowance granted to the trainee, the amount of time devoted to training in the company and to learning at the *Berufsschule* etc. Thus, the contract includes both the duty of the trainee to learn, in the workplace as well as at the *Berufsschule*, and the duty of the business to provide training.

The *Berufsschule* is not only attended by apprentices, but also by those pupils who have left general education but are still required to attend compulsory education at least on a part-time basis. The *Berufsschule* provides pupils with general and vocational education, paying special attention to meet the requirements of vocational training. Pupils have the possibility to receive basic vocational train-

ing in a separate first stage, either in the form of a year's full-time schooling or through a dual system arrangement (*Berufsgundbildungsjahr*).

Pupils successfully passing the final examination receive a leaving certificate which proves that they have achieved the objectives of the dual training both in the workplace and at the *Berufsschule*. This certificate entitles them to admission to advanced vocational training, for example at a *Fachschule*, or enables them to work immediately as a qualified employee in one of the many state-recognised occupations for which formal training is required⁹.

France. Part-time vocational training (*formation en alternance*) is not the rule in France and was developed as a measure against youth unemployment. Thus, it is primarily an instrument of employment policy rather than of education policy. Part-time initial vocational education combines theoretical training with practical training in a company. Like in Germany, the young person in part-time training receives a salary, the level of which depends on the type of contract, age and seniority. The main form of part-time vocational education is the apprenticeship, a special route of initial vocational training introduced in 1971¹⁰, while the other training measures for young people between 16 and 25 were developed since 1983 and are based on a concept of continuous training:

- The apprenticeship training (*apprentissage*)

The apprenticeship training is based on an employment contract between a company and a young person (less than 26 years old). It combines the acquisition of know-how in a company with theoretical education in an apprenticeship training centre (*Centre de Formation des Apprentis, CFA*) with a view to acquiring a vocational degree of the upper secondary or tertiary education level. The duration of the apprenticeship ranges from one to three years. Employers are required to provide apprentices with practical training and to enrol them in a CFA providing instruction corresponding to the qualification called for in the contract. The great majority of apprentices are younger than 19, have a low level of qualification and prepare for a vocational certificate of the CAP/BEP type (about three quarters of the apprentices). However, the share of *Baccalauréat* holders undergoing an apprenticeship while preparing for a tertiary level degree (like a BTS, see below) is increasing.

The successive governments created a large series of part-time training measures for 16-25-year-olds which aimed at facilitating the integration of young

⁹ There exist about 370 recognised occupations, spanning almost all areas of the economy.

¹⁰ In France, the guilds (*Zünfte*) lost all privileges after the French Revolution in 1789. Successor organisations were not allowed to be constituted. Thus, after this date, in-company training was carried out within the framework of civil-law contracts. Models of part-time qualification in schools and companies were sporadically re-introduced during the 20th century (around 1920) but a legal anchorage was only achieved through the 1971 law.

persons into working life while providing a qualification. The main types of integration contracts are the following:

- The guidance contract (*contrat d'orientation*)

This training is offered to people aged up to 21 years who do not hold a technical or vocational certificate and have not completed secondary general education or to people aged up to 25 who have a certificate of the general or technological upper secondary level but no vocational certificate. In the former case, the maximum duration of the contract is nine months, in the latter case, it is six months. This contract aims, by providing vocational guidance, at giving youngsters access to employment or to help them re-enter a qualification process by way of a further apprenticeship, a qualification contract or reintegration into the education system.

- The qualification contract (*contrat de qualification*)

This type of training is offered to young people up to 25 years of age who wish to complement their initial training with a vocational course. The duration of the contract ranges between 6 and 24 months. Employers commit themselves to provide young people with employment and vocational training leading to a recognised qualification or a certificate. At least 25 percent of the total time of the contract must be spent for general, vocational and technological training.

- The adaptation contract (*contrat d'adaptation*)

These employment contracts are signed by a company and a young unemployed person up to 25 years of age and may be of limited or unlimited duration. As the name indicates, this contract is designed to provide training which allows the trainee to adapt to a specific kind of employment. It is a form of part-time training that links general, vocational and technological training and the acquisition of vocational skills during working time.

Interestingly, more and more *Baccalauréat* or tertiary level degree holders are engaged in qualification or adaptation contracts. There is a large number of other measures of part-time training, like the "individualised training credit" (*Crédit Formation Individualisé*, CFI), which was established in 1991 and gives young people the right to attend a personalised training leading to certification, or the "solidarity employment contract" (*Contrat Emploi-Solidarité*), introduced in 1990, which enables young persons with a qualification equivalent to a vocational *Baccalauréat* and having difficulty in finding employment to work half-time under a part-time employment contract. All these measures were introduced since the mid-1980s as a reaction to the high level of youth unemployment and should rather be seen as continuous rather than initial training.

3.3.2 Full-time vocational tracks

Germany. Beside the dual system, which involves the bulk of young people, vocational training may also be provided within the framework of full-time vocational schools. Broadly speaking, there are two types of full-time vocational schools:

- *Berufsfachschulen* (full-time vocational schools) and *Fachschulen* (technical colleges).

These schools prepare students for entry into an occupation and provide them with initial vocational training while they continue their general education. The *Berufsfachschulen* require only a lower or middle school leaving certificate (*Hauptschul-* or *Realschulabschluss*), while admission to the *Fachschulen* requires previous completion of a relevant vocational training or evidence of work experience in the relevant field. The *Fachschulen* train specialised middle-level staff expected to assume relatively important responsibilities within clearly defined areas.

- *Berufsaufbauschulen* (vocational extension schools) and *Fachoberschulen* (technical secondary schools).

These schools primarily confer entrance qualification for some kind of further studies rather than vocational skills as such. The *Berufsaufbauschulen* aim at students who have completed¹¹ vocational training and lead to the *Fachschulreife* certificate, which is equivalent to the intermediate certificate of the *Realschule*, a school entry requirement for certain vocational schools (*Berufsfachschule*, *Fachoberschule* and *Fachgymnasium*). The *Fachoberschule* allows pupils who have completed intermediate general education in a *Realschule* or *Berufsaufbauschule* to qualify for higher education via the *Fachhochschulreife* certificate, introduced in the late 1960s. However, the *Fachhochschulreife* only opens access to lower tertiary institutions (*Fachhochschulen*, see below), not to universities.

France. In France, vocational education is essentially provided through the national education system on the basis of full-time vocational schooling in vocational *Lycées* (*Lycées Professionnels*). There is a wide selection of vocational certificates, but here are the main ones:

- *Certificat d'Aptitude Professionnelle* or CAP (vocational aptitude certificate)

The CAP may be completed in three years after completion of the second *Collège* year, or in two years after the fourth year of *Collège* and is primarily designed to prepare students for a specific occupation (about 200

¹¹ Or still completing it, in which case students attend the vocational school on a part-time basis.

occupations are available). It can be obtained within the framework of full-time schooling at a vocational *Lycée*, or of an apprenticeship. Fewer pupils, nowadays, opt for a CAP after the second *Collège* year. This development is in line with the ambition of conducting all children to the end of upper secondary schooling and operating some streaming only after this stage (Brauns et al., 1997). The low-status option of a CAP is predominantly left to those pupils not being able to finish *Collège* education¹². After the CAP, the most able pupils continue their studies and prepare for another vocational certificate, like the BEP (see below), or the *Brevet Professionnel*¹³ (BP) or some other supplementary vocational certificates like the BEA/C/I/H/S (*Brevet d'Enseignement Agricole/Commercial/Industriel/Hôtelier/Social*).

- *Brevet d'Etudes Professionnelles* or BEP (vocational studies certificate)

The BEP may be completed in two years after completion of the fourth year of *Collège* and covers a more extensive field than the CAP (about 40 occupation groups). Holders of the BEP can enter working life but the BEP is increasingly seen as a springboard to continue further studies and to prepare for a vocational (or technological for the most able pupils) *Baccalauréat*. In case the technological *Baccalauréat* is aimed at, holders of the BEP can improve their chances of success by following an "adapted" first class (*première d'adaptation*). Other pupils will pursue their vocational education and qualify for an advanced or supplementary vocational certificate like the *Brevet Professionnel* (BP), *Brevet de Technicien* (BT) or the BEA/C/I/H/S mentioned above.

Both CAP and BEP courses include a substantial amount of general education in addition to technical and vocational education and periods of on-the-job training (*stages*).

- *Baccalauréat Professionnel* or *Bac Pro* (vocational *Baccalauréat*)

The vocational *Baccalauréat* was introduced in 1985 in order to enable the holders of a BEP to acquire a higher level of qualification. Unlike the technological *Baccalauréat*, the vocational *Baccalauréat* is primarily a vocational integration certificate leading directly to the exercise of an occupation, although theoretically, it also entitles pupils to enter university studies. Thus, it is targeted on specific occupations, whereas the technological *Baccalauréat* is much broader in scope.

12 Until 1991, those pupils could also pass the CEP (*Certificat d'Education Professionnelle*) after a one year course.

13 The BP can be obtained after at least two years of work experience in the respective occupation, or after at least five years of work experience for those people not holding a CAP. It is the master craftsmen certificate (corresponding to the German *Meisterbrief*).

3.4 Tertiary education

In Germany, the system of higher education is characterised by the traditional predominance of universities, even though there exist some other higher education institutions. Conversely, in the French system of higher education, there is a great variety of institutions, which may have different admission requirements and offer a wide variety of degrees.

3.4.1 University education

Germany. Universities and equivalent institutions (*Technische Universitäten, Technische Hochschulen, Universitäten, Gesamthochschulen*) are the traditional place where academic education is provided. They offer study courses in the whole range of subjects. The prerequisite for starting a course of university studies is proof of having a general or subject-specific university entrance qualification (*Allgemeine or fachgebundene Hochschulreife*)¹⁴. Typically, university study programmes lead to academic examinations (*Hochschulprüfungen*) like the *Diplom* or *Magister Artium*, but studies in specific fields (teaching careers, medicine or law) lead to *State examinations (Staatsexamen)* or also (theology) to church examinations (*kirchliche Prüfungen*).

The *Diplom* degree courses are divided into two cycles: a period of basic studies (*Grundstudium*) followed by advanced studies (*Hauptstudium*). Basic studies are generally concluded with an intermediate examination (*Zwischenprüfung* or *Vordiplomprüfung*), while advanced studies end up with the *Diplom* examination (*Diplomprüfung*). The duration of the basic studies cycle generally amounts to two years (four semesters) and the overall study duration until *Diplom* examination theoretically spans over eight to ten semesters (four to five years) depending on the type of studies chosen. However, the German university system leaves a large autonomy to the student, who may interrupt his studies for completing internships or stays abroad for instance, take on a part-time job to finance the studies or simply postpone the date of the examination. This often results, in practice, in a much longer study duration than the theoretical duration expected for the various study courses.

In the *Magister* degree programme, the students study two major subjects, or one major subject and two minors (e.g. German language and literature and history). The combination of different subjects aims at guaranteeing a broad study base. As a first degree, the *Magister* degree is usually awarded as *Magister Artium* (MA). The standard period of studies for a MA is 9 semesters (4.5 years). Studies are divided into foundation courses (*Grundstudium*) of four semesters ending with an intermediate examination and an advanced study cycle of five semesters including the *Magister* examination. The *Magister* degree is also conferred at the

¹⁴ In some disciplines (medicine, pharmacy, business etc.), however, demand far exceeds the number of student places available. Access to these disciplines is therefore restricted (*numerus clausus*).

end of a one to two-year postgraduate programme.

Study programmes in the fields of medicine (general medicine, veterinary, dentistry or pharmacy), of teaching careers and of law are sanctioned by *State examinations*. Training in law, for instance comprises a course of study in law at university, culminating in the first State examination (*Erstes Staatsexamen*). This first State examination degree provides access to a further phase of training on the job. This probationary period ends up with the second State examination (*Zweites Staatsexamen*), which qualifies the holder to the qualification concerned (e.g. lawyer).

Students who passed the *Diplom* or *Magister* examination or the first State examination with at least a "good" grade may take postgraduate courses, like a *Magister* or more typically a doctorate (*Promotion*).

France. Universities are public institutions admitting, as a rule without selection procedure¹⁵, all applicants in possession of a *Baccalauréat* or a certificate judged equivalent. University education is organised in three successive cycles, each of which leads to nationally recognised qualifications.

The first cycle lasts two years (two years of post-*Baccalauréat* education, in brief *Bac+2*) and leads to a certificate of general university studies (*Diplôme d'Etudes Universitaires Générales*, DEUG). At the end of this cycle, students not eligible for higher university degrees are selected out.

The second cycle may span over one to three years. It may lead to the *licence* (DEUG plus one year, i.e. *Bac+3*) or to the *maîtrise* (*licence* plus one year, i.e. *Bac+4*). Moreover, universities also offer, as part of the second cycle, engineering degrees (*maîtrise* plus one year or DEUG plus three years, i.e. *Bac+5* level, *maîtrise* degrees from a university institute of professional education (*Institut Universitaire Professionnel* IUP), acquired in three years after a first year of DEUG or of a preparatory class for the *Grandes Ecoles*, i.e. *Bac+4* level, and degrees from the university teacher training institutes (*Institut Universitaire de Formation des Maîtres*, IUFM), which admit students who have completed three years of post-secondary education (*licence* or *Bac+3* level) and lasts two years. In addition to nationally recognised degrees, universities may offer certificates on their own authority.

The third cycle offers successful graduates of the second cycle highly specialised education: a professional specialisation of one year with a compulsory period of in-company training, leading to a certificate of advanced specialised studies (*Diplôme d'Etudes Supérieures Spécialisées*, DESS, *Bac+5* level) or a training in research leading at the end of the first year to an advanced research studies certificate (*Diplôme d'Etudes Approfondies*, DEA, *Bac+5* level) and then to the preparation over three or four years of a doctorate (*Doctorat*, *Bac+8* level).

15 Except in the fields of medicine and pharmacy, where the number of student places is limited (*numerus clausus*) and in which students are selected at the end of the first year on the basis of their performance.

3.4.2 Non-university education

Germany. In the late 1960s, a new kind of higher education institutions was established in Germany, the higher technical colleges (*Fachhochschulen*, FH). The *Fachhochschulen* aim at preparing students for professional activities on the basis of application-related teaching, involving the practical application of scientific knowledge and methods. They are organised in the same way as universities and the courses offered cover predominantly the fields of engineering sciences, economics and business studies, and social sciences. The study programmes are particularly oriented towards practical applications and include periods of compulsory in-company training. To be admitted, students must hold a university entrance qualification (*allgemeine* or *fachgebundene Hochschulreife*) or the *Fachhochschule* entrance qualification (*Fachhochschulreife*). Studies at *Fachhochschulen* generally last four years and student's graduation time is more reliably predictable than in universities. While originally the *Fachhochschulen* were conceived as short-cycle institutions, there has been a continuous upgrading over time and many *Fachhochschulen* try to endow themselves for competition with universities¹⁶.

In some *Länder* (Baden-Württemberg, Bavaria, Berlin, Lower Saxony and Schleswig-Holstein), some other short-cycle institutions were founded as less academic institutions, the *Berufsakademien*, which transpose the principle of the dual system to the tertiary level (two to three years). In Baden-Württemberg, *Berufsakademien* are considered as being of the same level as *Fachhochschulen*, but in the other *Länder*, they are considered as coming in the category of the *Fachschulen*.

France. Beside universities, a large number of public and private institutions offer tertiary level education in France:

- Short term higher education programmes

They generally cover two years after *Baccalauréat* completion and lead to a certificate of technical or professional education. University institutes of technology (*Institut Universitaire de Technologie*, IUT) deliver after two years a university technology certificate (*Diplôme Universitaire de Technologie*, DUT) and entitle the holders to take on managerial positions in the secondary or tertiary sector. Admission to an IUT is subject to selection. Higher technical classes (*Sections de Techniciens Supérieurs*, STS) offer two years of highly specialised training which leads to an advanced technical certificate (*Brevet de Technicien Supérieur*, BTS). Admission to an STS is based on an applicant's dossier. Beside IUT and STS, students may prepare in two years for a certificate of scientific and technical studies (*Diplôme d'Etudes Universitaires Scientifiques et Techniques*, DEUST) or

¹⁶ Some of them even strive for receiving the university status.

in up to four years a paramedical training, for which the admission procedure is based on a competitive examination.

- Long term higher education programmes

A wide selection of other higher education institutions, public or private, compete with universities in offering long-track study courses in the whole range of scientific disciplines. These very diverse institutions are known as "*Grandes Ecoles*" and have in common selective entrance procedures, generally based on competitive examinations for which students prepare in up to three years after *Baccalauréat* - depending on the type of institution -, in specific preparatory classes (*Classes Préparatoires aux Grandes Ecoles*, CPGE).

Private institutions can request recognition by the State of the diploma they deliver. There are three types of private institutions: private engineering schools (*écoles d'ingénieurs*), schools of business administration (*grandes écoles de commerce et de gestion*) and Catholic institutes.

There is also a variety of public institutions: institutes for political studies (*Instituts d'Etudes politiques*, IEP), scientific *Grandes Ecoles*, like the *Ecole Nationale des Arts et Métiers*, *Ecoles Normales Supérieures* (ENS), *Ecoles Supérieures*, like the *Ecole Nationale d'Administration* (ENA, public administration), the *Ecole Polytechnique* (engineering), the *Ecoles Nationales Vétérinaires* (ENV, veterinary), the *Ecoles d'architecture* (architecture).

There is a well-known hierarchy of *Grande Ecoles* within their specific fields. The schools with the best reputation are extremely selective and have the vocation to train an "elite" expected to take on responsibilities in the key positions of the economy. If in the last decade, a variety of far less prestigious *Grandes Ecoles* have been founded, the elite, whether in the civil service, academia or in the private economy, is in large part still recruited from the traditional *Grandes Ecoles* (see Bauer and Bertin-Mourrot, 1995).

4 Measurement of educational attainment

In empirical research, various measures of educational attainment are used, ranging from the number of schooling years to test scores or typologies based on the educational certificates. As a matter of fact, there is no consensus view on how to measure educational attainment and the relative merits of each measurement depend highly on the specific structure of the education system observed (Brauns et al., 1997) as well as on the specific purpose followed. The difficulty of comparing educational attainment across countries is that an educational classification is needed which, on the one hand, accounts for the relevant hierarchies of credentials within each country while being suited to highlight similarities and differences across countries. Some international classifications of educational attainment have been developed, like the ISCED (OECD, 2000) or the CASMIN

(König, Lüttinger and Müller, 1988) typologies, which enable to run comparative analyses on a broad range of countries. However, due to their international focus, these classifications need to be applicable to a large number of countries, and unfortunately, this cannot go without certain compromises.

Therefore, the objective here is to construct a classification scale specifically designed to capture institutional differences and similarities between the French and the German education systems in their distinctive features as we observed them in the previous sections. Hereby, the aim is not to construct some kind of ideal comparison scale for France and Germany, but rather an implementable one, given the existing data sources available for empirical research. The first section describes the data available, the possibilities they offer and the limitations they impose, before we proceed in the next section to the elaboration of the classification scale itself.

4.1 The data

The empirical analysis of the qualification structure in France and Germany in the subsequent sections is based on the German Socio-Economic Panel (GSOEP) for Germany and on the Employment Survey (*Enquête Emploi*) for France. Fortunately, in the other existing national data sets (like *Mikrozensus* for Germany or the Training and Vocational Qualification Survey (*Enquête Formation et Qualification Professionnelles* (FQP) for France), the variables related to education are very similar to those available in the GSOEP and in the Employment Survey, respectively. Thus, the classification of educational credentials developed here may also be used for these other data sets.

The German Socio-Economic Panel. The GSOEP is a longitudinal household survey conducted on an annual basis since 1984. In the first wave, some 12,000 individuals aged 16 and over distributed across roughly 6,000 households were interviewed. The information available is drawn from the statements of the individuals. Individual and household identifiers make it possible to track individuals over time. Due to panel attrition, sample size reduces somewhat each year. Initially, the sample only referred to residents in West Germany, but following German unification, the sample was extended to the former German Democratic Republic in 1990. The GSOEP is representative of the population residing in Germany and contains a large number of socio-economic variables on demography, education, employment, income, housing and health. For further information on the GSOEP, see Haisken-DeNew and Frick (2000).

Information on education in the GSOEP refers to the highest degree obtained in terms of secondary education, vocational training and higher education. Compared to the French data, the codes of the educational variables are significantly less detailed. Combining the information drawn from these three variables on secondary, vocational and higher education makes it possible to construct an in-

indicator of final educational achievement. Alternatively, the information of the highest degree obtained in the respective educational fields may be used to build a quantitative estimator of educational achievement by estimating approximately the number of years of school attendance, using standard or typical durations required to complete specific degrees. No information is available on the field of study of the highest degree obtained in the GSOEP.

The Employment Survey. The Employment Survey is an annual household survey which is representative of the population residing in metropolitan France (without oversea *départements*). All the surveys from 1968 onwards are available for research. In the 1982-89 series, the survey covers about 150,000 individuals aged 15 and above, distributed across approximately 80,000 households. The information stems from the statements of the persons asked. From 1990 onwards, the sample size was reduced somewhat and the sample population counts some 135,000 individuals distributed across roughly 65,000 households. To avoid sample size reduction due to panel attrition, one third of the sample is renewed each year. This means that it is possible to track one third of the sample over time for a period of three years. The Employment Survey contains detailed information on employment, job search, education and vocational mobility. For further information on the Employment Survey, consult the online information available under <http://www.iresco.fr/labos/lasmas/enqempl.htm>.

The information on educational achievement is much more detailed for France than for Germany. First, precise information is available regarding the age at which the person asked finished his or her education, which makes it possible to determine precisely the actual number of years of education received in case this is needed. Moreover, the data distinguishes between the highest degree obtained and the highest level of education attended regardless of the obtention of a degree or not. Since only the highest degree obtained is available for Germany, the information on the highest level of education attended without obtention of a degree should not be used for comparisons with Germany. Therefore, in the following, the notion of educational attainment or level of education will refer to the highest degree obtained. Like for Germany, French respondents are asked to indicate the highest degree they obtained in general, in technical/vocational and in higher education. This similar structure is helpful with a view to elaborating a classification for comparison purposes. On the other hand, the information on the type of educational credential obtained is more precise for France than for Germany. For example, the higher education variable contains more than 10 categories instead of the sole distinction between lower and upper tertiary degrees in the German data¹⁷. Beside the mere statistical priorities, this difference in the degree of precision partly reflects the different structure of the education system itself, since, as seen above, the German education system of higher education is

17 However, the distinction between *Bac+3* and *Bac+4* or above is only available after 1992, when an additional question was introduced.

less differentiated than the French one in terms of degree levels. Whatever the reasons, an unfortunate consequence is that part of the information has to be given up if a comparative classification is to be established. Indeed, by making things comparable, one automatically loses information when the information provided in one data source is more detailed than in the other one. Analogue to the German data, there is no information on the field of the completed studies in the *Enquête Emploi*.

4.2 Typology of educational attainment

Based on the data available on the highest degree obtained in general, vocational and higher education, we can now construct a comparable typology of educational attainment which can be implemented using the GSOEP and the Employment Survey data. By doing so, one has to be careful about the national terminology, which might be misleading. For instance, to what extent is the French *Baccalauréat* really comparable with the German concept of *Abitur*, the German *Fachhochschule* comparable with a French short-track tertiary level certificate (two years after *Baccalauréat*)? What should be done for instance with the French *Grandes Ecoles*, which have no equivalent in Germany? Finding answers to these questions requires a thorough understanding of the educational systems, but since the systems present obvious differences, there can be no perfect correspondence of diploma. The classification developed here gives priority to the internal consistency of the hierarchy of educational credentials rather than to strict comparability across countries. Indeed, such a typology does not aim at defining strictly identical educational categories, which would be neither possible nor desirable, but rather to provide a tool for comparative analyses of educational attainment or its outcome in France and Germany. Only these analyses will provide real evidence on the degree of comparability between France and Germany with respect to educational attainment. In the following, only synthetic denominations of the credentials are used. Of course, also credentials of an equivalent level are meant. Please refer to the description of the credentials in Section 3 and to the glossary in Appendix A in case you need more detailed information.

A look at the national scales proves useful, for it reveals the logic underlying the hierarchical ordering of the educational credentials. In France, an official grid of qualification levels was introduced in 1969:

- Level VI: completion of the first cycle of secondary education
- Level V bis: completion of the second cycle of secondary education without achievement of a vocational certificate
- Level V: completion of basic vocational education (CAP, BEP or equivalent) without completion of the *Baccalauréat*
- Level IV: *Baccalauréat* (general, technological or vocational), BT, BP and equivalent

- Level III: diploma at *Baccalauréat+2* level (BTS, DUT, DEUG etc.)
- Level II: diploma at *Baccalauréat+3/4* level (*licence, maîtrise, diplôme de Grande Ecole* etc.)
- Level I: postgraduate degree, i.e. diploma at *Baccalauréat+5* level and beyond.

As appears from this grid, in France, the completion or not of the *Baccalauréat* is a key discriminating factor with respect to educational attainment. This reveals French emphasis on general education and explains that three-level scales generally comprise:

- Levels VI, V bis, V: less than *Baccalauréat*
- Level IV: *Baccalauréat* (including vocational and technological *Baccalauréat* and certificates of equivalent levels)
- Levels III, II, I: more than *Baccalauréat*.

In Germany, no such official grid is available, but observing the education scales typically adopted in official statistics reveals that qualification levels are ranked according to the achievement in vocational education only, and not in general education. Typically, a four-level ranking is adopted:

- Unskilled: no vocational degree
- Low skilled: basic vocational qualification (e.g. *Lehrausbildung*, i.e. apprenticeship)
- Medium skilled: intermediate vocational qualification (e.g. *Fachschule*)
- High skilled: tertiary education graduates.

The high skilled category is often divided into lower tertiary education graduates (e.g. *Fachhochschulen*) and upper tertiary education graduates (university graduates). Interestingly, the completion or not of the maturity certificate, the *Abitur*, is never reported. Note that the French level IV, which is referred to as *Baccalauréat* level, also includes some vocational types of *Baccalauréat* and other vocational or technical certificates considered as equivalent. Among these, the *Brevet Professionnel* is the master craftsmen certificate, which corresponds to the *Meisterbrief*, and is put in the *Fachschule* category in Germany.

Table 1 presents the typology proposed for measuring final educational attainment in France and Germany, using the information available in the GSOEP and in the Employment Survey. As mentioned before, this typology is also implementable with other data sets like *Mikrozensus* for Germany or *Enquête Formation et Qualification Professionnelles (FQP)* for France. The educational categories refer to the highest level of degree obtained and have been numbered in order to facilitate further analyses. For presentation reasons, only the most

Table 1: Franco-German typology of educational attainment

Level	Highest degree obtained
1	No vocational qualification
10	No degree G: no degree F: no degree
11	Lower secondary education G: <i>Hauptschule</i> F: CEP/DFEO
12	Intermediate secondary education G: <i>Realschule</i> F: BEPC
2	Basic vocational qualification
20	No or lower secondary education + basic vocational training G: no degree/ <i>Hauptschule</i> + <i>Lehre/Berufsfachschule</i> F: no degree/CEP/DFEO + CAP/BEP
21	Intermediate secondary education + basic vocational training G: <i>Realschule</i> + <i>Lehre/Berufsfachschule</i> F: BEPC + CAP/BEP
3	Intermediate qualification
30	Intermediate vocational qualification G: <i>Fachschule/Gesundheitsschule/Beamtenchule</i> F: BP/BEA/BEC/BEH/BEI/BES
31	Vocational maturity certificate G: <i>Fachhochschulreife</i> F: <i>Bac Techno/Bac Pro/BT</i>
32	General maturity certificate G: <i>Hochschulreife (Abitur)</i> F: <i>Bac Général</i>
33	General maturity certificate + vocational qualification G: <i>Hochschulreife</i> + vocational qualification (<i>Lehre/Fachschule</i>) F: <i>Bac Général</i> + vocational qualification (CAP/BEP/BP/ <i>Bac Pro</i>)
4	Tertiary level qualification
40	Lower tertiary education G: <i>Fachhochschule/Ingenieurschule</i> F: <i>Bac+2 (DEUG/BTS/DUT)</i>
41	Upper tertiary education G: <i>Universität, Technische Universität</i> F: <i>Bac+3/4 and beyond (Licence, Maîtrise, Bac+5, Grande Ecole)</i>

Note: G=Germany, F=France

representative degrees of each category are reported here, but of course, the categories also include degrees of an equivalent level. To take into account the specific attributes of the German and the French education systems, special attention has been paid to the distinction, for a given level of educational attainment, between general and vocational education as well as to the position of the maturity certificate.

5 Distribution of educational attainment

More often than not, it is rather problematic to compare figures on education drawn from various national sources. Indeed, as mentioned previously, the indicators used are likely not to be defined in the same way or not to be adequate for comparison purposes. Besides, the population observed might not be really comparable (whole population or labour force, age group considered etc.). In this respect, disposing of individual data is of considerable advantage, since it makes it possible to shape the sample in a way as similar as possible and to construct similar indicators. Making use of GSOEP and Employment Survey data as well as of the description and the definition of educational attainment specifically designed for this data, we proceed now to the empirical analysis of the distribution of educational attainment in France and Germany. This will provide useful insights into the quantitative importance of the various qualifications offered by the respective education systems such as described in the previous sections. Doing so, we will get an overview of the qualification structure of the population in both countries. Special emphasis is laid on similarities and differences between France and Germany with respect to the overall educational distribution, but also to developments over time and to gender differences.

The data available for Germany covers the period from 1984 to 1999. Therefore, we use the French data available for the very same years. Since the objective here is to provide a broad overview of the qualification structure of the population in both countries, we do not exclude particular groups. However, the following choices have to be taken into account.

Firstly, the analysis of Germany limits to the western part of Germany. This choice is motivated by the fact that developments over time are to be observed. Since re-unification has only taken place in 1990, including East Germany for the years after 1990 would have introduced a structural break in the data. Moreover, the education system was slightly different in the former German Democratic Republic, and the comparison between East and West Germany would require a separate analysis. Secondly, a compromise had to be found as far as foreigners are concerned. Foreigners are problematic as far as they completed their education abroad. In the German data, information is available on whether a person obtained the degree in Germany or abroad. Therefore, it would be possible to keep in the sample only those foreigners who studied in Germany. Unfortunately, such an information is not available in the French data. From 1992 onwards, it would

be possible to identify for foreigners the age of entry into France, but not for the previous years. Since data should be consistent over time and across countries, foreigners were eventually kept in the sample. This is not a severe problem insofar as foreigners represent only a minor part of the whole population, and that their educational attainment can be approximated by the national degree which is closest to the original degree obtained in terms of level. Thus, the following descriptive analyses give an overview of the qualification structure of the whole population residing in France and West Germany.

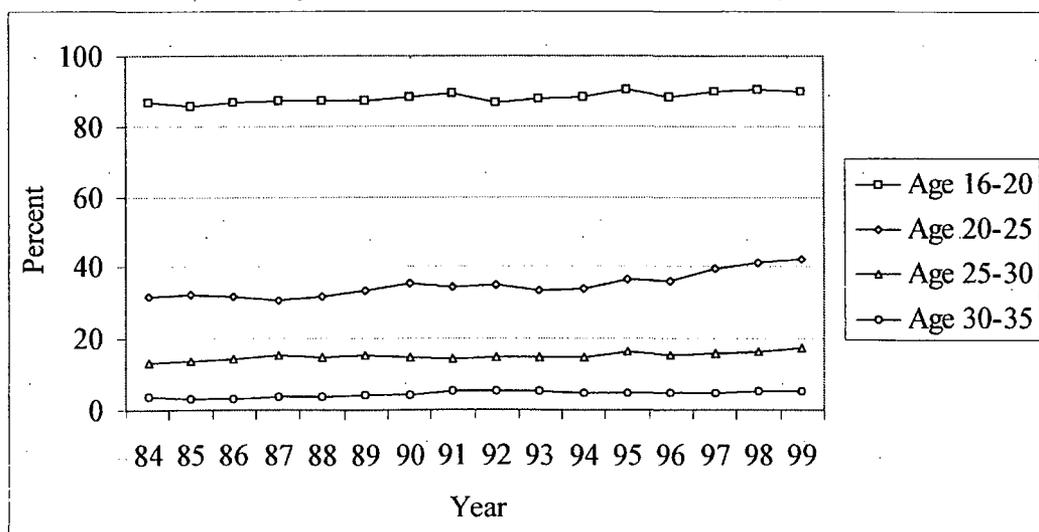
5.1 Participation in education

The first indicator we look at is a quantitative indicator of educational participation, namely the enrolment rate. The enrolment rate is defined here as the percentage of persons participating in initial education (either general, vocational or higher education) in a specific age group. Theoretically, we could observe how educational participation develops with each year of age and obtain in this way a precise picture of the age-enrolment profile for both countries. However, due to the relatively small size of the German sample, we would not have enough observations for each year of age in Germany. Thus, in the following pictures, we preferred to break down the life-cycle into a limited number of sequences defined as specific age groups.

5.1.1 Structure and developments over time

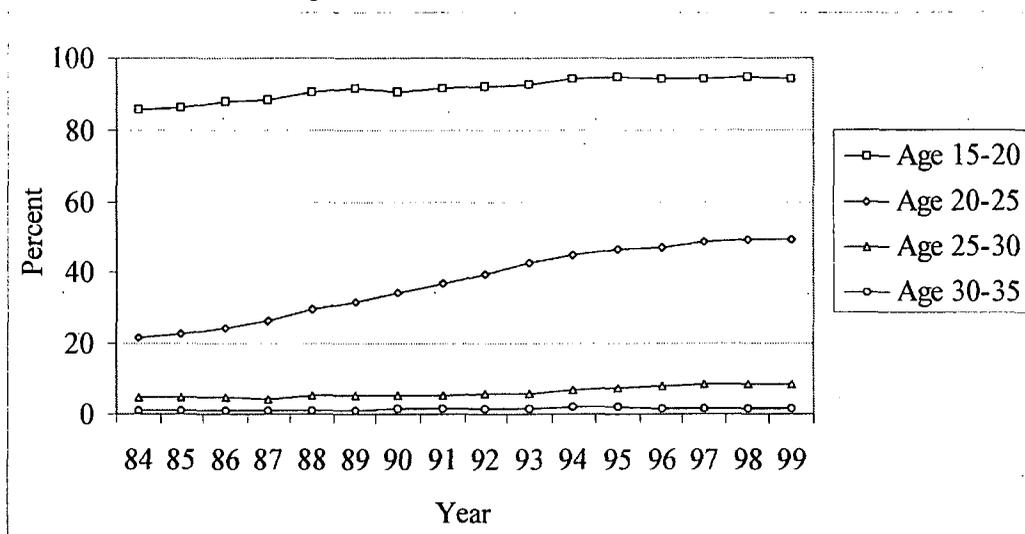
Figure 3 and Figure 4 depict the overall enrolment rates for different age groups in France and Germany.

Figure 3: Enrolment rates in Germany



As expected, participation in education decreases with age, in France like in Germany. Due to compulsory schooling, almost all children below 15 years of age

Figure 4: Enrolment rates in France



are enrolled in education, but after this age, the enrolment rates decrease.

A striking feature is that the enrolment rates are higher in France than in Germany for the younger age groups, but lower for the older age groups. Thus, a greater proportion of youngsters up to 25 participate in education in France. In particular, in 1999, the enrolment rate of the 20-25 year-olds amounts to almost 50 percent in France against 42 percent in Germany. Conversely, twice as many German (17.2 percent) as French (8.6 percent) are still enrolled in education in the age group 25 to 30, and while only 1.5 percent of 30-35 year old French are participating in education, more than 5 percent of the corresponding age group in Germany are enrolled. Thus, more people make short study courses in France, but those who make long study courses seem to study longer in Germany.

As far as trends are concerned, educational expansion turns out to have been stronger in France than in Germany since the mid-1980s. The rise in enrolments in age group 20-25 has been particularly dramatic in France, where participation in education rose from 20 percent in 1984 up to 50 percent in 1999. In the same period, the enrolment rates in the same age group rose from 30 to 40 percent in Germany. The expansion of educational participation has also been stronger in France than in Germany in the age group from 25 to 30.

5.1.2 Gender differences

Figures 5 to 8 differentiate the developments in enrolments by sex and show tremendous differences in the pattern of gender-specific educational participation between France and Germany.

In France, enrolments are slightly higher for women than for men in the younger age groups (15-20 and 20-25) over the whole period. In Germany, this is not the case: during the 1980s, men had significantly higher enrolment rates than women. However, convergence between men and women has occurred in the

Figure 5: Enrolment rates by gender in Germany: 16-25 year-olds

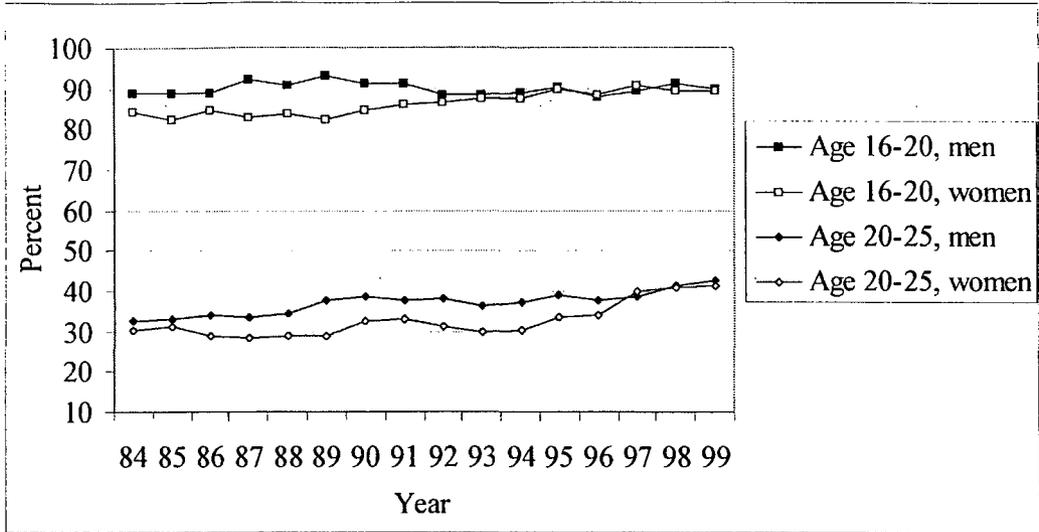
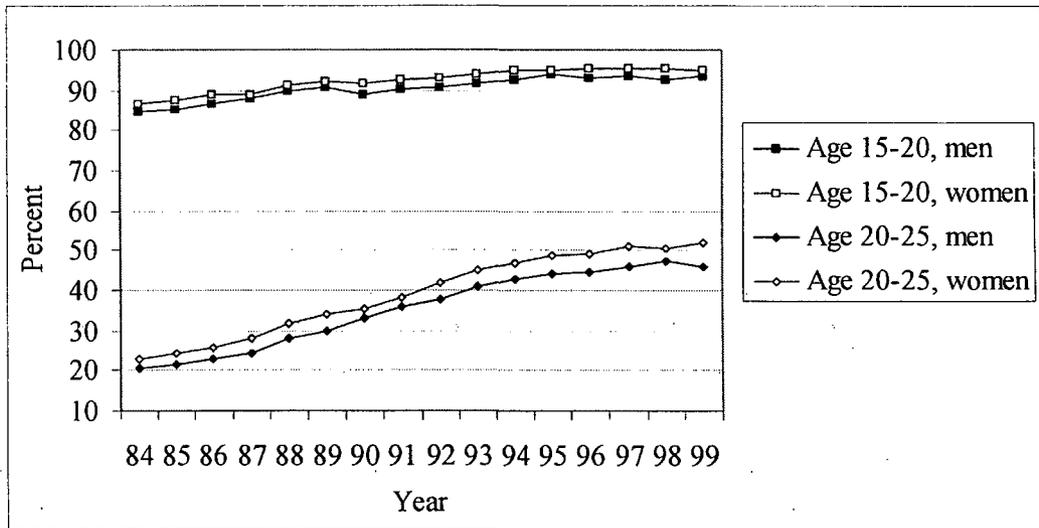


Figure 6: Enrolment rates by gender in France: 15-25 year-olds



1990s for the age group from 16 to 20 and only at the very end of the decade in the group aged 20 to 25.

In older age groups (see Figure 7 and Figure 8), differences between France and Germany with respect to gender differences in enrolments are even larger. In France, men had slightly higher enrolment rates until the beginning of the 1990s. Since the expansion of female educational participation has been stronger over the period, at the end of the century, educational participation of women has become higher than that of men in the age group 25 to 30, and similar to that of men in the age group 30 to 35.

In Germany, gender differences in enrolments at older ages are much more pronounced than in France. Thus, in 1999, almost 25 percent of German men

Figure 7: Enrolment rates by gender in Germany: 25-35 year-olds

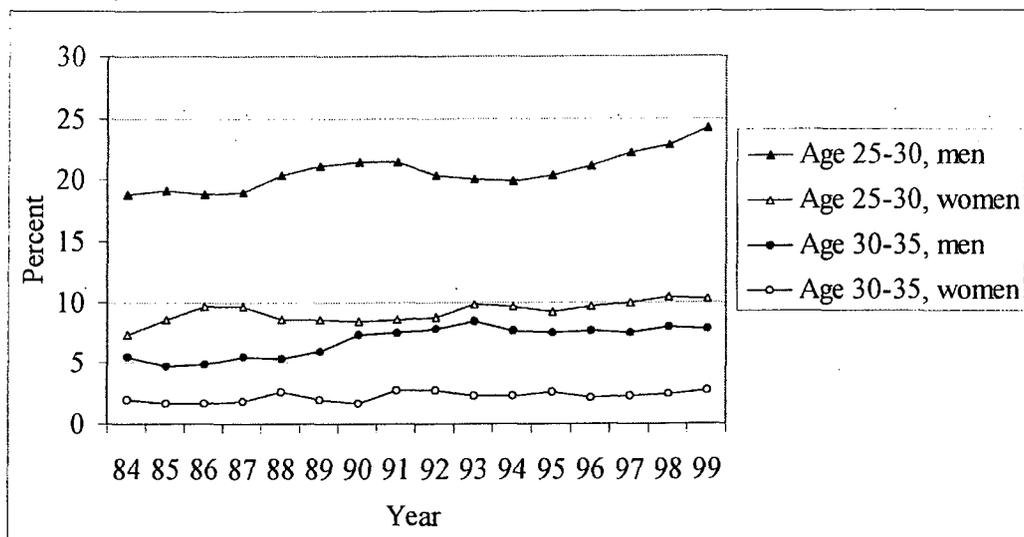
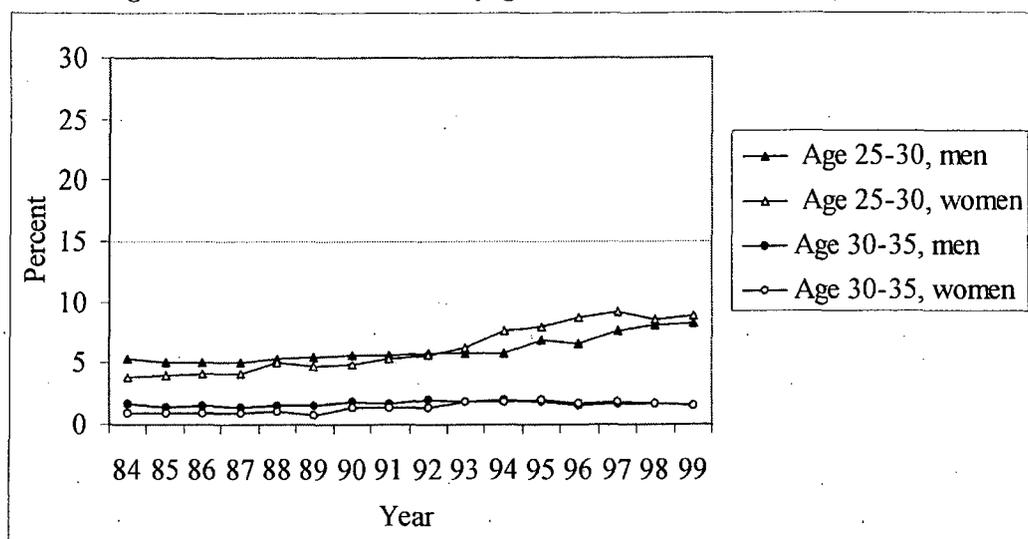


Figure 8: Enrolment rates by gender in France: 25-35 year-olds



aged 25 to 30 are enrolled in some kind of education, against only 10 percent of German women¹⁸. In the age group from 30 to 35, the same pattern is observable: the enrolment rate of German men (around 8 percent) is significantly higher than that of women (around 3 percent). As a result, the enrolment rates have the same order of magnitude for French and German women aged between 25 and 35, but are much higher for German men in this age group than for French men¹⁹. Another striking feature is that, contrary to the situation observable in France, there is no sign of convergence of enrolment rates at older ages in Germany, and

18 In France, only 8 percent of men in the same age group are enrolled in education in 1999.

19 One element of explanation for this might be that German men who make longer studies traditionally complete military service before studying and do not postpone it to the time after their studies like French men do, but this cannot explain the whole difference.

the gap - in favour of men - in enrolment rates even seems to widen slightly over the period. Thus, in Germany, women seem to catch up in terms of educational participation only for shorter courses of studies.

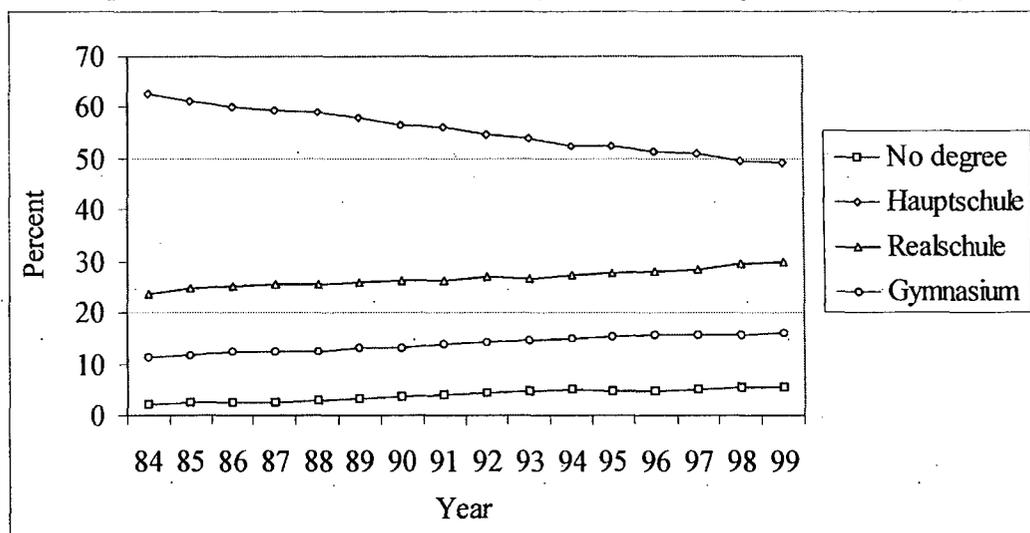
5.2 Distribution of secondary education degrees

The distribution of secondary education degrees is of particular interest. Indeed, it is a decisive stage in the educational career insofar as it determines to a large extent subsequent educational outcomes. Indeed, advanced qualification courses generally have specific eligibility requirements in terms of secondary education. Here, only general secondary education degrees are considered. The population observed has been limited to the individuals older than 20, to ensure that they have finished secondary education. The very few people older than 20 but who have not finished secondary education have been excluded from the sample. Moreover, people above 75 have also been excluded.

5.2.1 Structure and developments over time

The following pictures depict the developments in the distribution of secondary education degrees²⁰ from the mid 1980s.

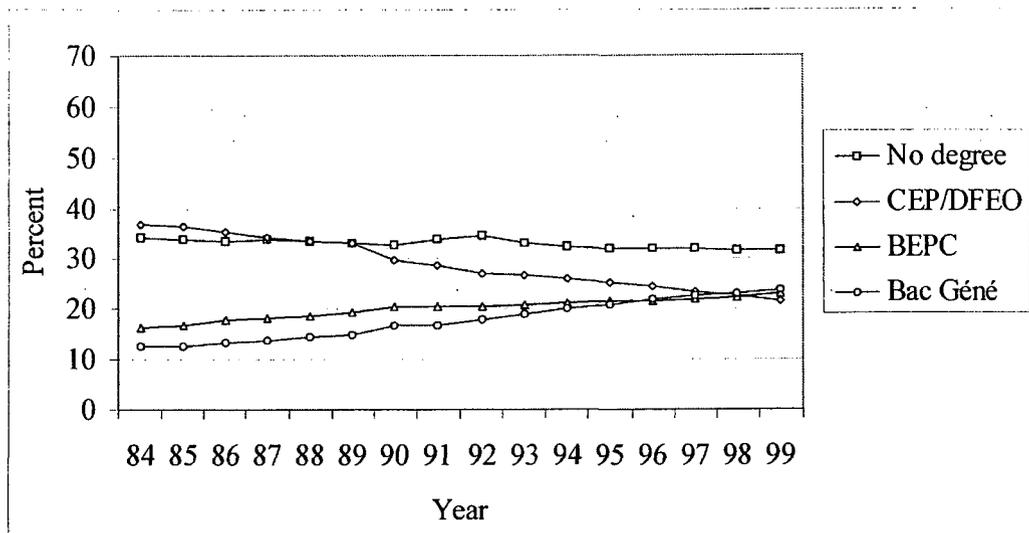
Figure 9: Distribution of secondary education degrees in Germany



A striking feature is the very high proportion of individuals with no secondary education degree at all in France compared to Germany. Thus, in 1999, more than 30 percent of the French population report to have no secondary education degree, against only around 5 percent in Germany. By contrast, the majority of German people (some 50 percent in 1999) holds a degree from the *Hauptschule*, the secondary school of the lowest level, while only 22 percent of the French population

²⁰ Please refer to the glossary in appendix or to the description of the education system in the previous sections to obtain the definition of the credentials.

Figure 10: Distribution of secondary education degrees in France



hold a general secondary education degree of the lowest level (CEP/DFEO). On the other hand, significantly more French people hold the general maturity certificate (*Bac Gén *, 24 percent) than German people (*Gymnasium*-leaving certificate or *Abitur*, 16 percent) in 1999. In other words, there is a stronger dispersion in the distribution of secondary education degrees in France than in Germany, with at the same time more French people having no degree at all and more people having the general maturity certificate, while the bulk of German people hold either the lowest or the intermediate school certificate. Of course, this has repercussions on the distribution of final educational attainment.

The proportion of individuals with no secondary school degree has remained remarkably stable in France since the mid-1980s, but has increased slightly in Germany, though remaining at a very low level. However, the proportion of CEP/DFEO holders in France has declined regularly, going from 37 percent in 1984 down to 22 percent of the population in 1999. In Germany also, the percentage of *Hauptschule* degrees dropped significantly, from 63 percent in 1984 down to 50 percent at the end of the century. In France like in Germany, the proportion of individuals with an intermediate or a higher secondary school degree has increased steadily and in a quite parallel way over the period. However, the expansion has been significantly stronger in France than in Germany. This is particularly true for the share of general maturity certificate holders, which doubled in France (from 12 to 24 percent) while it only rose from 11 to 16 percent in Germany. As far as the share of intermediate secondary degree holders is concerned, the expansion has been slightly stronger in France (from 16 to 23 percent) than in Germany (from 24 to 30 percent)²¹.

²¹ Note that a same absolute increase in percentage points is stronger in relative terms when starting from 16 percent than from 24.

From one year to the next, the bulk of the population observed remains the same. Only a few young individuals enter the population observed and a few old individuals disappear from it. Therefore, having a look at the distribution of educational credentials across generations instead of the distribution from one year to the next for the whole population, all generations taken into account, gives additional insights into the nature of changes in the distribution of secondary education degrees over a longer period of time. Figure 11 and 12 depict the distribution of secondary school degrees for different birth cohorts. Individuals have been grouped into 7 generations, the oldest one being born between 1909 and 1918 and the youngest one between 1969 and 1978.

Figure 11: Distribution of secondary education degrees by birth cohort in Germany

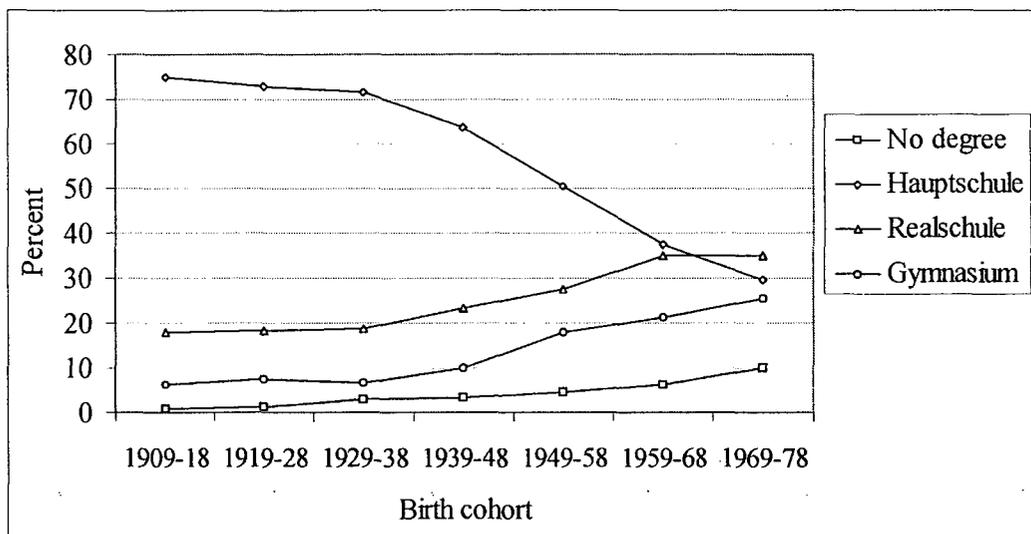
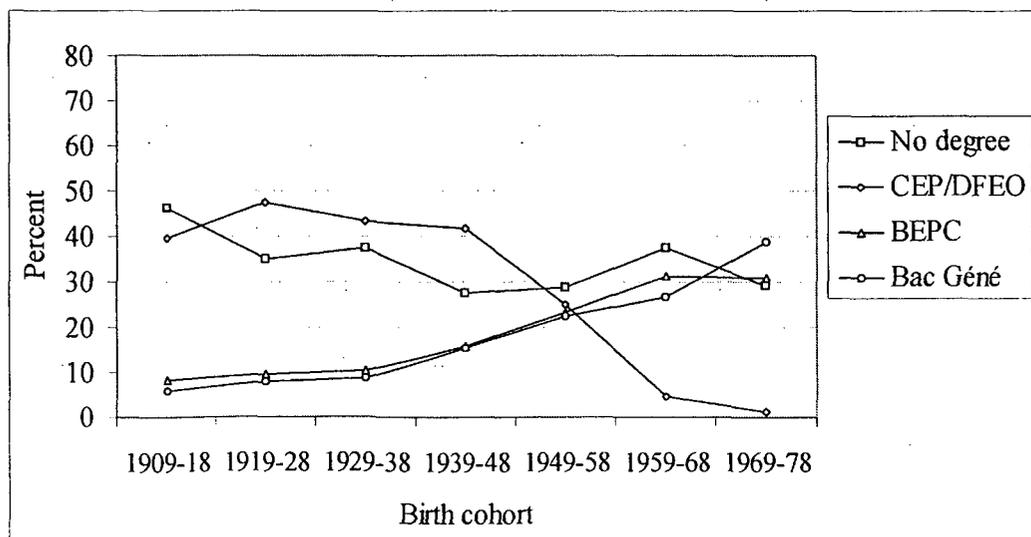


Figure 12: Distribution of secondary education degrees by birth cohort in France



The fall in the share of holders of a *Hauptschule* degree appears to be amazing for generations born after 1939 in Germany. Thus, 3/4 of the people born at the beginning of the century (between 1909 and 18) hold a *Hauptschule* degree, whereas only 1/3 of the youngest generation (born between 1969 and 1978) do so. In France, the drop has been even more dramatic, since the share of CEP/DFEO holders amounts to some 40-50 percent for older generations, while holders of these certificates are virtually non-existent among the youngest generations²². Parallel to this development, we observe a slight increase in the share of individuals with no secondary school degree for the 1949-58 and the subsequent generations, in France²³ like in Germany. This increase has been relatively moderate, since at the same time, more and more people in the younger generations obtained an intermediate or a maturity certificate. The expansion of the intermediate school certificate across generations proves to have been significantly stronger in France than in Germany. Hence, if twice as many German (17 percent) as French (8 percent) people hold an intermediate secondary school degree within generations born between 1909 and 1918, the shares are comparable in the youngest generation (around 35 percent for Germany and 31 percent for France).

The stronger educational expansion at the secondary level is even more visible considering the increase across generations in the obtention rate of the general maturity certificate. Indeed, the increase has not only been stronger in France if we compare the oldest generation (around 6 percent in France like in Germany) to the youngest generation (around 40 percent in France against 25 percent in Germany), but the expansion also started earlier in France than in Germany. As a matter of fact, while the shares of maturity holders are roughly similar for generations born between 1908 and 1928, the next German cohort (1929-38) experienced a decline, while the corresponding French cohort did not, and the share of maturity certificates in the population has risen at a faster rate in France than in Germany for the subsequent generations. Thus, the advance of the French population in terms of the share of maturity holders should keep on increasing as long as younger generations replace older ones in the overall population.

5.2.2 Gender differences

The developments described above hide significant differences between men and women. Interestingly, those gender differences are not similar in France and Germany. Figure 13 to Figure 16 highlight gender differences at the lower end of the distribution of school degrees, while Figure 17 to Figure 20 show gender differences in the upper end of the school degrees distribution.

As can be seen, the proportion of individuals without any secondary school degree is very - low and - similar for German men and women, whereas in France,

²² This is the reason why the CEP was suppressed in 1989.

²³ However, the share of individuals with no school degree had followed a decreasing trend up to the 1939-48 generation in France.

Figure 13: Distribution of lower secondary education degrees by gender in Germany

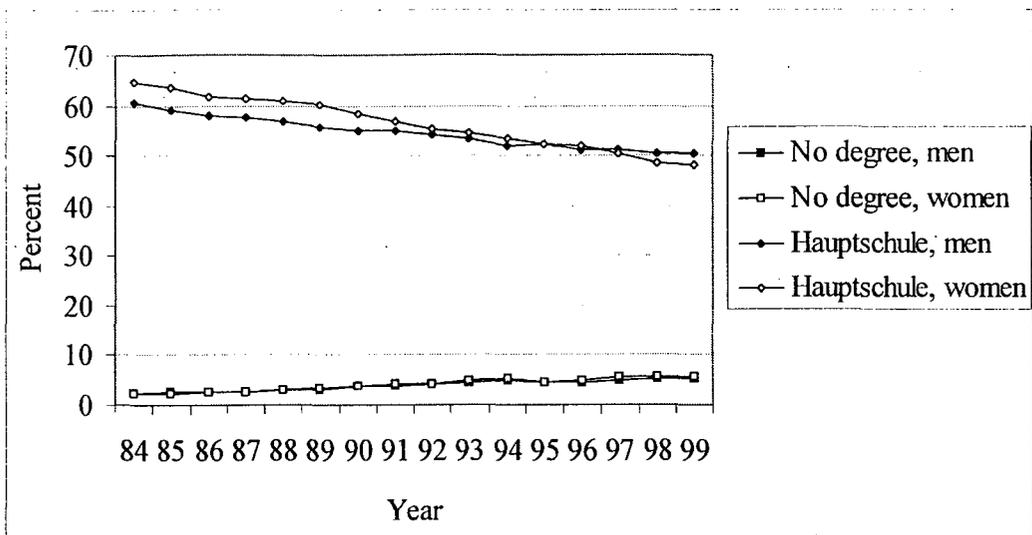
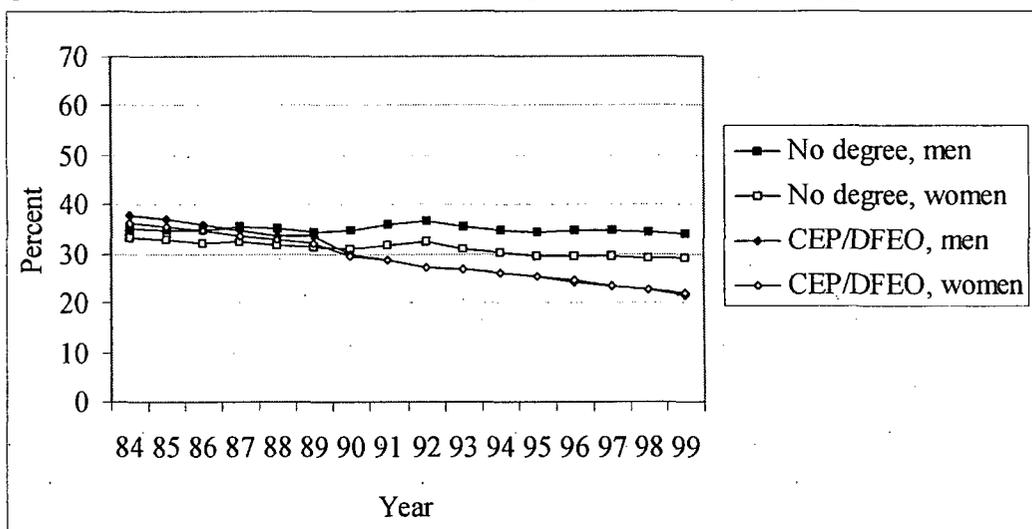


Figure 14: Distribution of lower secondary education degrees by gender in France



it is higher for men than for women. As far as the lowest secondary school degree is concerned, there were slightly more French men than French women holding a CEP/DFEO in the 1980s, but the proportions converged in the 1990s. In Germany, however, more women than men had a *Hauptschule* degree in the mid-1980s, but the drop has been significantly stronger than for men, so that at the very end of the century, fewer women than men hold the lowest secondary level degree.

These developments since the mid-1980s reflect changes across generations. Thus, the drop in the proportion of *Hauptschule* degree holders in Germany has mainly been driven by women, with a spectacular fall from almost 80 percent in the 1909-18 generation down to 25 percent in the youngest generation (1969-

Figure 15: Distribution of lower secondary education degrees by gender and birth cohort in Germany

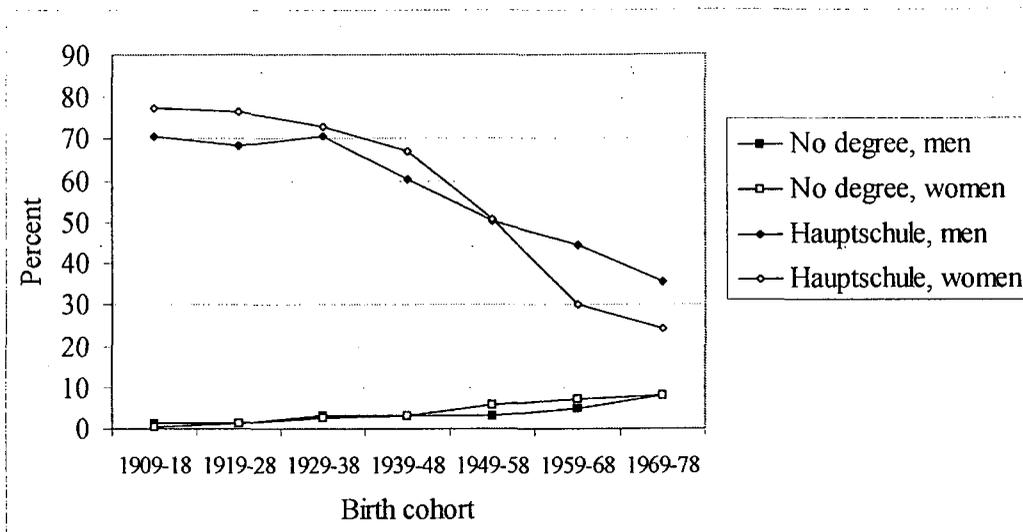
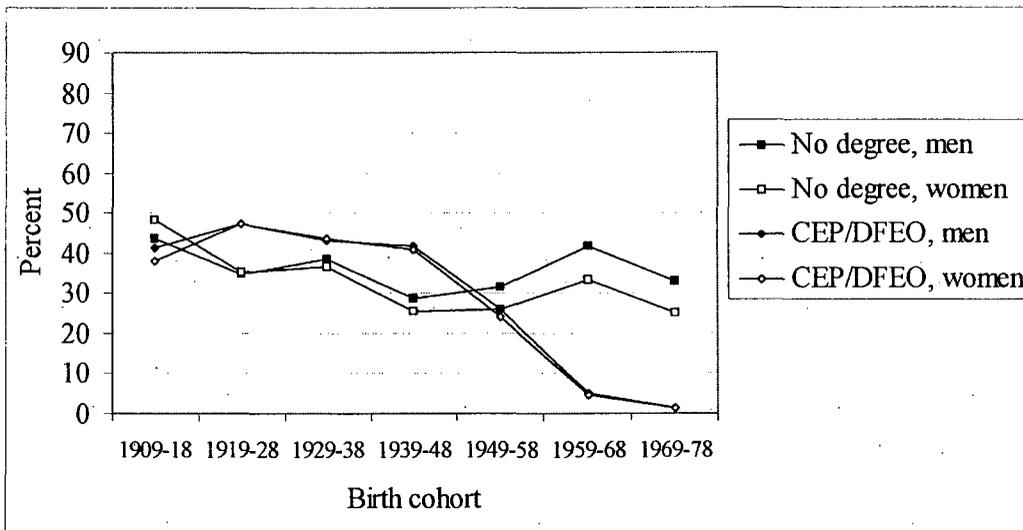


Figure 16: Distribution of lower secondary education degrees by gender and birth cohort in France



78), whereas the drop has been significantly less pronounced for men, though also strong²⁴. In France, no gender differences are observable in the decline of CEP/DFEO certificates across generations. In Germany, the share of individuals without any school degree has slightly risen across generations, in a similar way for men and for women. Conversely, in France, even though the decrease in the number of people leaving the school system without any degree has been similar for men and for women up to the 1939-48 generation, the subsequent increase proved to have been significantly stronger for men than for women.

²⁴ The proportion of *Hauptschule* degree holders went from 70 percent down to 35 percent, with a peak for the 1929-38 generation, probably as a consequence of World War II.

Figure 17: Distribution of higher secondary education degrees by gender in Germany

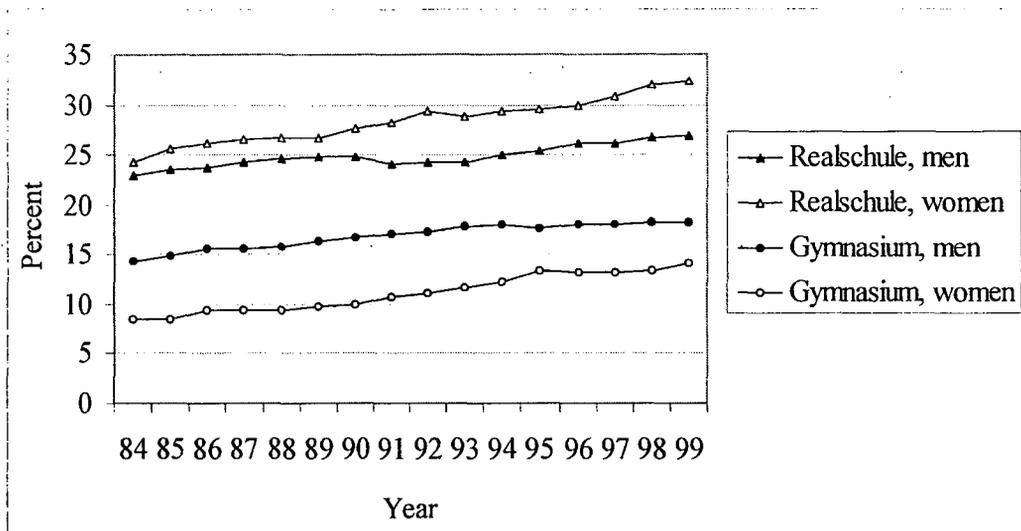
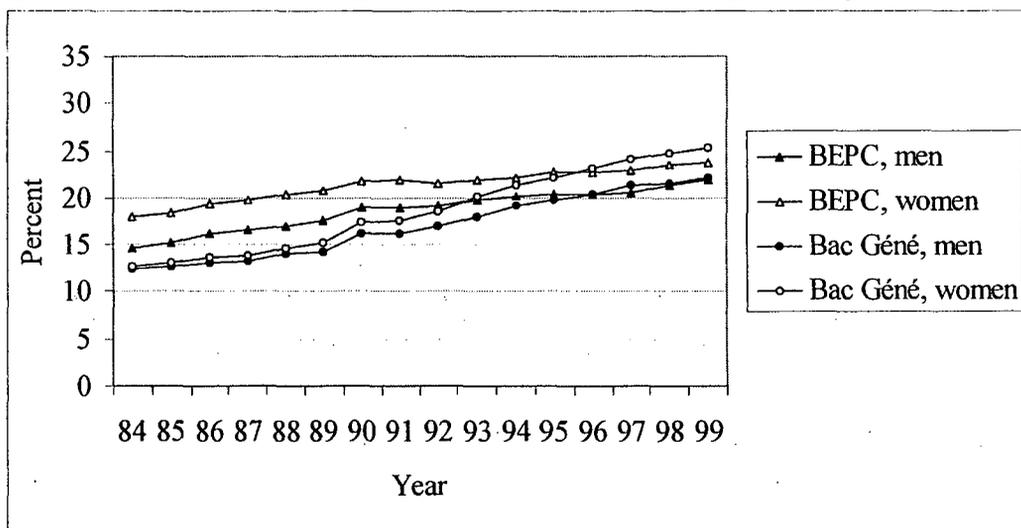


Figure 18: Distribution of higher secondary education degrees by gender in France

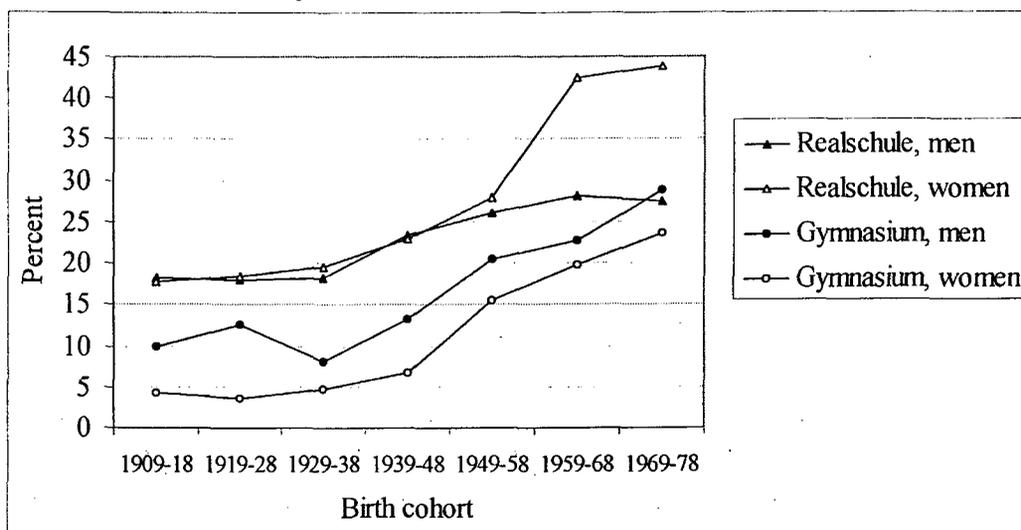


More women than men hold an intermediate level of secondary education, in Germany and France alike (see Figure 17 and Figure 18). In Germany, the gender gap in favour of women has increased over time, due to a stronger increase in the share of women holding a *Realschule* degree. As a result, the gender gap in favour of women has become significantly stronger in Germany than in France at the end of the 1990s.

The situation is radically different in the two countries with respect to the maturity certificate. While in Germany significantly more men than women hold the general maturity certificate (twice as many in the mid-1980s), the reverse is true in France. However, the progression has been somewhat stronger among German women than among German men, which results in a slight convergence

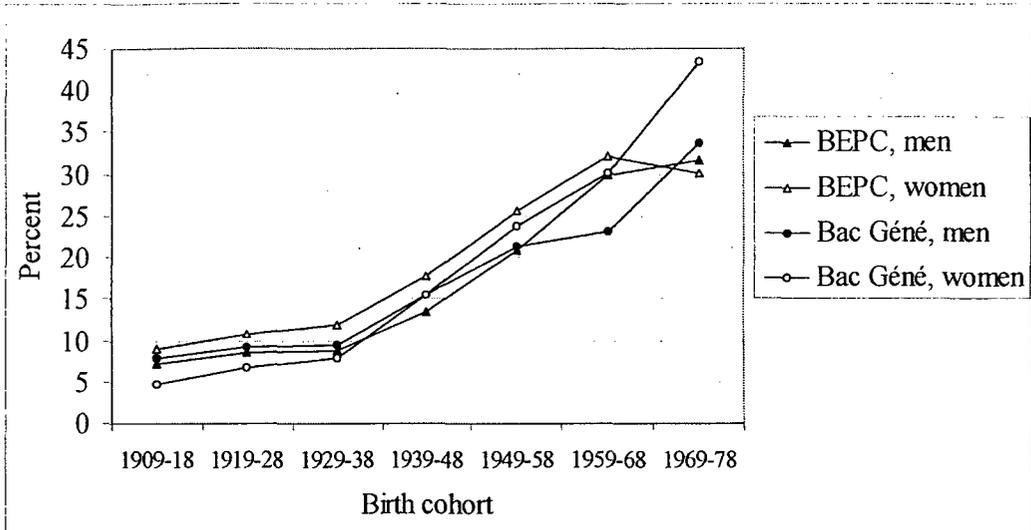
trend, even though the gap in favour of men remains quite large even at the end of the 1990s. In France, more women than men received the maturity certificate. Here also, the increase in the share of women holding the maturity certificate has been stronger than for men, which results in a widening gap in favour of French women, particularly at the end of the century, while the shares were roughly similar for men and women in the middle of the 1980s. As a consequence, it is worth noting that in 1999, the share of male maturity holders has the same order of magnitude in France and in Germany (respectively 22.2 and 18.2 percent) - though somewhat higher in France-, whereas among women, the share of maturity holders is very much higher in France (25.3 percent) than in Germany (14.1 percent).

Figure 19: Distribution of higher secondary education degrees by gender and birth cohort in Germany



The developments across generations (Figure 19 and Figure 20) point to interesting aspects. Until the 1949-58 generation, the progression of the share of *Realschule* degree holders was quite similar for men and for women in Germany. We can only observe a spectacular rise in the proportion of German women with a *Realschule* degree from the 1958-68 generation onwards. Observing the cohorts, it appears that the 1929-38 birth cohort of German men faced a collapse in the maturity completion rate, most probably due to the effects of World War II. In France, the progression rate of maturity certificates encountered at most a slowing down for this birth cohort. Among the older generations in France, more men than women received the maturity certificate. However, the respective shares of maturity certificate holders converged for birth cohort 1939-48, and after this, the expansion has been much stronger for women than for men. Thus, a similar phenomenon of educational expansion among women appears in France, but at the maturity certificate level rather than at the intermediate secondary school level like in Germany.

Figure 20: Distribution of higher secondary education degrees by gender and birth cohort in France



The developments in the distribution of secondary education degrees largely influence the developments in the distribution of final educational attainment, with a time lag. In particular, since the increase in the proportion of maturity holders has been stronger in France than in Germany, a stronger increase in the share of tertiary education graduates is expected in France. Furthermore, since gender differences are larger in Germany than in France at the secondary school level, they are also likely to be greater in Germany than in France in terms of final educational attainment.

5.3 Distribution of final educational attainment

In order to examine empirically the distribution of final educational attainment in France and Germany, we use the typology established in section 4.

5.3.1 Structure and developments over time

Table 2 shows the detailed distribution of educational attainment in the population between 25 and 75 years of age in France and Germany in 1999.

Comparing the educational distribution in France and Germany, it appears that in France not only a much higher proportion of the population (45 percent) than in Germany (24 percent) has no vocational qualification at all, but half of them do not even dispose of a secondary school degree, against only 15 percent in Germany. In Germany, the bulk of people without any vocational qualification has a degree from the lowest secondary school (*Hauptschule*).

Secondly, a very large proportion (about 45 percent) of the German population holds as the highest degree a basic vocational degree (apprenticeship), while in France only 25 percent of the population hold at most a CAP/BEP degree. In

Table 2: Final educational attainment in France and Germany (1999)

Level	Highest degree obtained	Germany	France
1	No vocational degree	24.0	44.7
10	No degree	3.7	22.6
11	Lower secondary	17.0	15.0
12	Intermediate secondary	3.4	7.0
2	Basic vocational degree	44.5	25.5
20	Lower secondary + basic vocational	31.3	17.2
21	Intermediate secondary + basic vocational	13.2	8.4
3	Intermediate qualification	17.8	11.2
30	Intermediate vocational	9.9	1.6
31	Vocational maturity	3.4	3.4
32	General maturity	0.9	5.5
33	General maturity + vocational	3.6	0.7
4	Tertiary level	13.7	18.6
40	Lower tertiary	4.5	9.2
41	Upper tertiary	9.2	9.4

France like in Germany, some 70 percent of this skill group has no or only the lowest secondary school degree, the remaining 30 percent holding the intermediate secondary school certificate.

Moreover, a larger share of the German population has an intermediate qualification level (around 18 percent in Germany against 11 percent in France). At this intermediate level, the structure largely differs in France and Germany. In France, the majority of individuals in this skill group holds as the highest degree the general maturity certificate alone (5.5 percent of the whole population), while it is very unusual in Germany to stop studying after having obtained the *Abitur* (less than 1 percent of the population did so in 1999). Most people who possess the German *Abitur* pursue further studies, either a vocational qualification (which is, in turn, very unusual in France) or tertiary level studies. In Germany, the overwhelming majority of this intermediate skill group has an intermediate vocational qualification (*Fachschule*, technical college degree) below the maturity level. Conversely, in France, few people have an intermediate vocational certificate and many more have the vocational maturity certificate. This reflects the key position of the *Baccalauréat* in France, unlike in Germany, where the completion of vocational qualification is viewed as more important:

At the higher education level, as expected given the distribution of secondary school degrees, significantly more French than German people completed higher education (around 19 percent in France against 14 percent in Germany). However, looking more in detail, it appears that the difference is essentially noticeable

at the lower tertiary level: the share of graduates from the lower tertiary level is twice as high in France as in Germany²⁵, while the difference between France and Germany in the share of the population with a upper tertiary education degree is very small (9.4 versus 9.2 percent).

Making use of the more detailed information available in the French data (see Table 8 in Appendix B), we observe that the majority of the *Bac+2* holders has a BTS/DUT degree, the rest being equally distributed among the university first cycle degrees (DEUG and the like) and paramedical qualifications. At the upper tertiary level, 70 percent have a university degree, while the remaining 30 percent have a *Grande Ecole* degree. To be more specific, some 40 percent have a *Bac+3* or *Bac+4* level degree²⁶, almost 30 percent have a postgraduate degree (DESS, DEA, doctorate etc.). Among the *Grande Ecole* completers, less than 20 percent have a degree of one of the most prestigious *Grandes Ecoles*²⁷.

For presentation purposes, the analysis of the developments in the structure of educational attainment in France and Germany is based on the following figures, where the typology established in Table 1 has been aggregated into 5 levels (see Table 3), which are broadly in line with the usual typologies used in French and German statistics as well as in empirical literature. For further statistical details, please refer to the complete tables in Appendix B.

Table 3: Aggregate classification of educational attainment in France and Germany

Education level	Germany	France
Level 1	No vocational degree	No vocational degree
Level 2	<i>Lehre</i>	CAP/BEP
Level 3	<i>Fachschule/Abitur</i>	<i>Baccalauréat</i> level
Level 40	<i>Fachhochschule</i>	<i>Baccalauréat+2</i> level
Level 41	<i>Universität</i>	Above <i>Baccalauréat+2</i> level

As can be seen from Figure 21 and Figure 22, the proportion of individuals without any vocational degree has decreased in France like in Germany. The decrease has been stronger in France, but starting from a much higher level (more than 60 percent of the population had no vocational qualification at all in 1984). In both countries, this decrease mainly reflects a significant drop in

25 Note, however, that the level of the German *Fachhochschule* qualification is higher than that of French *Bac+2* qualifications and is probably closer to a *Bac+3* level qualification.

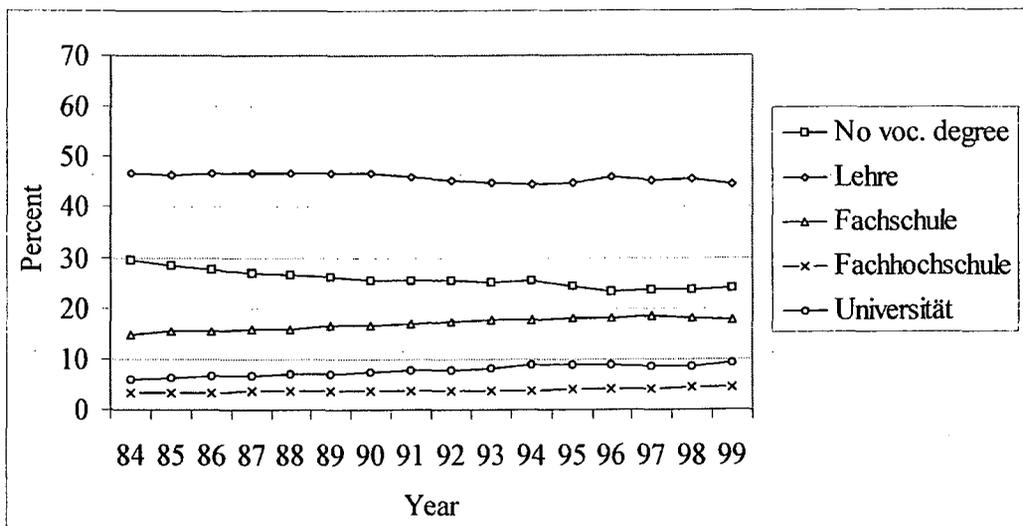
26 Distributed equally.

27 Here is the list of the *Grandes Ecoles* reported as the most prestigious in the Employment Survey: Centrale, Ecole de l'Air, Ecole de la Magistrature, ESSEC, ENA, ENGREF, ENSAE, Génie Maritime, HEC, INA ("Agro"), Mines, Navale, Normale Sup, Polytechnique, Ponts, Saint-Cyr, Sciences Po Paris, Sup-Aéro and Télécom.

the share of individuals with at most the lowest secondary school degree, but in France, the very high percentage of people without any school degree has also substantially decreased (see Table 5 in Appendix B).

In Germany, the share of individuals with a basic vocational qualification has remained remarkably stable over the period, contrary to France, where more and more people hold a CAP or BEP²⁸. Interestingly, in both countries, the level of general education has increased within this category, since an increasingly large share of people holds an intermediate secondary education certificate beside their basic vocational qualification (see Table 5 in Appendix B).

Figure 21: Distribution of final educational attainment in Germany

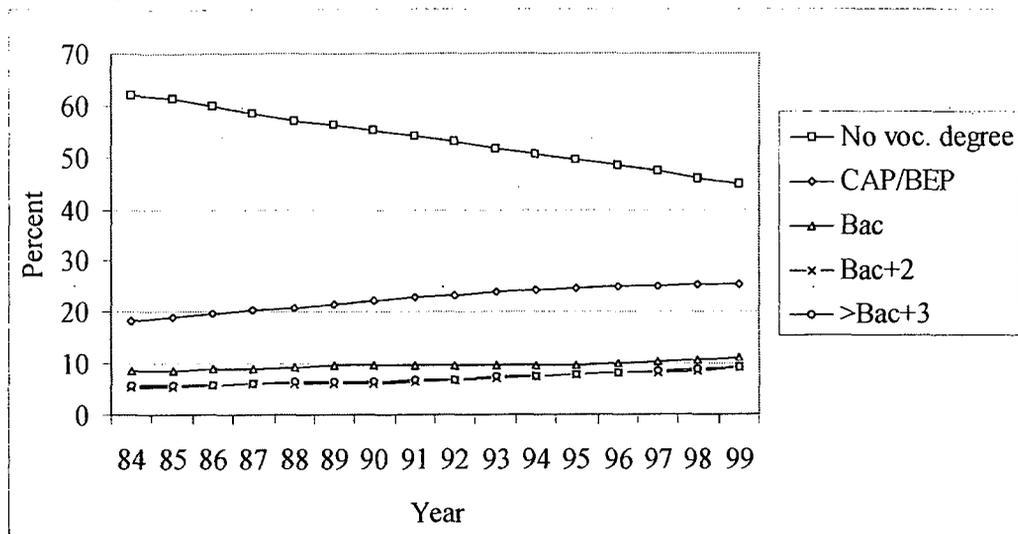


At the intermediate level (maturity and/or advanced technical or vocational qualification), there has been a slight increase in France since the mid-1980s (from 8.5 to 11.2 percent of the population), like in Germany (from 14.6 to 17.8 percent). In France, the expansion of the maturity certificates, both vocational and general, has been somewhat offset by the decrease in the share of advanced technical certificates below *Baccalauréat* level. In Germany, the increase in the vocational maturity certificate (*Fachoberschule*) as well as of individuals completing vocational training after obtaining their general maturity certificate are responsible for the increase in the share of intermediate qualifications (see Table 5 in Appendix B). Thus, in both countries, the share of maturity holders has increased, but at the same time, the propensity to undertake tertiary level studies when possessing the maturity certificate has decreased somewhat over time.

The overall increase in the share of higher education degrees in the population since the mid-1980s proves to have been stronger in France (+70 percent) than in Germany (+50 percent). This is essentially attributable to the particularly strong progression of the lower tertiary level in France (from 5.4 to 9.2 percent) compared

28 A probable countertrend to the decrease of the share of people with no vocational qualification at all.

Figure 22: Distribution of final educational attainment in France



to Germany (from 3.3 to 4.5 percent). On the other hand, the difference (in favour of France) between both countries in the expansion rate of upper tertiary level degrees, though existent, is not so strong (increase from 5.7 to 9.4 in France against an increase from 5.9 to 9.2 in Germany). Note that in Germany, the expansion of university degrees has been stronger than that of the *Fachhochschule* degrees, while lower and upper tertiary level qualifications expanded at a similar path in France. In France, the impressive expansion of lower tertiary degrees is essentially attributable to the rise in BTS/DUT degrees among the *Bac+2* since the mid-1980s (see Table 8 in Appendix B). At the upper tertiary level, the relationship between university and *Grandes Ecoles* has remained rather stable since the mid-1980s (70 percent against 30 percent). However, among holders of a *Grande Ecole* degree, fewer have nowadays a degree from a top *Grande Ecole*. This development is due to the creation of a large number of new *Grandes Ecoles* which are less selective or less prestigious than the traditional ones. If the share of postgraduates has risen until the mid-1990s, it has been following a decreasing trend since then.

The distribution of educational attainment by birth cohort is depicted in Figure 23 and Figure 24 and gives an overview of long term developments in the educational structure. The 1969-78 generation has been left aside because a too large part of it has not finished its initial education in 1999, especially in Germany. Considering birth cohorts, the drop in the share of individuals without any vocational qualification in France is amazing. Indeed, almost 90 percent of the generation born between 1909 and 1918 has no degree there, compared to only 40 percent in Germany. In the 1959-68 generation, however, only 30 percent has no vocational qualification in France, against 15 percent in Germany, where the drop has accelerated for the generations born between 1939 and 1948 and thereafter. Therefore, the proportion of the population without a vocational

degree should keep on decreasing at a faster rate in France than in Germany in the next decade, as long as the older generations disappear and new generations come.

Figure 23: Distribution of final educational attainment by birth cohort in Germany

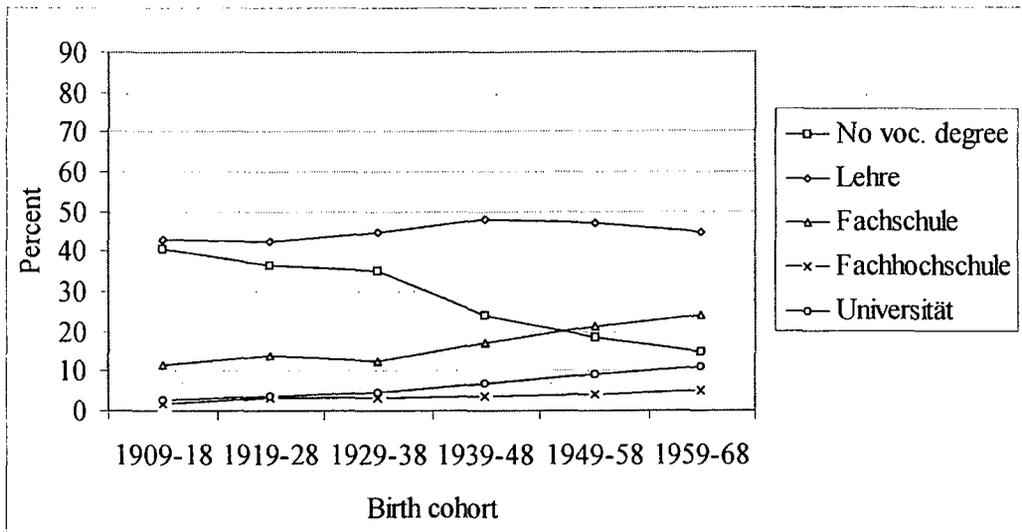
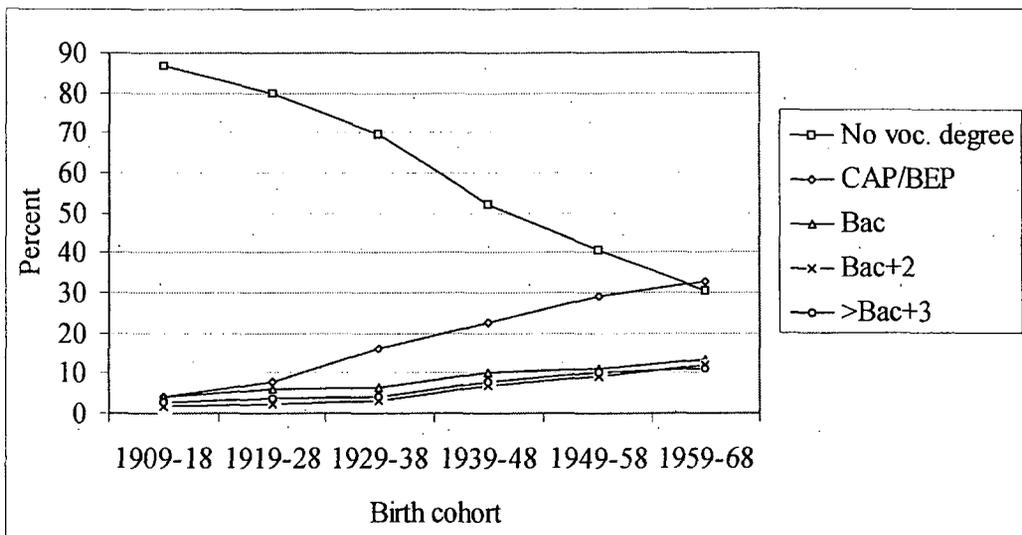


Figure 24: Distribution of final educational attainment by birth cohort in France



The increase in the share of CAP/BEP holders across French generations has been particularly strong and in the 1959-68 birth cohort, it attains 33 percent. Since in Germany, the share of individuals with an apprenticeship (*Lehre*) has remained stable around 45 percent, the convergence trend between France and Germany is expected to continue in the future when older generations are progressively replaced by younger generations. The increase in the share of individuals

with an intermediate qualification has been stronger across generations than in the whole population, particularly in Germany, where the share of *Fachschule* level degrees has reached 24 percent for the youngest generation observed as compared to 18 percent in the whole population in 1999. At the tertiary level, a striking feature is the particularly slight increase in the proportion of lower tertiary degree holders in Germany compared to France and compared to upper tertiary degrees in both countries.

5.3.2 Gender differences

In both countries, gender differences are observable in the qualification structure of the population. Table 4 shows the gender-specific distribution of educational attainment in France and Germany in 1999. A first striking feature is that twice as many women as men have no vocational degree in Germany, while only less than 20 percent more women than men have no vocational qualification in France. Looking more in detail, it appears that in Germany like in France, the gender gap in this category mainly stems from the fact that among people with no vocational qualification, more women than men have a lower or intermediate school degree only, while the difference between men and women in the share of individuals without any school is less pronounced.

Table 4: Final educational attainment by gender in France and Germany (1999)

Level	Highest degree obtained	Germany		France	
		Men	Women	Men	Women
1	No vocational degree	15.4	31.6	40.8	48.4
10	No degree	3.1	4.2	22.3	23.0
11	Lower secondary	10.8	22.5	12.6	17.3
12	Intermediate secondary	1.5	5.0	5.9	8.1
2	Basic vocational degree	45.5	43.6	29.8	21.5
20	Lower secondary + basic voc.	35.9	27.3	21.9	12.6
21	Intermediate sec. + basic voc.	9.7	16.2	7.8	8.8
3	Intermediate qualification	20.4	15.4	10.6	11.8
30	Intermediate vocational	13.3	6.8	1.8	1.4
31	Vocational maturity	3.5	3.3	3.6	3.2
32	General maturity	0.7	1.1	4.5	6.4
33	General maturity + vocational	2.9	4.2	0.7	0.8
4	Tertiary level	18.6	9.4	18.8	18.4
40	Lower tertiary	6.5	2.8	8.0	10.4
41	Upper tertiary	12.1	6.6	10.8	8.0

At the other end of the educational distribution, the difference between France and Germany is amazing. If the share of university degree holders is roughly

similar for men and women in France (only slightly higher for men), there is a huge gap in favour of men in Germany, where twice as many men (about 19 percent) as women (about 9 percent) hold a tertiary level degree. A closer look reveals that the gender gap in favour of men is observable at the lower tertiary (*Fachhochschule*) level and at the upper tertiary level alike. However, in France, it is worth noting that while significantly more women than men have a lower tertiary level degree, the reverse is true at the upper tertiary level. As can be seen from Table 8 in Appendix B, at the lower tertiary level, French men predominantly opt for a BTS/DÜT qualification, which provides an advanced technical degree, while a larger share of women pursues paramedical studies. At the upper tertiary level, a much larger share of men graduated from a *Grande Ecole* (40 percent for men against 15 percent of women) in 1999, and if almost 8 percent of French men held a degree of a top *Grande Ecole*, only 2.5 percent of women did so. Thus, even though the overall share of tertiary level graduates is almost similar for men and for women, women's position is not as good as that of men in France also.

In the middle field of the educational distribution, the situation is the following. In both countries, but particularly in Germany, more men than women hold a basic vocational degree. Interestingly, the level of general education is higher for women than for men at this level, since more men only have a lower school degree, and more women have an intermediate school degree beside their vocation qualification. This is true in both countries, but particularly pronounced in Germany. At the intermediate qualification level also, the situation differs in France and in Germany: more men than women have an intermediate qualification level in Germany, while the reverse is true in France. Here again, this results from a significantly higher percentage of German men having completed advanced vocational training (*Fachschule* level), which represents the bulk of people with an intermediate qualification level in Germany, while more women than men have the general maturity certificate with or without a vocational training. In France also, more men than women have an intermediate vocational qualification, but this is more than offset by the highest percentage of women holding the general maturity certificate.

On the whole, it can be observed that gender differences are very pronounced in Germany compared to France, with men having a significantly better educational endowment than women, while the differences are much less pronounced in France. Moreover, it appears that for a same level of vocational qualification, women have a higher level of general education, in France like in Germany.

The following figures provide a graphical overview of the developments in the distribution of the educational structure over time. Figure 25 and Figure 26 compare the situation of the population in the lowest part of the skill distribution for men and women in France and in Germany.

Gender inequalities have reduced in Germany since the mid-1980s. Thus, women's disadvantage - though remaining important, as we have just seen - has

Figure 25: Distribution of educational attainment by gender in Germany: low skilled

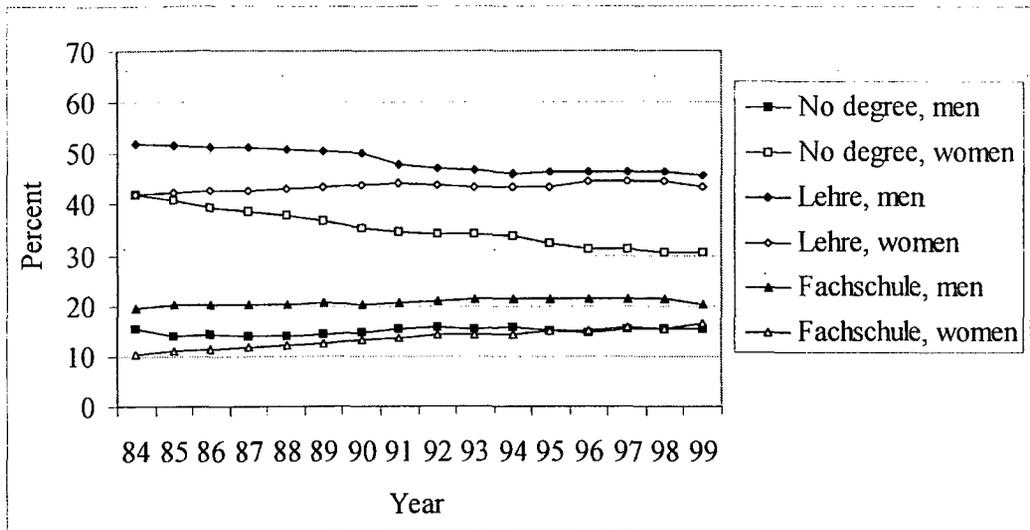
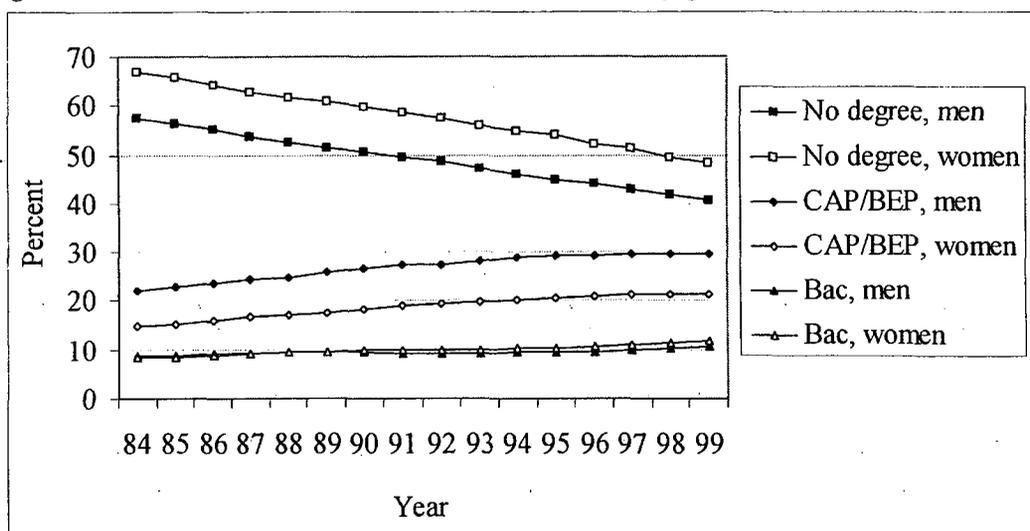


Figure 26: Distribution of educational attainment by gender in France: low skilled



reduced somewhat. For instance, the share of German men without a vocational degree has remained constant since the mid-1980s, while that of their female counterparts dropped from 42 percent down to 32 percent over the same period.

Looking at the developments across generations in Figure 27, the convergence trend is undebatable. Hence, in the 1909-18 birth cohort, almost 55 percent of German women have no vocational degree, against only 18 percent of men. In the youngest birth cohort (1959-68), however, the gap has reduced considerably, since about 17 percent of women of this generation do not hold a vocational degree,

Figure 27: Distribution of educational attainment by gender and cohort in Germany: low skilled

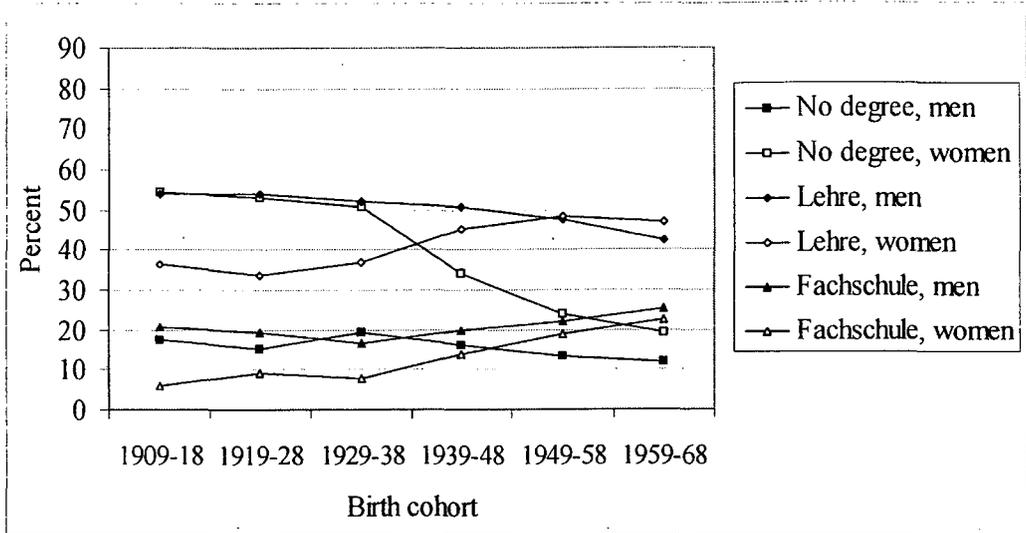
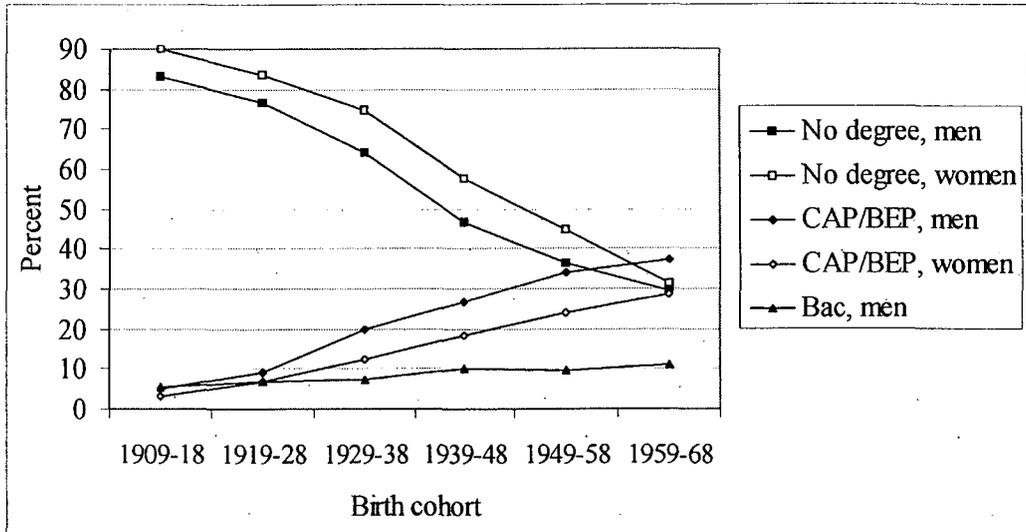


Figure 28: Distribution of educational attainment by gender and cohort in France: low skilled



against 12 percent of men²⁹. In France, the share of individuals with no vocational degree has followed a parallel decreasing trend for men and for women. This also appears in Figure 28³⁰ where the developments across generations in the lowest part of the educational distribution are depicted for France. The detailed figures in Table 5 in Appendix B reveal that among the individuals with no vocational degree, the decrease in the share of people with a *Hauptschule* degree has been

29 Note that the decreasing trend in the share of men with no degree was interrupted for the 1929-38 generation, most probably a consequence of World War II. In France, no similar "war effect" is observable.

30 Except for the youngest generation observed, where the shares have fallen at a similar level.

particularly strong for women, but far less pronounced for men.

At the basic vocational level, the trend has been decreasing for men and slightly increasing for women over the period in Germany, resulting in a convergence of the respective shares. The convergence is even more visible considering developments across generations. Indeed, while a higher proportion of men (54 percent) than of women (36 percent) holds an apprenticeship within the German 1909-18 generation, the relationship reversed and for the cohorts born at the end of the 1940s and thereafter, more women than men hold an apprenticeship degree. In the youngest generation, 47 percent of women and 42 percent of men have completed an apprenticeship. In France, however, no convergence between men and women is observable and a constantly higher proportion of men hold a CAP/BEP. Among the holders of a basic vocational degree, the percentage of women having an intermediate school degree (*Realschule*) has increased somewhat more strongly than for men, particularly in Germany (see Table 6 in Appendix B).

In Germany, the rise in the share of the population with an intermediate qualification level is mainly due to the expansion among women, especially with respect to the share of vocational maturity certificates or general maturity certificates assorted with a vocational training (see Table 7 in Appendix B), while the corresponding share has remained rather constant among men. This is even more obvious if one observes the developments across cohorts in Figure 27. Indeed, it appears that the share of German women with an intermediate qualification has almost caught up with that of men for generations born in 1949-58 and after. Therefore, the gap in favour of men has reduced since the mid-1980s and is expected to keep on reducing with the progressive renewal of generations. In France also, the expansion of intermediate qualifications has been somewhat stronger among women than among men, though to a lesser extent. A look at the more detailed figures in Table 7 in Appendix B reveals that the shares of vocational as well as of general maturity certificates explain this increase for women. For men, the increase in the share of general and vocational maturity holders has been less pronounced than among women, and above all, it has been offset by a drop in the share of holders of an advanced technical degree below *Baccalauréat*-level during the 1990s.

Figure 29 and Figure 30 depict the situation regarding gender differences at the higher education level.

As mentioned before, gender differences - in favour of men - are by far more pronounced in Germany than in France as far as higher education is concerned. Figure 29 shows that there are until now no signs of convergence between genders in Germany. On the contrary, the gap has rather widened up over the period in absolute terms and there is evidence that this will continue. Judging from Figure 31, in Germany, men have more benefitted from higher education than women across generations. This is true at the lower tertiary (*Fachhochschule*) level, but also at the higher tertiary (*Universität*) level. As a result, gender differences in favour of men are more pronounced in the young generations than in the old

Figure 29: Distribution of educational attainment by gender in Germany: high skilled

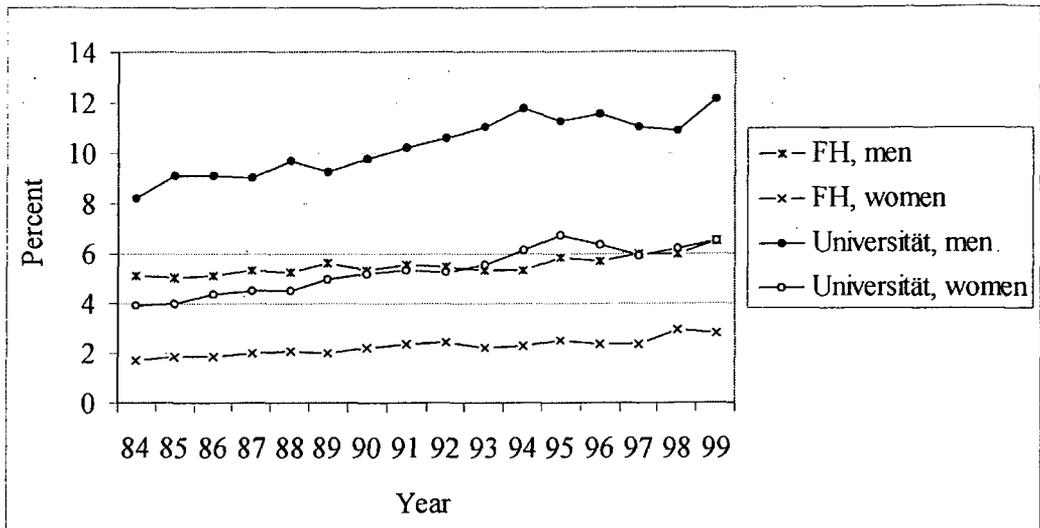
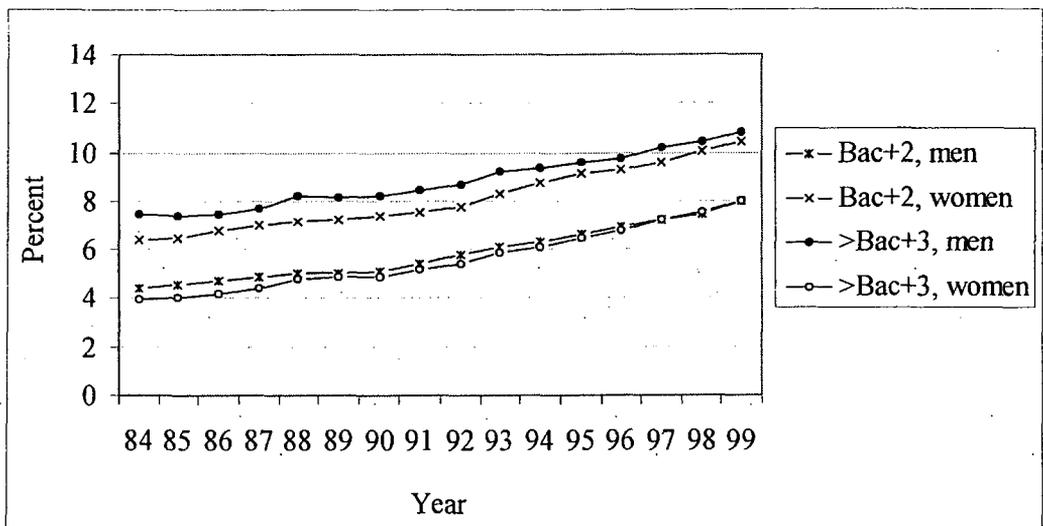


Figure 30: Distribution of educational attainment by gender in France: high skilled



generations. In other words, the expansion of higher education was accompanied by a deepening of the gender gap in Germany.

In France, the situation is different. At the lower tertiary level, females' lead over males has increased compared to the middle of the 1980s³¹. Looking at developments across generations, it appears that even among generations born at the beginning of the century, more women than men hold a lower tertiary degree. However, the increase accelerated for generations born 1939-48 and after. At the upper tertiary level, French women have slightly improved their position

31 This is mainly the result of a very strong progression of women holding a degree of the BTS/DUT level, see Figure 8 in Appendix B.

Figure 31: Distribution of educational attainment by gender and cohort in Germany: high skilled

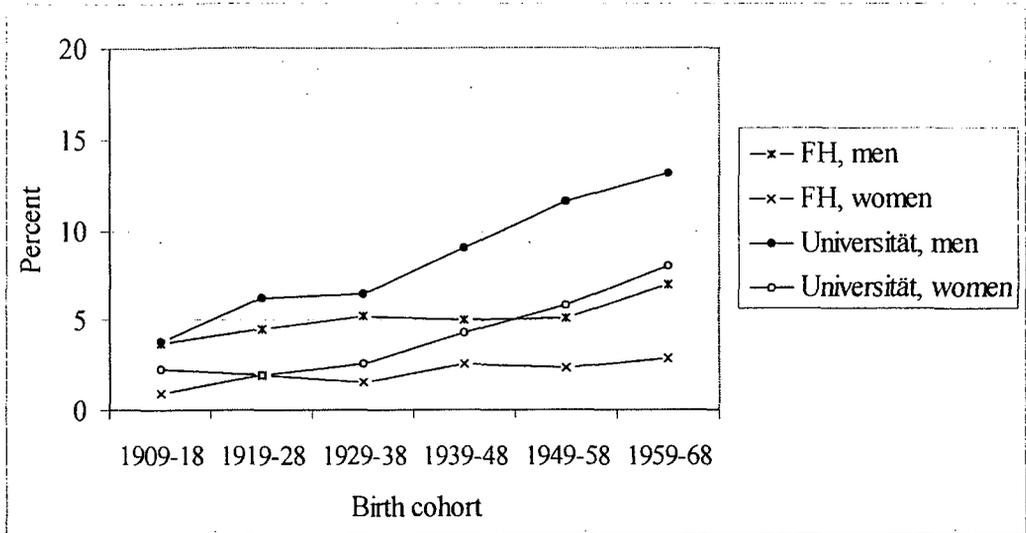
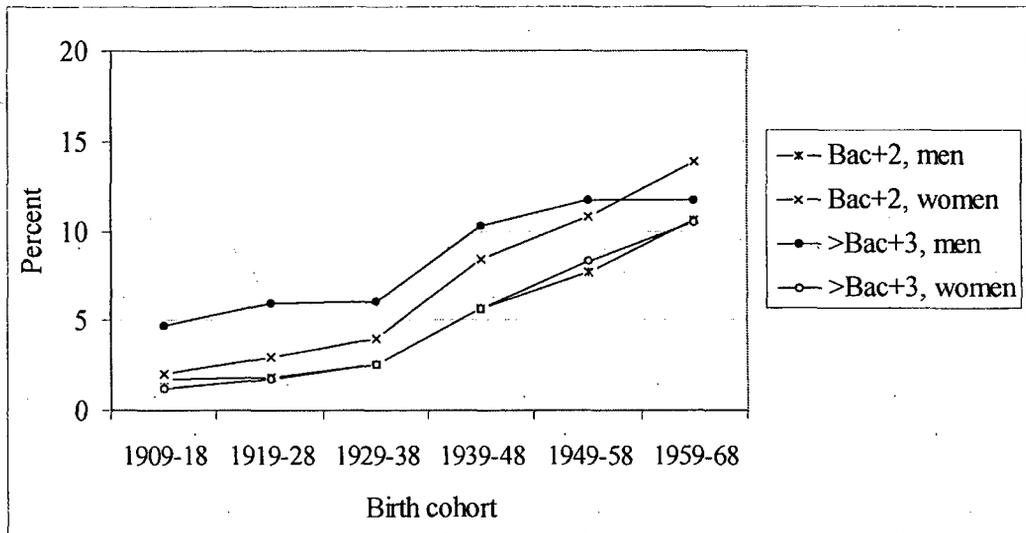


Figure 32: Distribution of educational attainment by gender and cohort in France: high skilled



compared to men since the mid-1980s. In the youngest cohort observed (born between 1959 and 1968), the share of French female university holders is almost as high as that of men, at a level of around 11 percent.

6 Summary and conclusions

This analysis of educational attainment in France and Germany showed that both countries present certain similarities but also significant differences in many respects. Here, the main elements of comparison are summarised and put into

perspective.

The German education system is marked by the federal structure of the Federal Republic of Germany, as opposed to the traditional centralism prevailing in France for general and also educational matters. This implies the presence of regional differences in the German education system, while France attaches great value to having a uniform nation-wide system. As far as the organisation of the education system is concerned, French egalitarianism up to the lower secondary level contrasts with German differentialism. Indeed, the general principle of the French system at the lower secondary level consists, analogue to the situation at the primary education level, in mixing up children of all abilities in the same classes in the hope that weaker pupils will be positively influenced by stronger ones. Conversely, the German system aims at offering a differentiated education adapted to the needs and aptitudes of children, which expresses in pupils being streamed according to their learning ability at an earlier stage of the educational career, namely at the beginning of lower secondary education.

An essential difference between France and Germany concerns their respective conceptions regarding the primary mission of education. In France, the ambition of education policy is basically to provide general education³². As a result, general education is more prized than vocational education. Typically, the objective of educational policy has been to help pupils reach the highest possible level of general education. This explains the key position of the *Baccalauréat*. Only if pupils fail on the way to *Baccalauréat* completion will they opt for a deviant track, vocational education. In other words, vocational education is reserved to the "selected-out" of the general education system and qualifications like the CAP or BEP have a very low status. The reforms conducted in the last decades generally aimed at helping those pupils who have been selected out of the general education system and guided into vocational education to re-enter the school system and reach a higher level of education, possibly the *Baccalauréat*. That is the sense of the introduction of the vocational *Baccalauréat* in the mid-1980s. The most able BEP holders will typically prepare for a vocational *Baccalauréat*, and the very best of them will even try to prepare for a technological *Baccalauréat*. This conception of the role of education also explains that the French tend to take the view that initial vocational training should also include a substantial amount of general education and that the State should bear the ultimate responsibility for it rather than profit-oriented firms. Thus, vocational education in France is typically provided on a rather theoretical basis in full-time schools.

In Germany, no comparable primacy of general education over vocational education is observable. An essential aim of educational policy in Germany is to prepare young people for labour market occupations. The craftsman ideal remains very present in German views (Rothe, 1995). Vocational education, via

32 Even though the rise in unemployment - especially among the least qualified - induced the successive governments to take labour market aspects increasingly into consideration.

the dual system inherited from the Middle-Age, is an essential component of the education system, and that is the track most young persons choose. It is not a last resort like in France but is rather seen as an adequate way of providing pupils with specific vocational skills needed by the economy. This explains that companies are entrusted with part of the initial training duty within the framework of the "dual" system, and that apprenticeship training is the preferred form of vocational education in Germany. Moreover, if apprenticeship in France does exist, it is not really comparable to the German apprenticeship. Apprenticeship in France does not provide a qualification as such but is rather one of several forms under which pupils may prepare for some other educational certificates of various levels (CAP, BEP, *Bac Pro* or even tertiary level degrees), the more usual form being full-time vocational schools. The other kinds of part-time vocational qualifications in France are primarily instruments of employment policy rather than of education policy, with the objective of facilitating labour market entry for those young persons experiencing difficulties in finding a job.

The German system of vocational education aims at providing young people with specific skills leading to recognised professions and at ensuring a smooth transition from school to work. Apprenticeship training is understood there as a preparation for subsequent working life and is not assigned to a specific level in the education system. A consequence is that apprenticeship completion does not allow people to re-enter the education system at a higher level and educational advancement necessitates attending some special courses which make it more strenuous and time-consuming than in France, where vocational education does not primarily aim at preparing youngsters to a certain profession but is rather a way of getting access to a higher level of qualification. Thus, the French education system is oriented towards levels of qualification rather than towards occupational training like the German one. In other words, in the French education system, the primary concern of pupils is to decide on the highest possible education level they should strive for given their abilities, while the choice of the field of training is rather of secondary importance. Conversely, in the German logic, the young person typically chooses the occupation he or she wants to exercise and decides upon the type of training accordingly. One element of explanation for this is that the decision regarding the possible level of educational attainment is strongly predetermined by the kind of secondary school attended (not going to *Gymnasium*, for instance, reduces dramatically the chances of studying at university), and that this streaming of pupils according to their learning abilities takes place at a very early age compared to France. Therefore, in most cases, the decision on the final level of education aimed at has already been taken at a young age and the decision on the subject of study or on the occupation becomes the primary element to be decided upon at a later stage of the educational career.

At the tertiary level, there are also noticeable differences. The German system is relatively homogeneous, with the central position of universities and the existence of the more practically oriented *Fachhochschulen*. The French landscape

of higher education is much more diverse and differentiated. Indeed, at a given education level, different types of private and public institutions (universities, *Grandes Ecoles*, institutes etc.) coexist and offer a wide range of study programmes with different purposes and approaches. Moreover, the vertical stratification is also much more pronounced in France than in Germany. The universities themselves offer certificates at a larger number of levels: *Bac+2* (e.g. DEUG), *Bac+3* (e.g. *licence*), *Bac+4* (e.g. *maîtrise*), *Bac+5* (e.g. DESS), *Bac+8* (doctorate). Besides, there exists, on the one hand, a large number of short-track practically oriented tertiary level studies (BTS, DUT etc.) and, on the other hand, elite institutions, the so-called, *Grandes Ecoles*, which both have no equivalent in Germany.

Those different conceptions of the role and organisation of the education system have repercussions on the distribution of educational attainment among the population of both countries. Making use of the comparative typology of educational credentials established in this documentation, empirical evidence on the distribution of educational attainment in France and Germany could be drawn from representative individual data sets. The main findings can be summarised as follows.

Enrolment rates prove to be higher in France than in Germany in the age group from 15 to 25, while the reverse is true in the age group from 25 to 35. Thus, more people make short study courses in France, but those who make long study courses study longer in Germany. There has been a strong expansion of enrolments in both countries since the mid-1980s, but significantly stronger in France, especially in the age group from 20 to 25. In France, the enrolment rates are higher among women than among men (except in the age group from 30 to 35, where they are equal), whereas in Germany, if there has been a convergence of enrolment rates in the age group from 15 to 25, the gender gap in favour of men at older ages remains very large.

As far as the distribution of secondary school degrees is concerned, it appears that there is a stronger dispersion in France than in Germany, with at the same time more people having no school degree at all and more people holding the maturity certificate. The level of secondary school attainment has risen steadily since the middle of the 1980s in both countries, but the rise has been stronger in France, with a stronger drop in the share of individuals with only a low secondary school degree and a stronger expansion of the share of intermediate and maturity certificates holders. On average, in France, women hold higher secondary school degrees than French men, with higher shares of intermediate and maturity certificates. French women have improved their comparative advantage since the mid-1980s, particularly with respect to general maturity certificates. In Germany also, women have improved their position compared to men, but the strong decrease of the share of *Hauptschule* holders has been matched by a particularly

strong increase in the share of intermediate certificates (*Realschule*), while men have conserved their advantage in terms of maturity certificates.

Turning to the distribution of final educational attainment, a similar pattern is observable. First, there is stronger dispersion of educational attainment in France than in Germany. A much larger proportion of French people has no vocational qualification, and the bulk of them do not even dispose of a secondary school degree. At the same time, there are more tertiary level graduates in the French than in the German population. Looking more in detail, the difference stems essentially from a much higher share of individuals with a lower tertiary level degree in France (twice as high as in Germany), while the shares of upper tertiary level graduates differ only slightly in both countries. On the other hand, in Germany, the distribution of final educational attainment is rather concentrated around basic and intermediate vocational qualifications. For the same level of vocational education, French people generally have a higher level of general education. In particular, a non-negligible part of the French holds the general maturity certificate only as a highest degree, while this is extremely unusual in Germany.

There has been a general upgrading of educational attainment in both countries since the middle of the 1980s, with a decrease in the share of individuals with no vocational qualification and an increase in intermediate³³ or tertiary level qualifications. However, educational expansion has been much stronger in France than in Germany. Moreover, it can be observed that for the same level of vocational education, the level of general education has increased over time. The expansion of tertiary level graduates has been weaker in Germany, but essentially because of the low progression of the lower tertiary (*Fachhochschule*) level.

Like for secondary school degrees, gender differences are much more pronounced in Germany than in France. Thus, twice as many women as men do not hold any vocational degree in Germany, compared to only 20 percent more women in France. Moreover, while the share of tertiary level graduates is roughly similar for men and women in France³⁴, there is a huge gap in favour of men in Germany. Generally speaking, women seem to lay more emphasis on general education and men on vocational education. Indeed, in both countries, women tend to hold a higher general education for a given level of final vocational education. At the intermediate level, for instance, more women hold the general maturity certificate, while more men hold an advanced vocational certificate or the vocational maturity certificate. In Germany, women have improved somewhat their position compared to men since the middle of the 1980s through a stronger drop than for men in the share of individuals with no vocational degree. This results

33 And in France, the sharp decrease in the share of people with no vocational degree has also been matched by an increase in the share of CAP/BEP degrees.

34 Even though women tend to have more often a lower tertiary level degree and men more often an upper tertiary level degree.

in a stronger increase in the share of women holding a basic or intermediate qualification in Germany. However, at the tertiary level, the expansion has been stronger among men and the gap in favour of men rather tends to widen up over time in absolute terms. The situation is different in France, where educational expansion has been stronger among women in particular with respect to the shares of *Baccalauréat* and tertiary level degrees.

Thus, the analysis made it possible to identify some distinctive features of educational attainment in France and Germany, both in the design of the education system and in the resulting educational distribution. Beyond the interest of the analysis per se, being aware of these specific features should help analyse and interpret education-related outcomes in France and Germany, in particular labour market outcomes.

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Appendix

A Glossary

Note: F=France, G=Germany

<i>Abendschule, Abendkolleg (G)</i>	Night school
<i>Abitur (G)</i>	High school (<i>Gymnasium</i>) degree
<i>Abschluss (G)</i>	Degree, certificate, diploma
<i>Académie (F)</i>	Educational jurisdiction
<i>Allgemeine Hochschulreife (G)</i>	General university entrance qualification
<i>Apprentissage (F)</i>	Apprenticeship
<i>Bac, Baccalauréat (F)</i>	High school degree
<i>Bac Généré, Baccalauréat Général (F)</i>	General high school degree
<i>Bac Pro, Baccalauréat Professionnel (F)</i>	Vocational high school degree
<i>Baccalauréat ES (F)</i>	<i>Bac Généré</i> , economic and social section
<i>Baccalauréat L (F)</i>	<i>Bac Généré</i> , literary section
<i>Baccalauréat S (F)</i>	<i>Bac Généré</i> , scientific section
<i>BAFöG, Bundesausbildungsförderungsgesetz (G)</i>	Federal Training Assistance Law
<i>BE, Brevet d'Enseignement (F)</i>	Vocational certificate
<i>BEA, BE Agricole (F)</i>	Vocational certificate, agriculture
<i>BEC, BE Commercial (F)</i>	Vocational certificate, commerce
<i>BEH, BE Hôtelier (F)</i>	Vocational certificate, hotel management
<i>BEI, BE Industriel (F)</i>	Vocational certificate, industry
<i>BEP, Brevet d'Etudes Professionnelles (F)</i>	Vocational studies certificate
<i>BEPC, Brevet d'Etudes du Premier Cycle (F)</i>	<i>Collège</i> certificate
<i>Berufsaufbauschule (G)</i>	Vocational extension school
<i>Berufsschule (G)</i>	Part-time vocational school
<i>Berufsfachschule (G)</i>	Full-time vocational school
<i>BES, BE Social (F)</i>	Vocational certificate, social
<i>BLK, Bund-Länder-Kommission für Bildungsplanung und Forschungsförderung (G)</i>	<i>Bund-Länder</i> Commission for Educational Planning and Research Promotion
<i>Brevet National (F)</i>	National certificate, see <i>BEPC</i>
<i>BP, Brevet Professionnel (F)</i>	Master craftsmen certificate
<i>BT, Brevet de Technicien (F)</i>	Technical certificate
<i>BTn, Baccalauréat Technologique (F)</i>	Technological high school degree

<i>BTn SMS, Sciences Médico-Sociales (F)</i>	BTn, medical and social sciences
<i>BTn STAE, Sciences et Technologies de l'Agronomie et de l'Environnement (F)</i>	BTn, agricultural and environmental sciences and technologies
<i>BTn STI, Sciences et Technologies Industrielles (F)</i>	BTn, industrial sciences and technologies
<i>BTn STL, Sciences et Technologies de Laboratoire (F)</i>	BTn, laboratory sciences and technologies
<i>BTn STPA, Sciences et Technologies du Produit Agro-Alimentaires (F)</i>	BTn, farm-produce industry sciences and technologies
<i>BTn STT, Sciences et Technologies Tertiaires (F)</i>	BTn, tertiary sciences and technologies
<i>BTS, Brevet de Techniciens Supérieurs (F)</i>	Advanced technical certificate
<i>Bund (G)</i>	Federation
<i>CAP, Certificat d'Aptitude Professionnelle (F)</i>	Vocational aptitude certificate
<i>CEP, Certificat d'Etudes Primaires (F)</i>	Primary school certificate
<i>CES, Contrat-Emploi-Solidarité (F)</i>	Solidarity-employment contract
<i>CFA, Centre de Formation des Apprentis (F)</i>	Apprenticeship training centre
<i>CFES, Certificat de Fins d'Etudes Secondaires (F)</i>	Upper secondary education certificate
<i>CFI, Crédit Formation Individualisé (F)</i>	Individualized training credit
<i>Collège (F)</i>	Lower secondary school
<i>CPGE, Classe Préparatoire aux Grandes Ecoles (F)</i>	Preparatory class for entrance examinations for admission to French <i>Grandes Ecoles</i>
<i>DEA, Diplôme d'Etudes Approfondies (F)</i>	Advanced research studies certificate, <i>Bac+5</i>
<i>DESS, Diplôme d'Etudes Supérieures Spécialisées (F)</i>	Advanced specialized studies, <i>Bac+5</i>
<i>DEUG, Diplôme d'Etudes Universitaires Générales (F)</i>	First cycle university degree, <i>Bac+2</i>
<i>DEUST, Diplôme d'Etudes Universitaires Scientifiques et Techniques (F)</i>	Scientific and technical studies certificate, <i>Bac+2</i>
<i>DFEO, Diplôme de Fin d'Etudes Obligatoires (F)</i>	Compulsory education certificate
<i>Diplom (G)</i>	Academic examination
<i>Diplomprüfung (G)</i>	<i>Diplom</i> examination
<i>Doctorat (F)</i>	Doctorate, <i>Bac+8</i>
<i>Duales System (G)</i>	Apprenticeship system in Germany
<i>DUT, Diplôme Universitaire Technologique (F)</i>	Technical university degree, <i>Bac+2</i>

<i>Ecole élémentaire (F)</i>	Primary school
<i>Ecole maternelle (F)</i>	Nursery school
<i>Ecole Polytechnique (F)</i>	Name of a specific graduate school of engineering
<i>Ecoles d'ingénieurs (F)</i>	Graduate schools for engineering
<i>Ecoles de commerce et de gestion (F)</i>	Graduate schools for business administration
<i>ENA, Ecole Nationale d'Administration (F)</i>	Graduate schools for public administration
<i>Enquête Emploi (F)</i>	Employment Survey
<i>ENS, Ecole Normale Supérieure (F)</i>	Name of a specific scientific graduate school
<i>ENV, Ecole Nationale Vétérinaire (F)</i>	Name of a specific graduate school for veterinary
<i>Fachgebundene Hochschulreife (G)</i>	Subject-specific university entrance qualification
<i>Fachgymnasium, berufliches Gymnasium (G)</i>	Specialized <i>Gymnasium</i>
<i>Fachhochschule (G)</i>	Higher technical college
<i>Fachoberschule (G)</i>	Technical secondary school
<i>Fachschule (G)</i>	Technical college
<i>Formation en alternance (F)</i>	Part-time training
<i>FQP, Enquête Formation et Qualifications Professionnelles (F)</i>	Education and Qualification Survey
<i>Gesamtschule (G)</i>	Comprehensive school
<i>Grande Ecole (F)</i>	Graduate school
<i>Grundgesetz (G)</i>	Basic Law
<i>Grundschule (G)</i>	Primary school
<i>Grundstudium (G)</i>	Basic university studies cycle
<i>GSOEP (G)</i>	German Socio-Economic Panel
<i>Gymnasium (G)</i>	High school
<i>Gymnasiums-Oberstufe (G)</i>	Gymnasium-2nd stage
<i>Hauptschule (G)</i>	Lower secondary school
<i>Hauptstudium (G)</i>	Advanced university studies cycle
<i>Hochschulprüfung (G)</i>	Academic examination
<i>Hochschulrahmengesetz (G)</i>	Framework law governing the general principles for higher education
<i>IEP, Institut d'Etudes Politiques (F)</i>	Institute for political studies
<i>IUFM, Institut Universitaire de Formation des Maîtres (F)</i>	Teacher training university institute
<i>IUP, Institut Universitaire Professionnel (F)</i>	Vocational university institute
<i>IUT, Institut Universitaire</i>	Technical university institute

<i>Technologique (F)</i>	Nursery school
<i>Kindergarten (G)</i>	Church examination
<i>Kirchliche Prüfung (G)</i>	Standing Conference of the <i>Länder</i> Ministers of Education and Cultural Affairs
<i>KMK, Ständige Kultusminister- konferenz (G)</i>	Federal state(s)
<i>Land, Länder (G)</i>	Apprenticeship
<i>Lehre, Lehrausbildung (G)</i>	University degree, <i>Bac+3</i>
<i>Licence (F)</i>	Upper secondary school
<i>Lycée (F)</i>	General and/or technological <i>Lycée</i>
<i>Lycée d'enseignements général et technologique (F)</i>	Vocational <i>Lycée</i>
<i>Lycée professionnel (F)</i>	University degree (initial degree or post- graduate) combining several subjects
<i>MA, Magister Artium (G)</i>	University degree, <i>Bac+4</i>
<i>Maîtrise (F)</i>	Master craftsmen certificate
<i>Meisterbrief (G)</i>	Doctorate
<i>Promotion (G)</i>	Intermediate secondary school
<i>Realschule (G)</i>	Special school
<i>Sonderschule (G)</i>	Social contribution
<i>Sozialbeitrag (G)</i>	State examination
<i>Staatsexamen (G)</i>	Higher technical classes
<i>STS, Section de Techniciens Supérieurs (F)</i>	Contribution to the student administration
<i>Studentenwerksbeitrag (G)</i>	Intermediate university examination
<i>Vordiplomprüfung (G)</i>	Pre-school class at primary school
<i>Vorschule (G)</i>	see <i>Vordiplomprüfung</i>
<i>Zwischenprüfung (G)</i>	

B Detailed tables

Table 5: Detailed shares of the population with no vocational degree (Level 1) in France and Germany, 1984-99 (in percentage of total population)

	No degree			Lower secondary			Interm. secondary		
	Men	Women	All	Men	Women	All	Men	Women	All
Germany									
1984	1.8	2.2	2.0	12.5	36.3	25.1	1.0	3.5	2.3
1985	1.7	2.0	1.9	11.4	35.3	24.1	1.0	3.6	2.4
1986	1.7	2.1	1.9	11.4	33.8	23.2	1.1	3.7	2.5
1987	1.7	2.1	1.9	11.0	33.1	22.6	1.3	3.5	2.5
1988	1.7	2.2	2.0	10.9	32.2	22.1	1.3	3.6	2.5
1989	1.8	2.2	2.0	11.0	31.0	21.5	1.5	3.7	2.7
1990	2.0	2.5	2.3	11.0	29.2	20.5	1.6	3.9	2.8
1991	2.2	2.6	2.4	11.6	27.9	20.2	1.6	4.0	2.9
1992	2.5	2.8	2.7	11.7	27.4	20.0	1.6	3.9	2.8
1993	2.6	3.2	2.9	11.3	27.1	19.6	1.6	3.9	2.8
1994	2.9	3.8	3.4	11.3	26.2	19.2	1.6	3.8	2.7
1995	2.3	3.3	2.8	11.2	25.3	18.7	1.5	3.8	2.7
1996	2.5	3.4	3.0	10.1	24.0	17.4	1.5	4.1	2.8
1997	2.8	3.8	3.3	10.9	23.4	17.4	1.6	4.3	3.0
1998	3.1	3.7	3.4	10.7	22.3	16.8	1.6	4.7	3.2
1999	3.1	4.2	3.7	10.8	22.5	17.0	1.5	4.9	3.4
France									
1984	27.4	29.2	28.3	24.3	29.8	27.1	5.7	7.8	6.8
1985	26.9	28.9	27.9	23.7	29.1	26.5	5.9	7.9	6.9
1986	26.1	28.0	27.1	22.9	28.3	25.6	6.2	8.2	7.2
1987	25.8	27.7	26.8	21.9	27.0	24.5	6.1	8.1	7.1
1988	25.3	26.8	26.1	21.1	26.2	23.7	6.1	8.5	7.3
1989	24.4	26.1	25.3	20.7	25.7	23.2	6.4	9.0	7.7
1990	25.0	26.4	25.7	19.2	24.5	21.9	6.3	8.9	7.7
1991	25.1	26.4	25.8	18.3	23.7	21.1	6.2	8.4	7.3
1992	25.6	26.7	26.2	17.2	22.6	19.9	5.9	8.2	7.1
1993	24.4	25.3	24.9	16.8	22.2	19.6	6.0	8.4	7.3
1994	23.9	25.0	24.4	16.1	21.4	18.8	6.1	8.5	7.3
1995	23.4	24.4	23.9	15.6	20.9	18.3	6.1	8.6	7.4
1996	23.4	24.0	23.7	14.8	19.9	17.4	6.1	8.4	7.3
1997	23.0	23.8	23.4	14.3	19.0	16.7	5.9	8.4	7.2
1998	22.7	23.2	22.9	13.3	18.2	15.8	6.0	8.3	7.2
1999	22.3	23.0	22.6	12.6	17.3	15.0	5.9	8.1	7.0

Table 6: Detailed shares of the population with a basic vocational degree only (Level 2) in France and Germany, 1984-99 (in percentage of total population)

	No or lower secondary school			Intermediate secondary school		
	Men	Women	All	Men	Women	All
Germany						
1984	43.6	30.1	36.4	8.3	12.0	10.3
1985	42.5	29.5	35.6	8.9	12.7	10.9
1986	42.1	29.7	35.6	9.2	13.2	11.3
1987	41.9	29.9	35.6	9.5	13.0	11.3
1988	41.2	30.1	35.4	9.6	13.1	11.4
1989	40.4	30.2	35.0	9.9	13.2	11.7
1990	39.9	30.2	34.8	10.1	13.7	12.0
1991	38.6	29.6	33.9	9.4	14.6	12.1
1992	37.9	28.6	33.0	9.4	15.1	12.5
1993	37.6	28.6	32.9	9.1	15.0	12.2
1994	36.3	27.5	31.6	9.6	15.8	12.9
1995	36.6	27.5	31.8	10.0	15.9	13.1
1996	37.3	28.3	32.5	10.1	16.5	13.5
1997	36.4	27.8	31.9	10.0	16.8	13.5
1998	36.1	27.4	31.5	10.4	17.3	14.0
1999	35.9	27.3	31.3	9.7	16.2	13.2
France						
1984	18.9	10.5	14.6	3.1	4.2	3.7
1985	19.3	10.8	14.9	3.5	4.5	4.0
1986	19.7	11.1	15.3	4.0	5.0	4.5
1987	20.2	11.3	15.6	4.3	5.3	4.8
1988	20.3	11.7	15.9	4.5	5.6	5.1
1989	21.1	11.8	16.3	4.9	5.7	5.3
1990	21.3	12.2	16.6	5.4	6.1	5.8
1991	21.9	12.6	17.1	5.3	6.4	5.9
1992	21.9	12.9	17.3	5.6	6.6	6.1
1993	22.1	12.8	17.3	6.2	7.0	6.7
1994	22.1	12.8	17.3	6.9	7.5	7.2
1995	22.2	12.5	17.2	7.2	7.9	7.5
1996	22.4	12.9	17.5	7.0	8.1	7.6
1997	22.1	12.8	17.3	7.5	8.4	7.9
1998	22.3	12.7	17.4	7.6	8.6	8.1
1999	21.9	12.6	17.2	7.8	8.8	8.4

Table 7: Detailed shares of the population with an intermediate vocational degree only (Level 3) in France and Germany, 1984-99 (in percentage of total population)

	Interm. voc.			Voc. maturity			Gen. maturity			Maturity+voc.		
	M	W	All	M	W	All	M	W	All	M	W	All
Germany												
84	13.1	6.3	9.5	3.4	1.7	2.5	0.5	0.7	0.6	2.5	1.6	2.0
85	13.8	6.7	10.0	3.1	1.7	2.4	0.5	0.7	0.6	2.9	1.8	2.3
86	13.3	6.6	9.8	3.2	2.0	2.6	0.7	0.7	0.7	3.1	2.0	2.5
87	13.5	6.7	9.9	3.1	2.3	2.7	0.7	0.8	0.7	2.9	2.1	2.5
88	13.7	7.1	10.5	3.2	2.2	2.7	0.7	0.8	0.7	2.8	2.1	2.4
89	13.6	7.2	10.5	3.3	2.4	2.8	0.8	0.8	0.8	2.9	2.4	2.6
90	12.8	7.5	10.1	3.6	2.3	2.9	1.0	0.8	0.9	2.9	2.6	2.7
91	12.9	7.5	10.0	3.8	2.6	3.1	0.9	0.8	0.9	3.2	2.8	3.0
92	12.6	8.0	10.2	4.0	2.8	3.4	1.1	0.9	1.0	3.1	2.7	2.9
93	12.4	7.0	10.1	4.3	2.6	3.4	1.3	1.1	1.2	3.5	2.8	3.1
94	12.6	7.4	9.8	4.5	2.9	3.6	1.2	1.0	1.1	2.9	3.2	3.1
95	13.2	7.9	10.4	4.2	2.9	3.5	1.4	1.0	1.2	2.7	3.4	3.0
96	13.0	7.3	10.0	4.0	2.9	3.4	1.6	1.2	1.4	2.9	3.8	3.4
97	12.7	7.2	9.8	4.0	3.1	3.5	1.5	1.3	1.4	3.0	4.2	3.6
98	13.6	7.1	10.2	4.0	3.3	3.6	0.6	1.1	0.9	3.1	4.0	3.5
99	13.3	6.8	9.9	3.5	3.3	3.4	0.7	1.1	1.0	2.9	4.2	3.6
France												
84	2.4	1.5	1.9	1.9	1.2	1.5	3.6	4.6	4.1	0.8	1.0	0.9
85	2.4	1.4	1.9	1.8	1.4	1.6	3.6	4.5	4.1	0.9	0.9	0.9
86	2.4	1.5	1.9	2.0	1.6	1.8	3.8	4.6	4.2	0.8	0.9	0.9
87	2.4	1.6	2.0	2.1	1.7	1.9	3.9	4.8	4.4	0.8	1.0	0.9
88	2.4	1.5	2.0	2.2	1.8	2.0	4.2	5.1	4.6	0.8	0.9	0.8
89	2.4	1.5	1.9	2.3	1.8	2.1	4.2	5.3	4.8	0.7	0.9	0.8
90	2.5	1.6	2.1	2.1	2.1	2.1	4.1	5.2	4.6	0.7	0.9	0.8
91	2.2	1.4	1.8	2.6	2.5	2.5	3.9	5.1	4.5	0.6	0.8	0.7
92	1.9	1.2	1.6	2.9	2.7	2.8	4.0	5.2	4.6	0.5	0.8	0.7
93	1.9	1.2	1.6	2.9	2.8	2.8	3.9	5.2	4.6	0.6	0.8	0.6
94	1.8	1.2	1.5	2.9	2.7	2.8	4.1	5.4	4.8	0.6	0.8	0.7
95	1.7	1.2	1.4	3.0	2.7	2.9	4.1	5.5	4.8	0.6	0.8	0.7
96	1.7	1.2	1.4	3.0	2.8	2.9	4.1	5.9	5.0	0.7	0.8	0.8
97	1.8	1.2	1.4	3.2	2.9	3.0	4.3	6.0	5.2	0.7	0.8	0.8
98	1.7	1.3	1.5	3.4	3.1	3.3	4.5	6.2	5.4	0.7	0.8	0.8
99	1.8	1.4	1.6	3.6	3.2	3.4	4.5	6.4	5.5	0.7	0.8	0.7

Note: M=Men, W=Women

Table 8: Composition of the population with a higher education degree (Level 4) in France, 1984 and 1999

Level	Highest degree obtained	Men		Women		All	
		1984	1999	1984	1999	1984	1999
40	Lower tertiary	100	100	100	100	100	100
400	DEUG	30.1	20.4	35.1	22.3	33.2	21.5
401	BTS/DUT	58.2	71.1	23.4	42.7	37.1	54.7
402	Paramedical	11.6	8.5	41.5	35.0	29.8	23.8
41	Upper tertiary	100	100	100	100	100	100
	University	55.4	59.8	89.4	84.8	67.5	70.7
410	Bac+3/4	24.0	31.6	50.9	55.5	33.6	42.1
411	Bac+5	31.3	28.2	38.5	29.3	33.9	28.7
	Grande Ecole	44.7	40.2	10.6	15.2	32.5	29.3
412	Grande Ecole	30.7	32.4	7.5	12.8	22.4	23.9
413	Top Grande Ecole	13.9	7.7	3.1	2.4	10.1	5.4