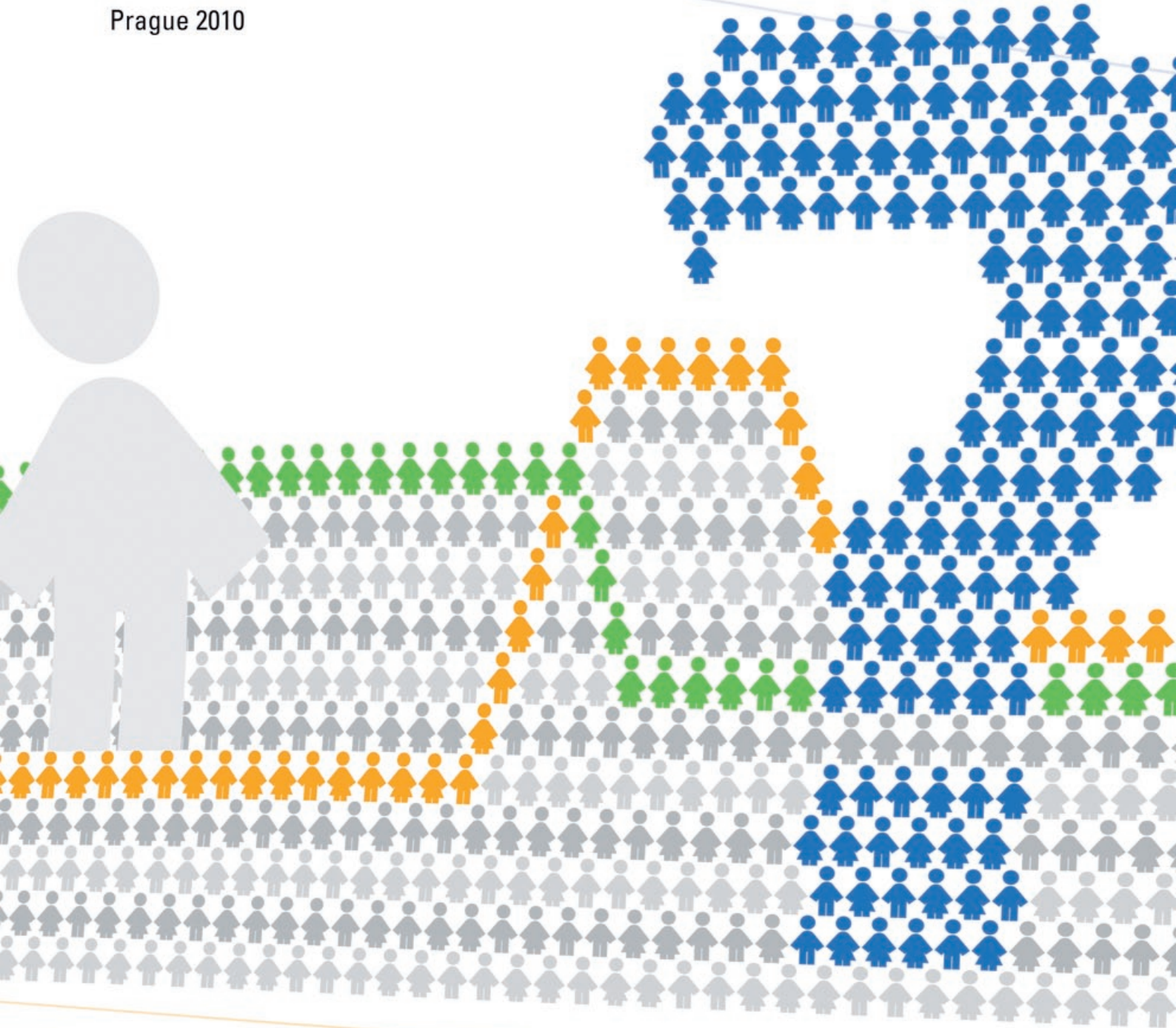
CHARLES UNIVERSITY IN PRAGUE
FACULTY OF EDUCATION
EDUCATION POLICY CENTRE

Who gets a degree?

Access to tertiary education in Europe 1950–2009

Jan Koucký, Aleš Bartušek and Jan Kovařovic

Prague 2010



The study **Who gets a degree? Access to tertiary education in Europe 1950–2009** was developed thanks to financial support from the Ministry of Education, Youth and Sports of the Czech Republic.

*Studie **Kdo získává diplom? Přístup k terciárnímu vzdělání v Evropě 1950–2009** vznikla díky finanční podpoře Ministerstva školství, mládeže a tělovýchovy České republiky (MŠMT ČR).*

ISBN 978-80-7290-441-9

Who gets a degree?

Access to tertiary education in Europe 1950–2009

Jan Koucký, Aleš Bartušek and Jan Kovařovic

Education Policy Centre, Faculty of Education, Charles University
Prague 2010

Contents

Preface

About the project. The study ***Who gets a degree? Access to tertiary education in Europe 1950–2009*** (both in Czech and English) is the output of the fourth stage of the project Inequality in Access to Higher and Tertiary Education in the Czech Republic and other European countries, carried out since 2007 by the Education Policy Centre (EPC) at the Faculty of Education, Charles University in Prague and supported by the Ministry of Education, Youth and Sports of the Czech Republic.

The objective of the ***first stage*** of the project in 2007 was to find out whether, to what extent and how it is possible to use databases of the first two rounds of the European Social Survey conducted in 2002/2003 (ESS-1) and 2004/2005 (ESS-2) for the purpose of examining and analysing the degree of inequality in access to tertiary education in the Czech Republic and other European countries. Another aim was to develop, on the basis of analyses of the combined set of data from the first two ESS rounds, indicators and a model (models) of inter-generational transmission of inequalities in access to tertiary education, and to interpret the outcomes. Finally, the third objective was to propose implementation of the project in the following stages.

The output of the first stage of the project was an analytical study ***Inequality and Access to Tertiary Education: European Countries 1950–2005***, published as an EPC working paper in 2007. The study contained a definition of basic theoretical and conceptual contexts, a proposal for methodological approaches and the actual analysis of 22 European countries (the analysed overall set of data included 72 694 respondents). The study was developed in both Czech and English versions to be used as part of the OECD project *Tertiary Education Review*; in the final report (OECD 2008) the outcomes of the study were indeed used and quoted. The English version of the study was sent to some thirty international experts for comments. The comments received were used by the authors during the second stage of project implementation.

The objective of the ***second stage*** of the project in 2008 was to develop a more extensive comparative analysis of inequality in access to tertiary education in 23 European countries. In order to achieve it, authors were building on the theoretical basis prepared, tested and commented upon during the first stage as well as, and most importantly, the methodological approach which, however, had to be both upgraded and updated on the basis of the comments and other innovation proposed. The empirical data from the ESS database were expanded to include the relevant data from the third stage of ESS-3 of 2006/2007 and complemented by data from a special Czech national survey conducted at the turn of 2007/2008. The new data made it possible not only to update but also to expand considerably the analysed sets of respondents in most European countries (the analysed set of data included 115 695 respondents), which, understandably, brought a number of major benefits.

The main output of the second stage of the project was the analytical study ***Who Is More Equal? Access to Tertiary Education in Europe***, published by the EPC in 2009. The study was first presented during a major UNESCO conference "Forum on Higher Education: Access, Values, Quality and Competitiveness" in Bucharest in May 2009. It was also presented at some events organised by the Czech and Swedish Presidencies of the Council of the EU in 2009 (for example at the meeting of Directors General for Higher Education and Presidents of Rectors' Conferences, at the meeting of the Standing Group for Indicators and Benchmarks of the European Commission, or at the meeting of the Bologna Follow-up Group). Because the EPC is participating in a European project EQUALSOC, the study was discussed at the Tallinn workshop, and made available on the EQUALSOC website.

The aim of the ***third stage*** of the project in 2009 was to develop a Czech national study (only in Czech) that would describe and explain in more detail the situation and development trends as regards access to tertiary education in the Czech Republic. The study drew on the Czech data from ESS and, most importantly, from the aforementioned special Czech national survey of 2007/2008. The Czech national study, of course, made use of the analytical procedures already developed and the available results of comparisons with other European countries. Moreover, it showed other conceptual, methodological and empirical approaches and new directions in analysing access to tertiary education.

The project has continued in 2010 by the ***fourth stage*** introducing several major developments. The EPC has made use of the comments to the previous studies, and has used new data from the fourth stage of ESS-4 of 2008/2009. These data, again, has made it possible to update and further expand the database, to extend the sets of respondents and also to increase the number of countries included in the study. The analysed set of data created by combining national sets for 25 European countries includes a total of 160 685 respondents. The size the individual country sets normally ranges from 4 to 8 thousand respondents.

The study ***Who gets a degree? Access to tertiary education in Europe 1950–2009*** that is now presented is the output of the fourth stage of the project. The study is for the first time presented at the international conference "The Social Dimension and Responsibility of Universities" organised by the Spanish presidency of the EU in Malaga, May 2010, and at the final conference concluding the project EQUALSOC in Amsterdam, June 2010.

The project will continue in 2010/2011 by the ***fifth stage***. Its most important contribution will be in changing the focus, and not limiting it only on access to, and outcomes of, tertiary education. Instead new analyses will try to provide a comprehensive picture of the relationships between family background, access to education, the position of graduates on the labour market and their social status that is they will include also effects of tertiary education. The fifth stage of the project will be completed by an extensive comparative study the working title of which is ***Tertiary Education Between Origin and Destination.***

About the study. The initial chapter places the study within a broader context. The first part of this chapter explains what economic, political and social reasons resulted in expanding higher—or more precisely tertiary—education, and describes how the enlarging of access to this education changed its roles and functions. It is concerned with key concepts, as equal opportunities, inequalities in access to tertiary education and a gradual establishment of the *equity* principle as one of the main objectives of current education policies. The next part then deals with expansion of tertiary education, which not only facilitates a much higher participation rate, but also necessarily results in diversification of tertiary institutions and changes in their structure. It

discusses some interpretations of the impact of expansion on the development of inequalities in access to tertiary education. The final part is dedicated to the Bologna Process and explains the focus of this study.

The second chapter presents the empirical sources of analyses and explains, always using specific examples of two countries, the main methodological approaches developed. It describes the analysed set of ESS data and the variables used, and it explains the method of defining the age cohorts representing the individual historical periods. Moreover, the chapter describes the model used to analyse inequalities in access to tertiary education and the resulting indicator—the Inequality index. Finally, it describes the principle of revising the Inequality index values for the youngest age cohort in the most recent period.

The third, and the longest chapter presents the main results of the analysis of the level of inequalities in access to tertiary education in 25 countries over the last sixty years, and also the results of other subsequent analyses. It assesses the overall level of inequalities in access to tertiary education according to the Inequality index, and documents the development of inequalities in Europe as a whole and in various countries. The chapter tracks the development of the family background structure for various generations of young people, the changing education and occupational profile and social status of their parents and the changes in the impact of various family background factors. Finally, the chapter analyses the influence of expansion of tertiary education on the level of inequality.

The annex to the study presents the results of the analyses carried out for Europe as a whole and for each of the 25 countries examined. The short (one-page) profiles of all countries have been developed using a uniform approach and style. They contain the same indicators which makes them comparable. Before studying individual countries it is advisable to study the profile of Europe which, in addition to providing the results of the analysis, refers to the terms and concepts used, and describes how the indicators have been identified, what they mean and how they can be interpreted.

1 Expansion and Equity

The initial chapter sets the study in a wider context, by turn explaining respective facets of the problem. First, it outlines the reasons for widening the participation in upper levels of education, and specifically the expansion of tertiary education. Second, it summarises the problem of inequality in education, and outlines the importance of equity in education policy of today. Third, it links quantitative, qualitative and structural aspects of change together, and discusses their impact on inequality in access to tertiary education. Finally, it sums up the main objective of widening the participation, and defines the aim and position of this study.

1.1 Wider context

The role and position of education in modern European society underwent substantial changes in the course of the second half of the previous century. Higher levels of education were traditionally open to a relatively tiny group of the population. Unlike primary and later on, to a degree, also secondary education they remained for a much longer time highly elitist both in terms of the chances of its acquisition and in terms of the nature of education provided. Participation in higher education was very low even just before WWII[1]. However, the rate of participation (i.e. the proportion of students in the relevant age cohort) in tertiary education increased significantly in developed countries over the last sixty years. This has changed the structure and nature of universities and other tertiary education institutions as well as, and most importantly, the social functions and roles of tertiary education. The enormous growth in the share of the population studying at tertiary education institutions was the consequence of economic, political and social changes.

The ***economic prosperity*** in developed Europe after WWII brought about major changes at the labour market and in terms of employment structure. Jobs were created in large numbers and there were increasing requirements for well-prepared and skilled workforce. This was caused by a continuous emergence of new technologies and the related growth in productivity, new trends in consumption, expansion of international trade and changes in the division and organisation of labour. Moreover, transition from *agrarian societies* of the previous centuries depending primarily on land (still in 1870 nearly a half of the population of Western Europe worked in agriculture), to *industrial societies* focusing on machinery (the bulk of work took place in factories), was completed. In the second half of the 20th century the industrial era gradually comes to an end[2] and work in *service society* focuses more on trade, transport and similar activities demanding in terms of human labour (the largest proportion of employment moves from industry to traditional services). The last two decades of the 20th century witness another change where knowledge, innovation and information, as well as the human capacity to acquire knowledge, make use of it and learn, become the main productive force in the *knowledge society*.

Higher education is not only associated with a higher level of employability and income (and, consequently, higher living standards), but it is also considered to be a key factor of economic growth and technological advancement (among best-known and most important authors belong f.i. Becker, Blaug, Dennison, Harbison, Mincer, or Schultz). It was as early as the 1960s that the theory of *human capital* emerged and gained recognition with an assertion that the capacities and education of people were more important (and yielding better returns to investment both to society and individuals) than other forms of capital. However, the following decades saw a certain sobering up from overly optimistic expectations of the social benefits of investment in education (economic analyses repeatedly confirmed that the individual returns of education were higher than those to society, e.g. Psacharopoulos 2002). It was pointed out that some of the premises of the human capital theory were untenable (Wolf 2002), and attention was increasingly drawn to the importance of the signalling and allocating functions of education.

However, the importance of education for the development of society and the economy has been increasingly stressed again as a result of the gradual process of European integration and the building of the common market. This process is further reinforced by much stiffer global competition that requires that the potential of the entire population (preferably all social groups and individuals) be used in full, and therefore their education and qualifications be enhanced as much as possible.

The same requirements are, however, also stipulated by the ***development of society and politics.*** The post-war democratisation of education (first at upper secondary level, only later at tertiary level) was perceived as a substantial widening of rights and liberties of citizens and thus as part and parcel of the overall post-war democratisation in Europe. It was also linked with great expectations—some important political programmes assumed that education would become an effective instrument in tackling poverty and bringing more justice.

Anyway, education is a prerequisite for upholding democratic society that requires full participation in civic life. While some other bonds holding society together have been weakened, the education system is expected to function as an integrating force, limiting marginalisation and even exclusion of individuals and social groups. Education has a major influence not only on the stability and cohesion of society as a whole, but also on the development and the quality of life of each individual; it facilitates a larger degree of sharing the cultural wealth, establishment of broad social networks and healthier lifestyles.

Attention is currently focused not only on quantitative growth, but also on the actual distribution of educational opportunities in society. Nearly all developed countries seek, in addition to increasing the overall rate of participation in education, to increase and equalise participation of all social strata regardless of their social, economic, culture or ethnic background, and to ensure equal opportunities (or equity) for each individual. Efforts to overcome social inequality in access to higher education therefore constitute one of the principal characteristics of modern democratic society. Ensuring equal access to education based on individuals' ability and results (the concept of meritocracy) and not on

[1] Participation in higher education did not exceed 2 % of the age cohort at that time. Also it was increasing only very gradually, at the end of the 19th century it amounted to 1 % of males of the age cohort and almost no females (Wolf 2002). It exceeded 10 % only in the mid-1950s and only in some European countries.

[2] This development has been reflected in the theory of post-industrial society (Bell 1973).

ascriptive factors (i.e. the social, cultural and economic status of the family) has become a generally declared and acknowledged goal. Equity has become, along with quality and efficiency, one of the main objectives of education policies of developed countries as well as international organisations, namely of the European Union, the OECD and the UNESCO (D'Addio 2007).

There exist many grounds for it—and again on multiple levels, economic, socio-political and ethical. Equal access to education for members of all social groups and strata facilitates the development of the potential of the entire young generation and, in this way, ensures the most effective use of their talents and aptitudes for the benefits of the economy and society. It maintains social cohesion, as it facilitates changes in social status (status mobility) between the generations of parents and children. It prevents various classes and groups from becoming increasingly closed towards each other and distanced. It makes it more difficult for some to accumulate privileges and for others to be pushed to the margins of society and, in this way, it helps to avoid otherwise inevitable social conflicts. Finally, equal chances in life constitute one of the foundations of understanding justice in democratic societies, as all human beings should have the same human rights, which must also apply to their right to education.

The ***individual function of education*** has been strengthened as well. It was particularly in the post-war period of democratisation of society, which brought about extensive opportunities of enhancing individuals' social status and life, that education became a major factor of upward mobility, "the way up". Education attained became an important component of the social status of each individual and his/her family, and a factor of change. Tertiary education was indeed viewed as a relatively reliable "lift" to social success: to interesting and prestigious work, high living standard and style, and good social position.

Efforts to increase one's position (and/or that of one's own children) naturally resulted in an unprecedented growth of educational aspirations in all groups of society. Although individual demand for education does not always correspond to abilities or future position on the labour market, yet it has become the main driving force of the quantitative expansion of education.[3] After decades of expansion, tertiary education—today acquired by a substantial proportion of young people—is seen more as a safeguard against social decline than as a social lift, a safeguard that is even no longer entirely reliable (Keller 2008). Problems thus raised provoke a certain tension between social and individual functions of education.

1.2 Key concepts—inequalities and equity

Although equal access is formally guaranteed in almost all systems of tertiary education in developed countries, the influence of ascriptive[4] factors remains to be strong in most countries. To certain extent, it is an unintended consequence of the concept of meritocracy that is therefore justly criticised on the grounds that, although it emphasises competence and results, in fact it favours those who have had better conditions for achieving them only due to a more stimulating and richer (in economic, social and cultural terms) family background (see for example Arrow, Bowles and Durlauf 2000, or Bowles, Gintis and Groves 2008). The concept is even blamed for covering up the real causes of inequality by presenting socially determined (and therefore ethically unacceptable) inequalities as being the natural (and therefore legitimate) inequalities in individual abilities and performance (Bourdieu and Passeron 1970).

Inequalities in education are subject to systematic and intensive research that started as early as the 1960s and 1970s (for example Coleman and Jencks in the USA, Halsey and Goldthorpe in the United Kingdom, Boudon and Bourdieu in France, Goldschmidt and Müller in Germany, Husén and Ericsson in Sweden belong among authors of most important works), also some major international comparative studies were carried out (e.g. Boudon 1974, OECD 1975 and a later summary by Husén 1987). Since then sociological theory as well as empirical research have sought to ascertain and explain whether, to what degree and how education systems in various countries help overcome barriers in society, or, on the contrary, whether they act as instruments for inter-generational transmission of social status from parents to children. Various authors stress different components of this complex process and focus on its various aspects and levels. Their theories (e.g. the social and cultural theory of transmission of educational attainment) and models (e.g. the socio-psychological model of the stratification process) tend to be complementary rather than mutually exclusive.

For the purpose of analysing the causes and implications of inequalities Pierre Bourdieu (1986) defined various forms of capital that are essential in terms of generating social inequalities and their transmission. Based on the definition of economic capital, which was the starting point, he also produced definitions of cultural and social capital. They are used above all in European context, while in the USA the focus is on economic capital and also on intelligence. The distribution of the various forms of capital in society is very uneven, and their surplus or deficit leads to various forms of inequality. Also ways how to alleviate or compensate them differ. From the point-of-view of our study, it is important to know that there exists a close relationship between above forms of capital and indicators characterising occupation and education of both parents.

Economic capital is described, above all, in terms of the material and financial status of a family. A low level of this status is the most apparent: a poor economic situation either prevents individuals from studying or results in their dropping out of education and entering employment. The influence of economic capital on inequalities in access to tertiary education was the first aspect to be taken into account, and efforts were made to alleviate it (at least to a degree) by various forms of financial support. Inequalities arising from uneven distribution of cultural and social capital were at first problematic in terms of acknowledging their existence, and then it was uneasy to pinpoint their manifestations and causes. And this is why they are even more serious and difficult to redress.

[3] An excellent analysis of the above tendencies was carried out by an international team led by Professor Kjell Harnquist thirty years ago (OECD 1979).

[4] **Ascription** occurs when social class or stratum placement is primarily hereditary. In other words, people are placed in positions in a stratification system because of qualities beyond their control. Race, social class, strata or group (parental characteristics), sex, age, and ethnicity are good examples of these qualities. Ascription is one way sociologists explain why stratification occurs.

Social capital is defined usually as a complex of shared norms or values that promote social cooperation and generate trust (Fukuyama 1999). At individual and family micro-level, it is characterized by a network of contacts and acquaintances that may be utilized to acquire a higher status, and also by the importance of these networks (i.e. the size of the capital of those who form them). A high level of social capital may therefore contribute to acquisition of prestigious education and, later on, to a successful professional career and a high social status.[5]

Cultural capital involves the knowledge, skills, attitudes and values that allow an individual to succeed in society. It corresponds to the level of involvement in the dominant status culture from which the language and other symbolic codes (Bernstein 1975) are derived and on which the existing education system is based. Sufficient cultural capital is therefore a prerequisite for a successful passage through education. Families that share the dominant status culture and have acquired the relevant lifestyle, manners and modes of communication (according to Bernstein, a developed language code as distinct from a limited code typical of lower social classes), have, on the whole, a positive attitude to education, and their children have strong motivation and high educational aspirations. The situation is entirely different in families where the environment does not provide appropriate stimuli for the development of children and fails to prepare them for work at school. This results in both a low level of their aspirations and motivation and poorer school performance.

All three forms of inequality—resulting from the different wealth and financial situation, cultural standards and social contacts of a family—are strongly reflected in the differences in the educational paths of the children, and they are constantly transmitted. Equity in access to tertiary education is therefore influenced to a degree by the ways in which inequality was manifested at previous levels of education, for example when the choice of secondary school is made, however most importantly, it is influenced by the overall attitude to education.

If the level of inequality is high, there is a large degree of transmission of tertiary education between parents and children and social mobility[6] is limited. This is dangerous both in social and economic terms. The higher education system becomes increasingly closed (only a limited part of society has access to it) and ceases to respond to the needs of the entire nation. The society faces the risk that various social groups and strata become enclosed and it is not able to develop and make use of the capacities of young people with various talents across the entire social spectrum. As a result, the potential of new generations is insufficiently developed and used. To avoid such development and loss of human talent and capital it is necessary to create opportunities accessible for all and corresponding to their interests and aspirations (Brennan and Naidoo 2007). Therefore, not only expansion but also diversification of tertiary education is required.

For some forty years the term *equity*[7] has been elaborated on and gradually expanded to cover new perspectives and dimensions. Apart from equity in the sense of *access* it was at first equity in terms of *outcomes*—i.e. successful completion of studies—that was considered. Other dimensions relate not only to learning outcomes, but also to the effects of education that, in an ideal situation, should lead to a full use of the potential and capacities of each individual. The selected definitions presented below show that the term is still open to new interpretations and that varying levels of importance are attributed to its various aspects.

The OECD thematic review of tertiary education (OECD 2008b, p.14) defines, for example, equitable tertiary systems as those that „ensure that access to, participation in and outcomes of tertiary education are based only on individuals' innate ability and study effort. They ensure that educational potential at tertiary level is not the result of personal and social circumstances, including of factors such as socio-economic status, gender, ethnic origin, immigrant status, place of residence, age, or disability". The review distinguishes *equity of access* which „relates to equality of opportunities to enter tertiary education and access programmes at different levels and with distinct qualities, and *equity of outcomes* which relates to opportunities to progress and complete tertiary studies and also to achieve particular returns to tertiary education".

On the other hand, an important communication of the European Commission[8] focuses on overall socio-economic disadvantage, other inequalities—of gender, ethnic origin, disability or regional disparities—are relevant only as far as they contribute to it. It defines equitable systems as those that ensure that the outcomes of education and training are independent of socio-economic background and other factors that may lead to educational disadvantage, and stresses that treatment should be differentiated according to individuals' specific learning needs. It finds it useful to distinguish between *equity in access* (the same opportunities for all to access to quality education), in *treatment* (quality educational provision suited to individuals' needs) and in *outcomes* (the knowledge, competences, skills mastered and qualifications achieved within an educational system).

Moreover, a recent definition (OECD 2007) distinguishes two entirely different dimension of equity. These are *fairness* and *inclusion*. While the former relates to the principal meaning of the term and means that the personal and social situation of an individual should not pose an obstacle to a full use of their educational potential, the latter is considered to be more relevant at lower levels of education (it implies the basic standard of education for all). However, it may be helpful for interpretation of the relationship between expansion and equity in tertiary education, since it pays attention to the main positive effect of expansion—i.e. an increased level of inclusion (see 1.4) that is manifested by a higher level of educational attainment and qualifications of the entire population.

[5] At macro-level it is used for expressing the relationship of trust and cooperation in society (Putnam 2000), be it within one social group *(bonding social capital)* or between them *(bridging social capital)*.

[6] Social mobility depends upon the degree, to which an individual can change his/her social status during his/her lifetime *(intra-generation mobility)* or against the status of the family he/she was born in *(inter-generation mobility)*.

[7] It is important to distinguish between *equality* and *equity*. While *equality* is ideologically loaded and implies a tendency towards sameness (or even uniformity), basic meaning of *equity* is "moral justice of which laws are an imperfect expression, the spirit of justice to guide practical action and interpretation, fairness" (OECD 1997, p. 127), even "principles of justice used to correct laws when these would seem unfair in special circumstances" (Oxford Advanced Learner's Dictionary 1990). *Equity* is always related to an individual situation.

[8] Efficiency and equity in European education and training systems (2006).

1.3 Expansion and diversification

The development of tertiary education during the last sixty years shows that its expansion is inevitably interlinked with its diversification, both processes are interdependent, caused by the same reasons. The economic reasons and the demand on the labour market—when the graduation rate is growing—require more types and levels of education and training, including short and largely professionally and practically oriented programmes. Social reasons and widening of access result in a far higher heterogeneity of students and thus in a greater diversity of their aptitudes, interests, motivations and goals. Hence quantitative expansion is accompanied with structural transformation, and as new types of institutions and study programmes impact on other characteristics of tertiary education, also qualitative transformation is under way.

This fundamental threefold transformation proceeds in more stages than one. It was as early as the 1970s that American sociologist Trow—making use of the experience of US higher education institutions that were ahead of European development—defined together with the OECD[9] three basic phases of tertiary education (and thus three types of tertiary education systems) as elite, mass and universal. Trow characterised and explained them not only in terms of their function, goals, structure and further qualitative characteristics (e.g. governance, quality standards, access and selection, curriculum) but also quantitatively, according to the proportion of the relevant age group admitted to studies (that is to the entry rate). He established a 15 % limit for transition from the elite to the mass phase, and a 30 % limit for transition from the mass to the universal phase (Trow 1974), revising later both limits according to experience newly gained in Europe and the USA to 25 % and 50 % respectively (Trow 2005).

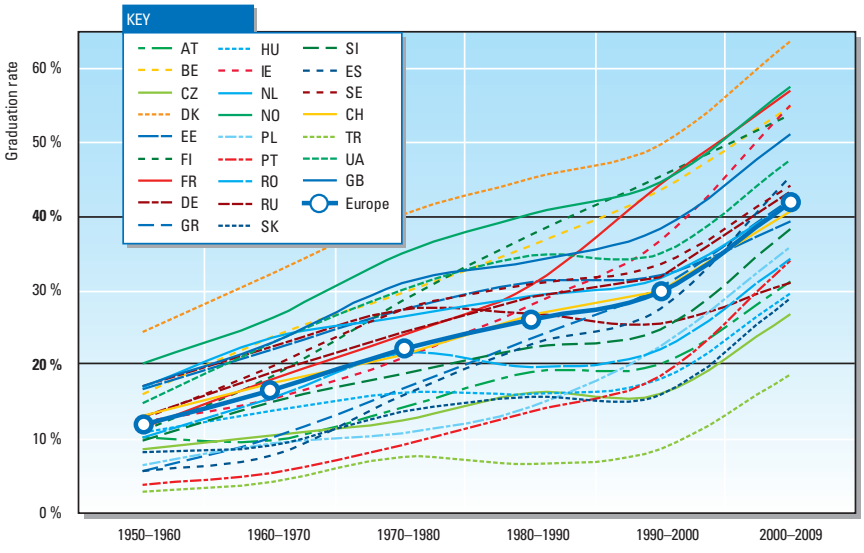
In Europe, the transition from the elite to the mass phase has been in progress since the second half of the 1960s. New short and mostly vocationally oriented programmes have been introduced, offered in new types of institutions that were often transformed from best upper secondary technical schools. A whole range included, for instance, *Polytechnics* in Great Britain and Finland, *Fachhochschulen* in Germany and Austria, *Institutes Universitaires de Technologie* and *Sections des Techniciens Supériers (STS)* in France, *Higher Vocational Schools (HBO)* in the Netherlands, *Flemmish Hogescholen* and *Wallonian Hautes Écoles* in Belgium, *Regional Colleges* in Ireland or Norway, or *Higher Professional Schools (VOŠ)* in the Czech Republic. Although they usually had a lower status as HE non-university institutions or as tertiary non-HE institutions, their graduates often found a good position on a growing labour market.

Some countries defined their tertiary education systems explicitly as binary with a clear distinction made between universities and other types of institution (today f.i. in Belgium, Finland or France). However, even in cases where these systems formally remained—or again became—unitary (f.i. in the Netherlands, Germany, or the United Kingdom), they still underwent internal structural and qualitative differentiation: vertical according to the position and prestige of the institution, and horizontal according to the focus and specialisation of the study programmes (Brennan and Naidoo 2007).

The increased intake has naturally meant a gradual increase in the number of graduates a few years later that is analysed in the following chapters of this study. However, the relationship between these two indicators is not a clear-cut and straightforward one, as it is influenced by a number of factors. These include the nature of transition between various sectors or institutions of tertiary education, the completion rate (it ranges between 60–90 % in European countries), accumulation of degree-level diplomas, interruption and resumption of studies, etc.[10] The European Social Survey data and subsequent analyses make possible to reconstruct a probable development of the graduation rate in European countries during the last sixty years (see the box *Reconstruction of the graduation rate in Europe 1950–2009*). This approach requires, however, that quantitative limits of the three phases of tertiary education are redefined in terms of the graduate rate, instead of the entry rate. As the completion rate is about 80 %, transition from the elite to the mass phase can be characterised by a 20 % proportion of graduates, and the proportion of 40 % of graduates in the relevant age group can be assigned to transition from the mass to the universal phase.

An analysis of the proportion of tertiary education graduates in the relevant age cohort in European countries over the last sixty years points to marked differences between the countries. At the same time it documents a dynamic increase in the graduation rate and the transition process between the three phases. In Europe transition from the elite to the mass phase occurred mostly in the early 1970s (slightly earlier in Norway, Denmark, the Netherlands and Belgium, slightly later in Poland, Portugal, the Czech Republic and Hungary; Turkey which will enter the mass phase in the coming years is the only exception). However, in terms of the proportion

Proportion of tertiary education graduates in population
European countries 1950–2009



[9] In 1973, a breakthrough OECD conference on higher education policies focused on changes that were under way in European HE systems at that time. Thanks to Martin Trow it was possible to define the course of further development and to recommend necessary reform steps. The conference had a lasting impact on the development of higher education in Western Europe (OECD 1974).

[10] When calculating the graduation rate, in order to prevent graduates to be counted more than once only the first tertiary education certificate of each graduate can be taken into account.

Reconstruction of graduation rate in Europe in 1950–2009

Attempts to reconstruct the sixty years of development of the numbers of admitted students and graduates and their proportions in the relevant age cohorts in a large number of European countries are problematic, no matter what approaches and data are used. It is difficult to procure historical time series related to the development of tertiary education over such a long period, not to mention their mutual comparability. First, they may not be available at all, and second, the definitions of various indicators often change and they are difficult to compare, lack consistency, etc.

The data obtained via analysing various age cohorts as part of extensive international surveys, which are transformed into indicators for various historical periods, have the advantage that they are more consistent and therefore more easily comparable in time and between countries. However, there are also various disadvantages. What is particularly complicated is the assigning of age cohorts to historical periods. There is always a certain distortion. For example, graduates in the 1950s may include those who acquired tertiary education at a higher age, for example during the 1960s. Another problem is that older people tend to overstate their education – i.e. describe it in present terms, although they studied several decades ago. For example, graduates of upper secondary or postsecondary institutions that, in the meantime, have been upgraded to tertiary level sometimes state that they acquired tertiary education. On the other hand, members of the youngest age cohort are often still studying or they may resume studies after some time, and this means that their formal education is not completed. However, in questionnaires they state the highest level of education they have achieved so far.

A thorough analysis of the two main approaches has revealed that for the purpose of comparing the development of entry rate and graduation rate in tertiary education in various European countries over the last sixty years it is far more appropriate and also feasible to use the data derived from the analysis of various age cohorts as part of the European Social Survey (ESS). However, the difficulties mentioned above and some other problems result in a somewhat overrated level of educational attainment particularly in the earlier historical periods. Even so, the use of the cohort analysis could be confronted, in around half of the countries, with time series and, in this way, the size of the variation could be established. In doing so it has been confirmed that the difference between the results of the cohort analysis and the historical time series for younger age cohorts is gradually diminishing. Conversely, the level of educational attainment in the youngest age group is severely underrated and requires further revision.

All this must be taken into account when comparing the thresholds for transition between various stages of the development of systems of tertiary education according to Trow's typology on the one hand, and the data on the proportion of graduates in the given age cohort (graduation rate) according to ESS data on the other hand. The comparison of time series for some European countries and the corresponding data from the cohort analysis of the ESS database has revealed that, in view of the aforementioned reasons behind the overrated data from the cohort analysis, it is a 20% proportion of graduates in the corresponding age cohort in the ESS database that must be considered as the threshold for transition from the elite to the mass stage of the development of tertiary education. Moreover, 40% of graduates in the given age cohort can be seen as the threshold for transition from the mass to the universal stage. The data must be subject to a major revision for the youngest age cohort – for this purpose additional information must be obtained (a more detailed explanation of the revision is state in Chapter 2.3).

of graduates in the relevant age cohort European countries are, at present, gradually moving from the mass to the universal phase of tertiary education (the first ones are Ireland, Denmark, Spain and Norway); even the countries having a low graduation rate, as the Czech Republic or Germany, have already passed beyond the elite phase.

1.4 Expansion and inequalities

Since the 1990s research into inequalities in access to tertiary education has been focusing on three key questions that emerge in the process of studying the issue of expansion of tertiary education on the one hand and the issue of inequality in access to this education on the other hand. Does quantitative growth (i.e. a robust expansion of opportunities of studying at tertiary level) also lead to a more equal and fairer access to this education regardless of various advantages or disadvantages on the part of the applicant? Does it result in a genuine decrease in inequality? Moreover, the fact that expansion of tertiary education goes hand in hand with its diversification raises another question: What is the impact of internal diversification of the system on the development of inequalities—irrespective of whether the diversification consists in differences between various sectors of tertiary education, individual schools/institutions of tertiary education, levels (bachelor's, master's, PhD), or fields of studies, with different prestige and standards and, consequently, with a varying level of selectivity?

According to the theory of Maximally Maintained Inequality (Raftery and Hout 1993, Raftery 2007) the influence of family background does not decrease until the educational needs of the most favoured social groups are satisfied—i.e. until nearly all individuals within these groups achieve the relevant level of education (the term saturation point is used in this context). At this point inequalities began to decrease at the given level of education, but they increase at the next more advanced level, as the population applying for these studies becomes more heterogeneous. The MMI theory is consistent with some other conclusions and it is therefore often used as a working hypothesis in research into expansion and stratification of education. For example, the authors of an extensive comparative study of inequalities in access to education in twelve countries characterised this situation as persistent inequality (Shavit and Blossfeld 1993).

Expansion of tertiary education necessarily affects its functions and roles in society. The reason is that, at individual level, instead of serving as a lift to prestigious jobs and careers tertiary education becomes a necessary but far from sufficient precondition for reaching up to these jobs and careers. Expansion of tertiary education is accompanied by its inner diversification. New study opportunities emerge predominantly at the lower, less selective level that has been added to complement the higher level of traditional universities. Individual strategies therefore cannot aim at a mere acquisition of tertiary education, but rather at completion of elite and prestigious institutions, at acquisition of higher degrees, studies of preferred programmes etc. However, access to these continues to be limited. This means that inequalities in access have not been eliminated, but they have been merely shifted within diversified systems and have taken new forms—qualitative and structural instead of quantitative. The Effectively Maintained Inequality theory, for example, offers similar conclusions (Lucas 2001, Lucas and Beresford 2010).

The new situation continues to be non-transparent and, what is more, it varies significantly from country to country.[11] First, it is not clear what the roles of quantitative, qualitative and structural factors are in various countries. Answering this question would require extensive comparative analyses of the various factors and dimensions involved. However, comparative analyses are limited by a lack of relevant and up-to-date information (Clancy and Goastellec 2007). This is why some of the most recent comparative projects are designed as profound sociological qualitative studies that do compare a number of countries, but also focus on their overall situation and broader context, interpret their specific development and analyse national data sources without claiming rigorous comparability and relevance.

One of the most recent extensive comparative studies (Shavit, Arum and Gamoran 2007) that concerns inequalities in access to tertiary education in 15 countries has expanded on the existing knowledge of the effects of diversification and provided a new assessment of the whole process (particularly see Arum, Gamoran and Shavit, 2007).

Firstly, the study focuses on the relationship between expansion, differentiation and market structure of tertiary education and their impact on inequalities. Expansion is taking place in all countries and, under certain conditions, can lead to a decrease in inequality. At the same time, expansion is closely linked to differentiation, as diversified tertiary education systems increase the overall participation rate. For instance, systems with a larger involvement of the private sector expand more rapidly and they are more diversified. There are two contradicting trends within private institutions that have mutually restricting effects in terms of inequalities. They seek to attract prospective students and, at the same time, seek to achieve prestige.

Secondly, the study interprets the research results from two perspectives—diversion and inclusion. Some experts believe that expansion of tertiary education is only a way of diverting new candidates from elite institutions by offering them second-rate institutions. For others expansion means a clear benefit, because even lower-level tertiary institutions enhance the chances of acquiring more advanced education and the overall result is increased inclusion (in OECD 2007 interpretation as explained earlier, see 1.2). The outcomes of the study confirm that inclusion does occur. Although social selection remains the same (until the saturation point is achieved), there are more students of all classes (including those with disadvantages) continuing their education, and inequalities therefore decrease within the age cohort as a whole.

Thirdly, the study stresses that the above conclusions—i.e. that expansion supports inclusion although inequalities do not decrease—lead to a new interpretation of earlier research (Shavit and Blossfeld 1993). It was this research that produced the term persistent inequality, but failed to get to the very essence of the problem. Expansion at a certain level of education increases the level of heterogeneity of those who then move on to study at a higher level. This means, at the same time, that expansion facilitates access for a larger proportion of young people from all social strata, and the system should therefore be considered as more *inclusive* (see also Chapter 1.2). Although *relative* inequalities remain unchanged, *inclusion* leads to an *absolute* enlargement of access for a wide range of the population. And even though it is possible to see education predominantly as a position good, yet its expansion represents a benefit because it increases the human capital of individuals and of the entire society.

1.5 Latest development in Europe

The development of tertiary education in Europe during the last ten years has been mainly driven by the Bologna Process. It is closely connected with EU policies, although it goes well beyond its borders, comprising today forty-six countries. The three main objectives of this collective endeavour set in motion by the Bologna Declaration of June 1999 have been the introduction of the three cycle system of tertiary education, the focus on quality assurance, and the mutual recognition of periods of study and qualifications attained. After ten years of intensive reforms, the European Higher Education Area has been officially launched in 2010.

The past decade has seen a significant increase in participation rates across most European countries, in fact the virtual doubling of graduation rates from 18 % in 1995 to 36 % in 2007 (OECD 2009). The OECD Thematic Review of Tertiary Education (OECD 2008b, p. 19) explicitly states that expansion accompanied by differentiation of tertiary systems has lead to a change of the nature of inequities. The expansion has been accomplished mostly by expanding places in new, lower status institutions (leading to a stratification of the tertiary system by quality tiers), and by the creation of new subsystems, often more vocationally-oriented. The implication is that disadvantaged students may gain access predominantly to lower-status institutions. As a result, inequities in tertiary education become subtler and more difficult to analyse.

New priorities for the coming decades were formulated in the Leuven Communiqué 2009. Social dimension, equitable access and completion, is the first one on the list. Not mentioned explicitly in the Bologna Declaration, it has been an integral part of the Bologna Process since the first follow-up meeting in Prague in 2001. The London Communiqué (2007, paragraph 2.18) defined this objective as the "societal aspiration that the student body entering, participating in and completing higher education at all levels should reflect the diversity of our populations". Then again the Leuven Communiqué (2009, paragraph 9) pointed out the need to diversify the European student body by improving both access and retention: „access into higher education should be widened by fostering the potential of students from underrepresented groups and by providing adequate conditions for the completion of their studies." This is important, as equity policies have traditionally emphasised equity of access over equity of outcomes. "In most countries greater emphasis needs to be placed on equity of outcomes with policies more targeted at ensuring the success of students from underrepresented groups. This would translate into more emphasis being placed on student progression throughout studies with special support and follow-up measures to assist those students at risk of failure" (OECD 2008b, p. 66).

Equity policies aim at inclusion of all social groups, especially the underrepresented ones, in tertiary education. Although na-

[11] For instance, a recent Franco-German comparative study has come to the conclusion that there is no indication for substantial changes in the pattern of inequality in access to tertiary education in either country during the past two decades (Duru-Bellat, Kiefer and Reimer 2008).

tional definitions of under-represented societal groups vary from country to country, there are important points of convergence. "Across the Bologna countries, under-representation is most often linked to socio-economic background or parents' educational attainment, minority status or disability" (Eurydice 2010, p. 28).

Equity in tertiary education is affected by many inequities in preceding levels of education that have resulted in not attaining the educational level required to gain admission (poor performance, the quality of schooling received, or non-completion of secondary school), in lack of motivation, or in low family aspirations (see f.i. OECD 2008b, p. 13, or Eurydice 2010, p. 29). The EUA Trends 2010 Report explicitly states that "early streaming of students, based on their academic ability, seems to considerably reduce mobility across generations. ...If the primary and secondary school systems are highly selective, and do not have the proper remedial and support systems in place then it is almost impossible, in spite of free access, for non-traditional groups to reach the level of formal qualifications needed" (Sursock and Smidt 2010, p. 71). Highly segmented or tracked systems of secondary education "show a stronger relationship between family background and student achievement, because they allow inequalities in family circumstances to combine with peer and instructional inequalities to produce wider variation in secondary achievement and more unequal opportunities for entry into tertiary education" (OECD 2008b, p. 37). On the other hand, there is a correlation between inclusive primary and secondary school systems and widening participation in higher education.

Another challenge is the nature of the articulation with secondary education, as disadvantaged groups tend to enrol in larger proportions to vocational tracks. "This calls for particular attention to the links between non-academic tracks in upper secondary school and non-university sector provision in tertiary education. Institutional diversity within tertiary education is to be closely associated with curricular diversity in upper secondary school and with the recognition of tracks beyond the academic as valid for access to tertiary education" (OECD 2008b, p. 39).

Also relying exclusively on academic results raises equity concerns about entrance/selection procedures, as "merit at the time of entrance into tertiary education is not only the result of intellectual ability and study effort but also the consequence, for instance, of the access to good schools and stimulating teachers, the benefit of a supporting family or the affordability of private tutoring" (OECD 2008b, p. 53). In other words, it also reflects the socio-economic status of the family.

The EPC study analyses the change of inequality in access to tertiary education in European countries and differences between them. Although the study is inevitably limited by the data available, it can still contribute to understanding of two central problems: how the inequities have changed during the last sixty years, that is in the period of an unprecedented expansion of tertiary education, and what has been the relative weight of four main factors of socio-economic status—of the education and occupation of both parents.

2 Analysis of inequity

As comparative surveys focused on equity issues are rather scarce, relevant data gathered elsewhere have to be used in order to carry out a comparative analysis of the development of inequalities in access to tertiary education across Europe. Education Policy Centre have already demonstrated and also proved (see Koucký, Bartušek and Kovařovic 2009) that the *European Social Survey (ESS)* can serve such purpose as a suitable data source. Before using the ESS database it is necessary to carry out certain data and methodology modifications, shortly described and explained in this chapter. So far four rounds of this broadly focused research programme of the European Science Foundation—examining social structure and value orientation, monitoring attitudes, beliefs and behaviour patterns in current European societies—have been conducted in years 2002–2009.

Although the ESS is not primarily focused on education and educational inequalities, yet it contains questions which can be well utilised for analysing inequalities in approach to tertiary education and their social conditioning. It is necessary to stress the retrospective way of examining family background of the respondent at the age of fourteen years that is during the period key for shaping his/her educational path. However, the use of the ESS database limits the scope of the research only to those characteristics and variables already contained in it (i.e. the highest education level attained by the father and the mother or the occupation of both parents when the respondent was fourteen years of age). This is why the ESS database is very apt for more general comparative analysis, however for deeper and more detailed studies focused on individual countries it does not suffice and has to be supplemented with other relevant sources of information.

An analysis of the scope of inequalities in access to tertiary education and its development in various countries, an analysis of the effects of expansion of tertiary education on inequalities and further analyses and interpretations must be preceded by the development of a high quality analytical (data) and methodological basis. This consists, above all, in the development of appropriate indicators and an explained and justified model of inter-generational transfer of inequalities that corresponds to main theoretical and conceptual assumptions. Moreover, this concerns, for example, an analysis of the age structure of tertiary education graduates in various countries and a correct setting of the original variables in the ESS data sets. Despite several limitations and problems described below it is apparent that a database established by means of combining data from four initial rounds of the ESS survey is remarkably suitable for the purposes stated above not only in terms of its factual focus and the characteristics of the variables, but also in terms of its unique scope.

The first part of the chapter deals with data and variables analysed. It describes the overall ESS data set and explains how age cohorts representing historical periods examined have been defined. Further it focuses on ESS variables and their (re)coding necessary for subsequent analyses, explaining why so-called quartile characteristics were used instead of their original values. The second part of the chapter describes the model developed for analysing inequities in access to tertiary education, and defines the outcome—the Inequality index. The final part analyses values of Inequality index and their revision concerning the youngest age cohort post the year 2000. All data and methodological problems are explained by specific examples comparing always two of countries examined.

Country	Code	Number of respondents analysed in European Social Survey				
		ESS-1	ESS-2	ESS-3	ESS-4	ESS 1–4
Austria	AT	2 123	1 915	2 181	•	**6 219**
Belgium	BE	1 730	1 644	1 630	1 587	**6 591**
Czech Republic	CZ	1 289	2 781	5 279 *	1 877	**11 226**
Denmark	DK	1 359	1 317	1 353	1 464	**5 493**
Estonia	EE	•	1 769	1 356	1 499	**4 624**
Finland	FI	1 720	1 782	1 693	1 947	**7 142**
France	FR	1 385	1 689	1 867	1 926	**6 867**
Germany	DE	2 648	2 568	2 622	2 534	**10 372**
Greece	GR	2 375	2 251	•	2 013	**6 639**
Hungary	HU	1 484	1 352	1 436	1 395	**5 667**
Ireland	IE	1 890	2 104	1 669	•	**5 663**
Netherlands	NL	2 238	1 778	1 792	1 667	**7 475**
Norway	NO	1 851	1 591	1 550	1 379	**6 371**
Poland	PL	1 814	1 471	1 488	1 407	**6 180**
Portugal	PT	1 387	1 880	2 075	2 197	**7 539**
Romania	RO	•	•	1 898	1 963	**3 861**
Russian Fed.	RU	•	•	2 197	2 333	**4 530**
Slovak Republic	SK	•	1 291	1 545	1 711	**4 547**
Slovenia	SI	1 311	1 220	1 273	1 132	**4 936**
Spain	ES	1 606	1 481	1 720	2 380	**7 187**
Sweden	SE	1 742	1 705	1 705	1 642	**6 794**
Switzerland	CH	1 888	2 015	1 714	1 715	**7 332**
Turkey	TR	•	1 668	•	2 187	**3 855**
Ukraine	UA	•	1 884	1 868	1 729	**5 481**
United Kingdom	GB	1 951	1 662	2 262	2 219	**8 094**
Europe		33 791	40 818	44 173	41 903	**160 685**

*) The ESS-3 round in the Czech Republic was substituted with data from the special national survey.

2.1 Data and variables

Establishing an overall data set. At present[1] data from the first four rounds of ESS are available. The ESS-1 was conducted in 2002–2003 with 22 participating countries: Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland and the United Kingdom. The ESS-2 was conducted in 2004–2005 with 26 countries participating in it: without Israel, but Estonia, Iceland, the Slovak Republic, Turkey and Ukraine joined the survey. Compared to the ESS-2, Iceland, Italy, Luxembourg, Greece, Turkey and also the Czech Republic did not participate in the ESS-3; on the other hand, Bulgaria, Cyprus, Latvia, Romania and Russia joined it. So far the last round ESS-4 was conducted in 2008–2009 in 31 countries: that is all countries participating in the ESS-3 together with the Czech Republic, Greece, Israel and Turkey rejoining the survey, and with Croatia and Lithuania participating for the first time.

[1] The Czech text of this publication was completed at the beginning of 2010.

Since the Czech Republic did not participate in the third round of ESS, the data necessary for continuation of the analysis of inequalities in access to tertiary education in the Czech Republic were collected as part of a special national survey.[2] One of many objectives of the survey was to obtain in the Czech Republic data which would be fully comparable with those of the ESS-3. The entire set of questions was therefore taken over from the ESS questionnaire, and the Czech sample of 5 279 respondents became a fully-fledged part of the analyses carried out. Apart from this, some additional substantial data and methodological information were obtained during the Czech survey to be used in the following stages of project implementation.

Bulgaria, Cyprus, Iceland, Israel, Italy, Latvia, Luxembourg and both new entrants into the ESS-4, Croatia and Lithuania, were excluded from the comparative analyses due to an overly small sample. For the same reason all countries participating only in ESS-3 were excluded as well. Finally, also respondents which have not terminated their studies (i.e. still studying) and those with missing data on their family background or education attained were excluded. After excluding the countries and respondents mentioned above, the ESS data sets have the following size: the ESS-1 data set covers 33 791 respondents in 19 countries, the ESS-2 data set 40 818 respondents in 23 countries, the ESS-3 data set covers 44 173 respondents in 23 countries (including more than 5 thousand respondents in the complementary Czech national survey), and the ESS-4 data set 41 903 respondents in 23 countries (the data for Austria and Ireland will be available in autumn 2010[3]). In view of the ensuing analyses of several age cohorts in each country the data obtained in all four ESS rounds and in the complementary survey for the Czech Republic was brought together. This means that the overall data set covers altogether as many as 160 685 respondents in 25 countries. Each of the countries included participated in at least two ESS rounds, and a very great majority in at least three ESS rounds. All data have been weighted, for the ESS data the published design weights have been used.

Transposing age cohorts into historical periods. In view of the size of the overall data set (ESS 1–4), and the age span of the respondents, it was possible to form six age cohorts covering, approximately, people who finished tertiary education in a particular historical period, specifically in the course of one of the following six decades: 1950–1960, 1960–1970, 1970–1980, 1980–1990, 1990–2000, and 2000–2009. The approach employed by the Education Policy Centre is analogical to that one of other authors[4], however with some substantial methodological innovations making it more precise.

Country	Typical age of graduation *
Austria	25–29
Belgium	22–24
Czech Republic	23–26
Denmark	24–30
Estonia	23–27
Finland	25–32
France	22–24
Germany	25–29
Greece	23–26
Hungary	23–29
Ireland	21–24
Netherlands	22–26
Norway	23–30
Poland	24–27
Portugal	23–29
Romania	23–27
Russian Federation	23–27
Slovak Republic	23–27
Slovenia	25–29
Spain	23–26
Sweden	25–32
Switzerland	25–29
Turkey	22–25
Ukraine	23–27
United Kingdom	20–23

* (lower quartile – upper quartile)

First of all, they have addressed the fact that tertiary graduates are not of the same age across countries and over periods under examination. More precision may result in a significant change in outcomes. This is why an analysis of the age distribution of tertiary education graduates in individual countries and its development over recent decades has been required. In international terms it was possible to use data about graduates' age from the OECD database until 2009, and data from two international surveys concerned with higher education graduates: CHEERS of 1998/1999 (graduates in 1993–1994) and REFLEX of 2005/2006 (graduates in 2000–2002). When the available data from these sources were analysed, two major conclusions could be drawn: firstly, the age distribution of graduates in various countries varies to a large degree (differences in the average age of graduates may be 5–7 years); secondly, changes in the average age in various countries over time are distinctly smaller (a maximum of 1–3 years). It is therefore impossible to apply the same definition of age cohorts (and historical periods) to all countries—it is necessary to take account of the specific demographic characteristics of graduates in each individual country.

The process of assigning age cohorts to individual historical periods was carried out so that the decisive factors for defining the given cohort and its span were the interval between the value of the upper and lower quartiles of the graduate's age at the time of completion of tertiary studies and the middle value of this interval (the age interval thus defined comprises 50 % of all graduates). This means that in countries where students complete tertiary education at a higher age and, moreover, their age span is larger (this is characteristic particularly for all Scandinavian countries), the age cohorts representing the same historical period are defined by respondents born earlier. They are also broader and therefore overlap to a larger degree (i.e. a certain respondent is slightly more likely to be placed in two age cohorts at the same time). On the contrary, in countries such as Belgium, France or the United Kingdom the age cohorts are narrower and overlap to a lesser degree. The table shows the quartile span of the age cohort, which means that when graduating half of the graduates are aged as indicated.

If the definition of age cohorts clearly differs from country to country, the age distribution of graduates in individual countries does not change too much over time (but for some exceptions). This is why it has been possible to simplify the process and consider the definition of cohorts as stable for all six periods in each country. However, it must be noted that data about the age distribution of higher education graduates comparable between various countries are only available from the early 1990s—i.e. for approximately 15–20 years. Too little is known about possible changes in the age distribution of tertiary education graduates in most analysed European countries prior to 1990, so that they cannot be dealt with as part of the methodological process. Since the data relate to the cohorts (they are not historical), there may be a certain small overlap of respective historical periods due to a shift in the age cohorts of graduates.

Seen from this angle, particularly the reconstruction of the first decades that followed the WWII can be considered as slightly inaccurate. The war itself caused a certain shift of age cohorts of graduates, however not much is known about its total impact

[2] This survey was carried out at the turn of 2007–2008 by the Education Policy Centre at the Faculty of Education, Charles University in Prague, in co-operation with the MEDIAN agency.

[3] After their publication Education Policy Centre will prepare new updated profiles of both countries and put them on the web address *http://svp.pedf.cuni.cz*.

[4] The same approach has been followed many other authors, f.i. by Breen, Luijkx, Müller and Pollak (2005), Chevalier, Denny and McMahon (2009), or Underwood and de Broucker (1998).

in 25 European countries. Two other deformations can be considered as more significant. It is, first, the overlapping of cohorts as defined which even thus cannot cover all age groups of graduates in a given period (e.g. graduates of the 1950s include also some graduates of the 1960s, the latter again those of the 1970s etc.). Second, the very definition of the education level attained has changed frequently. For example, in some countries certain types of secondary or postsecondary vocational education have been transformed into tertiary education. Today, their graduates quite understandably may report that they have attained tertiary education, although it was classified at a lower (secondary or postsecondary, but not tertiary) level at the time of their studies. The approach can result in overvaluing numbers of graduates indicated particularly within historically oldest periods (1950s and 1960s). It is possible, however, neither to reduce them on the basis of ESS data, nor to reconstruct them historically with sufficient plausibility due to lack of background material available in individual countries.

Country	Respondents' sample					
	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Austria	646	1053	1497	2111	1964	958
Belgium	858	1163	1574	1742	1460	1017
Czech Republic	885	1390	2475	2461	2666	3637
Denmark	742	1446	1919	1878	1762	1047
Estonia	761	1051	1189	1253	1125	903
Finland	1054	1788	2467	2493	2227	1666
France	1021	1362	1660	1682	1674	867
Germany	1234	2351	2745	3367	2989	1572
Greece	1153	1433	1359	1671	1845	1078
Hungary	955	1472	1859	1732	1615	1261
Ireland	844	1296	1414	1480	1454	746
Netherlands	1165	1797	2140	2321	2094	930
Norway	807	1443	2111	2391	2345	1499
Poland	744	1003	1593	1768	1523	1403
Portugal	1754	2217	2064	2029	2136	1537
Romania	474	807	1049	978	1094	884
Russian Federation	676	955	1097	1191	1127	1044
Slovak Republic	484	853	1255	1283	1277	1062
Slovenia	692	1044	1306	1472	1368	997
Spain	1151	1276	1450	1880	2028	1385
Sweden	968	1636	2186	2245	2259	1681
Switzerland	1001	1558	1858	2101	2326	1367
Turkey	241	440	669	968	1275	1246
Ukraine	957	1332	1428	1390	1211	1099
United Kingdom	1407	1811	1834	2198	1936	980

Inaccuracies could also occur in the last period under review (2000–2009)[5], where a not negligible portion of the relevant age cohort consists of individuals who are still studying at higher education institutions—mainly students of longer study programmes. However, they are not considered as subject of the analysis although they will acquire tertiary education shortly. As the data for the last period could be partly affected by this fact, a correction was carried out that is described in more detail in Chapter 2.3. The outcome of this procedure and the definition of individual age cohorts can be found in the table below presenting sets of respondents who represent the relevant historical periods.

Defining variables and their coding. Having defined the analysed sets of data in all 25 European countries in six historical periods it is possible to proceed to defining and explaining the variables used in the analyses. The potential of the ESS (1–4) database is limited to a degree as regards the use of its variables to create appropriate indicators. The approach chosen therefore had to take these limitations into account. It should be stressed that the objective of the analyses is to develop a comprehensible model by means of which it would be possible to ascertain (measure) and interpret the level of inequality in access to tertiary education.

The explained variable in the model is therefore the attainment of tertiary education that is an outcome indicator. The explaining variables are characteristics of family (social-economic) background of the respondent that can be obtained from variables in the identical or comparable form in questionnaires of all four ESS rounds.

The coding of education attained has been rather complicated, due to differences between national classifications. The data concerning the respondent's education were compared with the latest OECD indicators[6] and with data of European and national labour force surveys. This was the basis for developing the following eight-level scale derived from the ISCED[7] international classification (UNESCO 1997): ISCED 0+1, ISCED 2, ISCED 3C, ISCED 3AB+4, ISCED 5B, ISCED 5A*short*, ISCED 5A*long*, and ISCED 6. It has been formed using data about the highest level of school education attained contained in ESS questionnaires (EDULVL[8]) but they alone would not have sufficed. In addition to the proportion of individuals in various ISCED categories in the relevant countries as stated in the OECD and ELFS (European Labour Force Survey) database it was necessary to use data about the length of education[9] contained in ESS questionnaires as another source of information. The reason is that it has turned out that the common variable of *respondent's education* created in the ESS data using converters for individual countries did not have sufficient characteristics of ISCED classification in many cases, and therefore cannot be fully applied without modifications.

A similar conclusion was drawn, for example, by the research team within the EQUALSOC international network led by Silke L. Schneider. They consider the very indicator of educational attainment by ISCED level in the ESS data to be relatively complicated and sum up three principal problems related to the common variable of *respondent's education* in ESS as follows: not adequate (insufficient) national classifications in some countries; misclassification resulting from a lack of knowledge about the ISCED-97

[5] The situation after the acquisition of the ESS-4 data is distinctly more favourable than it was when only the ESS 1–3 database was available (see Koucký, Bartušek and Kovařovic 2009).

[6] Table A1.1a. Educational attainment: adult population (OECD 2009).

[7] The International Standard Classification of Education ISCED is the main basis for comparing educational institutions and education levels attained. Its last version was prepared and approved by the UNESCO in 1997.

[8] The variable explaining the level of education attained by the respondent was created by recoding answers to the question F6 (EDULVL from ESS questionnaires) *"What is the highest level of education you have achieved?"* as specific categories of answers were used in different countries.

[9] Answers to the question F7 (EDUYRS from ESS questionnaires) *"How many years of full-time education have you completed?"* were used. In some cases they became a complementary piece of information for the design of the eight-degree scale of education.

Country	Highest level of education (ISCED) 0+1	2	3C	3AB+4	5B	5Ashort	5Along	6	Total
Austria	1.0 %	18.4 %	44.2 %	20.0 %	5.2 %	3.2 %	7.2 %	0.8 %	100 %
Belgium	8.4 %	17.5 %	11.6 %	27.0 %	19.0 %	5.3 %	10.1 %	1.1 %	100 %
Czech Republic	0.2 %	8.1 %	42.0 %	35.0 %	2.2 %	1.6 %	10.2 %	0.8 %	100 %
Denmark	0.7 %	13.3 %	35.1 %	6.1 %	13.2 %	20.2 %	10.3 %	1.0 %	100 %
Estonia	0.6 %	8.3 %	6.9 %	54.2 %	10.1 %	11.6 %	7.9 %	0.3 %	100 %
Finland	9.8 %	12.5 %	•	39.2 %	•	18.4 %	18.2 %	1.9 %	100 %
France	11.8 %	12.3 %	26.3 %	17.4 %	•	14.7 %	16.0 %	1.5 %	100 %
Germany	1.5 %	7.6 %	53.2 %	12.5 %	9.7 %	4.1 %	10.2 %	1.2 %	100 %
Greece	25.5 %	18.1 %	•	34.3 %	7.2 %	7.3 %	7.3 %	0.3 %	100 %
Hungary	2.5 %	20.1 %	30.0 %	29.8 %	•	10.4 %	6.7 %	0.6 %	100 %
Ireland	15.4 %	21.9 %	•	35.8 %	9.1 %	9.5 %	6.6 %	1.8 %	100 %
Netherlands	5.2 %	16.5 %	14.8 %	35.8 %	18.1 %	1.4 %	7.7 %	0.5 %	100 %
Norway	0.2 %	11.2 %	31.9 %	15.7 %	•	26.0 %	13.9 %	1.0 %	100 %
Poland	0.4 %	15.9 %	33.0 %	34.6 %	•	3.6 %	11.9 %	0.5 %	100 %
Portugal	56.2 %	15.8 %	•	15.5 %	1.7 %	3.2 %	7.0 %	0.6 %	100 %
Romania	5.0 %	20.6 %	20.7 %	30.7 %	7.3 %	6.4 %	7.2 %	2.1 %	100 %
Russian Federation	1.0 %	5.9 %	13.1 %	52.3 %	•	0.0 %	26.9 %	0.7 %	100 %
Slovak Republic	1.0 %	8.5 %	31.3 %	41.7 %	•	2.6 %	13.1 %	1.7 %	100 %
Slovenia	2.2 %	17.1 %	26.3 %	31.2 %	7.0 %	6.3 %	8.4 %	1.4 %	100 %
Spain	21.9 %	27.8 %	5.7 %	21.6 %	0.8 %	8.9 %	12.6 %	0.8 %	100 %
Sweden	5.6 %	14.0 %	17.4 %	31.5 %	8.1 %	9.3 %	12.1 %	2.0 %	100 %
Switzerland	2.6 %	7.9 %	46.1 %	18.7 %	9.7 %	3.3 %	9.0 %	2.5 %	100 %
Turkey	67.5 %	10.6 %	•	15.0 %	•	2.9 %	4.0 %	0.1 %	100 %
Ukraine	1.3 %	4.9 %	4.9 %	57.5 %	7.4 %	3.0 %	20.2 %	0.8 %	100 %
United Kingdom	•	20.3 %	24.9 %	22.4 %	•	19.1 %	11.8 %	1.5 %	100 %
Europe	8.9 %	14.0 %	22.9 %	28.4 %	5.5 %	8.1 %	11.0 %	1.1 %	100 %

in some countries; lack of detailed structuring at certain levels of education (Schneider 2007). In order to overcome all problems as indicated it has been necessary to exploit all information available in the ESS database, coding education not only by the international classification but by the national classification as well, and also indicating the total length of education of the respondent[10].

Obviously, the most difficult part of the process was the matching of various categories of all national classifications of education used in national versions of the ESS questionnaire (often different in subsequent ESS rounds) in various European countries with the ISCED[11] international standard and the eight-level scale employed. This laborious process was greatly inspired and supported by a doctoral thesis of Silke L. Schneider (Schneider 2009). The outcome, a comparable detailed classification of education attained, is shown in the table below, indicating the distribution of weighted numbers of all ESS 1–4 respondents aged 25–64 years by the eight categories of the newly created classification.

The explained variable ***Tertiary Education*** (acquisition of tertiary education) assumes two values in our analyses: 1 = respondent achieved tertiary education, 0 = respondent did not achieve tertiary education. It has been obtained from the newly developed eight-level variable expressing the highest level of education attained. It differentiates four categories of tertiary education: ISCED 5B (the completion of practically oriented programmes preparing for specific occupations, usually in the non-university sector), ISCED 5A*short* (mostly corresponding to the bachelor's degree), ISCED 5A*long* (mostly corresponding to the master's degree), and ISCED 6 (mostly corresponding to the completion of doctor's degree). This finer differentiation allows more structured analyses which could examine the effect of the expansion of tertiary education, its diversification to various sectors with different prestige and level of inequality, and subsequent inner stratification. Such a categorisation of tertiary education and its coding were naturally quite difficult, as their understanding differs a lot from one country to another. Regarding this situation the result can be only more or less successful at times.

A very important step was the selection of variables and hence of questions in the ESS questionnaire, which would best indicate (operationalise) family background of the respondent at the age which decides about his/her education career after compulsory schooling, i.e. about attaining or not attaining tertiary education. From this point of view the ESS database seems to be very apt as it contains data on education and occupation of both parents when the respondent was 14 years of age. Data concerning education and occupation of parents are often used in studies on the inter-generational transfer of inequalities, being a fitting indicator of family background characteristics both factually and empirically.

On the basis of some comments concerning the first version of the study of 2007 (see Koucký, Bartušek and Kovařovic 2007) the explaining variable of respondent's gender was taken out of the analyses. As a consequence of the fact that the predominance in attaining of higher education shifted almost universally in Europe from men towards women (and hence gender-related inequalities in access to education decreased), the original calculation showed that until the 1980s there was gradual alleviation of overall inequalities that could be partly due to the waning impact of respondent's gender, and on the contrary their strengthening approximately from the 1990s (as the proportion of women who completed tertiary education began to exceed the proportion of men, inequalities began to grow again, however this time in the opposite direction). This, however, does not bear any relevance as regards the inter-generational transfer of inequalities from parents to their offspring that is the subject of this study.

Before composing the model, the values for all four variables representing the respondent's family background at his/her 14 years of age had to be given fixed values so that they could be

[10] This approach in fact anticipates a recommendation *"attempt a maximal exploitation of all available information"* formulated regarding ESS education variables at the end of 2009 (see Schröder and Ganzeboom 2009).

[11] When comparing the ISCED with national classifications, a detailed OECD 1999 manual *"Classifying Educational Programs: Manual for ISCED-97 Implementation in OECD Countries"* as well as the Eurydice database and the 2010 publication „Focus on the Structure of Higher Education in Europe" were used.

The following four characteristics were used as explaining variables:

OccF—Father's occupation when the respondent was 14 years of age, in the first three ESS rounds (and also in the special Czech survey) with eight categories, and in the fourth ESS round with nine different categories (see the table below indicating ISEI values). The variable is based on answers to the question F50 from the ESS-1 main questionnaire, or to the question F54 from the ESS 2-4 main questionnaires *"Which of the descriptions on this card best describes the sort of work your father did when you were 14 years of age?"*.

OccM—Mother's occupation when the respondent was 14 years of age (with the same categorization of occupations as in the previous case). The variable is based on answers to the question F56 from the ESS-1 main questionnaire or the question F60 from the ESS 2-4 main questionnaires *"Which of the descriptions on this card best describes the sort of work your mother did when you were 14 years of age?"*.

EduF—Father's highest level of education with the following seven categories derived from the ISCED: 0 = Not completed primary education; 1 = Primary or first stage of basic; 2 = Lower secondary or the second stage of basic; 3 = Upper secondary; 4 = Postsecondary, non-tertiary; 5 = First stage of tertiary; 6 = Second stage of tertiary. The variable is based upon categories used in answers to the question F45 from the ESS-1 main questionnaire or the question F49 from the ESS 2–4 main questionnaires *"What is the highest level of education your father achieved?"*.

EduM—Mother's highest level of education education (with the same categorisation of education levels as in the previous case). The variable is based upon categories used in answers to the question F51 from the ESS-1 main questionnaire or the question F55 from the ESS 2–4 main questionnaires *"What is the highest level of education your mother achieved?"*.

measured and classified. In the case of the mother's and father's education they were assigned an average length of education according to data analysed from ESS and OECD database. As regards the mother's and father's occupation, the problem was more complicated. It was resolved by assigning a value derived from the International Socio-Economic Index of Occupational Status (ISEI) to each of the eight (nine as regards the fourth ESS round) occupational groups in ESS (Ganzeboom and Treiman 1996). Already the first 2007 version of the study applied the expert grouping of all occupational groups at the third level of the International Standard Classification of Occupations ISCO (ILO 1988)[12] into one of the eight groups of parents´ occupation as defined in the ESS 1–3. The result of this procedure was that each of the eight ESS occupational groups was assigned the calculated ISEI value.

Occupational group	ISEI
ESS 1–3 Parents' occupation	
Traditional professional occupations	70
Modern professional occupations	69
Clerical and intermediate occupations	54
Senior manager or administrators	65
Technical and craft occupations	28
Semi-routine/manual/ service occupations	23
Routine manual and service occupations	20
Middle or junior managers	48
ESS 4 Parents' occupation	
Professional and technical occupations	69
Higher administrator occupations	65
Clerical occupations	51
Sales occupations	42
Service occupations	38
Skilled worker	34
Semi-skilled worker	24
Unskilled worker	19
Farm worker	20

As the fourth round of the ESS used a different classification of parents´ occupation into nine categories, it has been necessary to repeat the expert grouping of all occupational groups at the third ISCO level, this time into the nine groups. Moreover, the ISEI values calculated for the ESS 1–3 for the original eight groups have slightly changed compared to the previous version of the study: weighted data have been analysed, the composition of countries has changed (Romania, Russia, and Turkey have joined the survey, Luxembourg has left) as well as the population of respondents (now limited to 65 years of age, and excluding those still studying or not having attained the educational level required).

The calculation of values corresponding to the ISEI was then verified by means of the Czech data set from 2007/2008 where the respondents were asked not only to classify their father's and mother's occupation in one of the eight groups, but also to provide the specific title of this occupation. The title was then recoded in line with the third level of the International Standard Classification of Occupations ISCO (ILO 1988) that already has ISEI values explicitly assigned. It has turned out that the outcomes of both independent approaches are very similar; both approaches have been thus mutually verified.

Calculating the value of quartiles. The next step was the ***calculation of the value of quartiles***[13] for all variables representing the respondent's family background. This is necessary in order to eliminate the frequent problem of an incorrect comparison. When analysing inequality, chances of acquiring education are usually compared for children of two groups of parents—those with the highest and the lowest qualifications (or with the highest and lowest social status). A methodological problem occurs, however, if the level of inequalities is expressed as a ratio of the chances of children of parents with tertiary education to those of children whose parents only have lower secondary education (or less). Various countries have namely different education structures (or one country at various historical periods), and various education levels are differently represented in the population; therefore the groups compared will be of different size, which would distort the result considerably. In order to achieve that both groups compared are of the same size, it is necessary to define them only loosely, more generally (e.g. as the "least educated" and the "best educated", and not by a specific level of education attained). This prerequisite allows for a correct comparison not only in terms of the development in a given country over time, but also a comparison between countries.

In order to determine the group size we chose quartiles, because a larger group size limits random influences (which could become apparent, for example, if deciles were compared). Based on the quartiles thus defined and calculated, the values of the four variables (relating to education and occupation of both parents) in all countries were divided into four groups of the same size. All analyses which follow always compare groups defined in this way.

[12] The International Standard Classification of Occupation ISCO is a basic, internationally used instrument for comparing systems of occupations. Although at the end of 2008 the ILO approved the new ISCO 2008 version last year, all four ESS rounds use the ISCO 1988 version with about 120 occupational groups at the third level.

[13] Quartiles are three values of a given variable which divide a series of values of this variable, sequenced upwards or downwards, into four parts of the same size. It means that they establish, in a set of data, quarters with the same representation of the variable sequenced in this way.

*The following **example comparing the situation in Germany and in Ireland** illustrates why this approach is appropriate, and what distortions have been evaded:*

When, for example, children's chances of achieving tertiary education based on the father's educational attainment are compared in Germany and Ireland, and when the usual education categories are used (primary, secondary and tertiary), a significant mistake occurs, since the distribution of these categories of educational attainment differs considerably in these two countries. In the table below the education of fathers is indicated (1 = primary; 2 = secondary; 3 = tertiary), further the number of respondents whose fathers had this education, the percentage of these respondents, and respondents who achieved tertiary education. The table clearly shows that, if the chances of children of fathers with primary education in Germany and Ireland are compared, the chances of only 12 % of German children are compared with the chances of 79 % of children in Ireland. If the ratio of the chances of children of fathers with tertiary education to those of fathers with primary education is calculated, we are considering 34 % (12 %+22 %) children in Germany as compared to 85 % (79 % + 6 %) of children in Ireland. This considerably distorts the results.

	Germany 1950–2009			Ireland 1950–2009		
EduF	Respondents	%	% Tertiary	Respondents	%	% Tertiary
1	1 117	12 %	10.7 %	4 023	79 %	17.1 %
2	6 237	66 %	18.9 %	762	15 %	47.4 %
3	2 039	22 %	45.1 %	309	6 %	70.6 %
Total	9 393	100 %	23.6 %	5 094	100 %	24.8 %

To eliminate the distortion is possible if we work with quartiles of variables as illustrated in the table below. All values of the variable have been divided into four large groups of the same size (quartiles) which can be compared without problems. In this way, of course, we do not compare the chances of children whose fathers have tertiary education with the chances of children of fathers with primary education, but the chances of children of a quarter of the best-educated fathers in a given country with a quarter of the fathers with the lowest qualifications in the given country. For both countries, the table indicates the percentage of respondents, who attained tertiary education by respective groups defined by father's education.

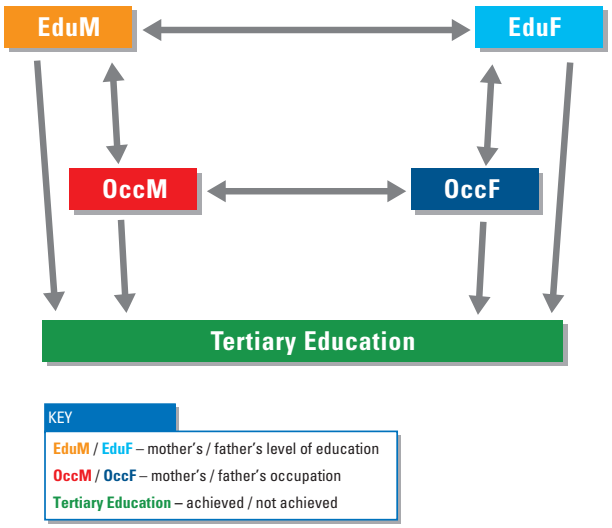
	Germany 1950–2009			Ireland 1950–2009		
EduF	Respondents	%	% Tertiary	Respondents	%	% Tertiary
Q1	2 348	25 %	16.1 %	1 273	25 %	12.3 %
Q2	2 348	25 %	17.8 %	1 274	25 %	14.8 %
Q3	2 349	25 %	17.2 %	1 274	25 %	21.8 %
Q4	2 348	25 %	43.4 %	1 273	25 %	50.4 %
Total	9 393	100 %	23.6 %	5 094	100 %	24.8 %

*If we worked with the usual categories of the variable, it is possible to wrongly believe that the ratio of the chances of children with the best-educated fathers to those of children with the least-educated fathers are more or less at the same level in Germany(45.1 / 10.7 = **4.2**) and in Ireland (70.6 / 17.1 = **4.1**). When working with the quartiles we can see that the inequalities in terms of the father's educational attainment are far less similar in both countries (Germany: 43.4 / 16.1 = **2.7**; Ireland: 50.4 / 12.3 = **4.1**).*

2.2 Conceptual model and Inequality index

The conceptual model used for the analysis of inequality in access to tertiary education in Europe over the last decades can be described and interpreted as a logistic regression model with one binary explained variable expressing whether or not a respondent achieved tertiary education ***(Tertiary Education)***. Four family background indicators *(i.e. ascriptive factors)* were chosen as the explaining variables from among the possibilities offered by the ESS data: the highest level of education achieved by the father ***(EduF)***, the highest level of education achieved by the mother ***(EduM)***, the occupation of the father of the respondent at the age of 14 ***(OccF)***, and the mother's occupation when the respondent was 14 years of age ***(OccM)***. In this form the model was repeatedly used not only to analyse data for the whole Europe and for individual countries, but also to analyse six designated age cohorts of respondents in all the 25 European countries.

Analysis of inequality
Conceptual model



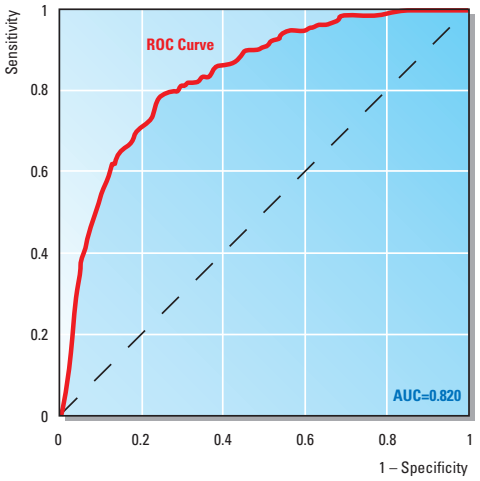
As the explained variable (acquisition of tertiary education) is binary (assumes only two values), and the explaining variables are categorised (according to quartiles), ***the logistic regression model*** was chosen. If we apply the model we get values of parameters expressing odds ratios of tertiary education attainment for groups with different socio-economic background. The final indicators express the odds ratios of attaining tertiary education between the top and bottom quarters of the most and the least disadvantaged children by the characteristics of family background.

When working with the logistic model it is very difficult to express its overall quality, as it is not possible to create a direct equivalent of the R^2 determination coefficient used in linear regression. This is why the so-called ***ROC curve*** *(Receiver Operating Characteristics)* was applied (see the graphs in the example below). It establishes the dependence of the proportion of correctly predicted cases when the respondent achieved tertiary education (the vertical line, so-called *sensitivity* or *true positive rate*) on the percentage of incorrectly predicted cases when the respondent did not attain tertiary education (the horizontal line, so-called *1-specificity* or *false positive rate*). The size of ***AUC***

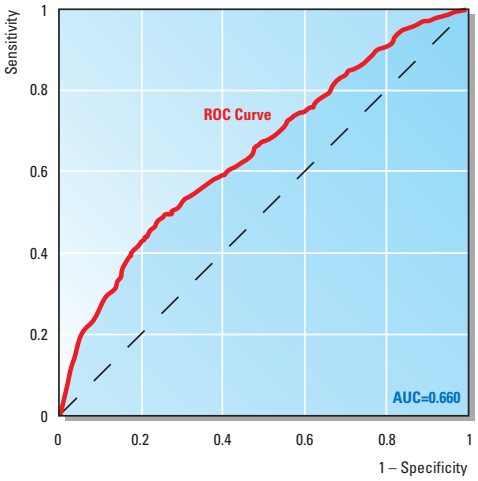
(Area Under the Curve) is considered to provide a comprehensive expression of the quality of the model. The larger the area AUC between the diagonal and the ROC curve, the better the model predicts the behaviour.

Thanks to ***AUC*** it was possible to assess, in individual countries, the intensity of the influence of all four ascriptive factors on acquisition of tertiary education and, in this way, actually to determine the level of inequalities in access to tertiary education. The higher the level of the ***AUC*** indicator, the more dependent the acquisition of tertiary education on the variables which characterise the education and occupation of parents, i.e. on ascriptive factors (which cannot be influenced individually and do not depend on individual abilities, motivation and performance), and also the higher the inequality in access to tertiary education. The AUC indicator assumes values within the <0 ; 1> interval. The final indicator describing the level of inequalities in access to tertiary education—the ***Inequality index (I_I)*** has been constructed as a well-known and often used measure of inequality, the ***Gini inequality index***. The Inequality index is defined by the relation

Hungary 2000–2009
ROC Curve and AUC



Finland 2000–2009
ROC Curve and AUC



$$I_I \text{ (Inequality index)} = (2AUC - 1) \times 100 = \text{Gini Index}$$

The Inequality index (I_I) developed—corresponding to the Gini index—therefore assumes values on a 0–100 scale where higher index levels mean higher levels of inequality and vice versa (perfect equality in access to tertiary education is represented by the value 0, perfect inequality by the value 100).[14]

The interpretation of the Inequality index is illustrated by the following comparison of ***Hungary and Finland:***

In Hungary, for example, the influence of ascriptive factors on acquisition of tertiary education has been very strong in period 2000–2009. Evidence of this is the AUC value (0.820) which says that the likelihood of a correct identification of whether or not a randomly selected individual (the likely age cohort that completed tertiary education in Hungary in 2000–2009 is characterised by those born in 1971–1986) achieved tertiary education solely on the basis on the knowledge of ascriptive factors (i.e. the education and occupation of his/her parents and the respondent's gender), is 82 %. In other words, in Hungary this model makes it possible to identify correctly in 82 % of cases whether an individual achieved or did not achieve tertiary education, only based on the knowledge of the four aforementioned characteristics of his/her family.

On the contrary, Finland in the same period shows a much weaker influence of ascriptive factors on acquisition of tertiary education, as the same model facilitates a correct identification only in 66 % of respondents. This means that, based on the knowledge of parents' education and occupation, in Finland the likelihood of correct identification of whether or not a person (The likely age cohort that completed tertiary education in Finland in 2000–2009 is characterised by those born in 1968–1984) achieved tertiary education is only 66 %, which means that influences other than parents' education and occupation play a far more important role.[15]

On the basis of the AUC value the Inequality index for access to education for both countries in 2000–2000 is defined according to the aforementioned formula as follows:

$$I_I \text{ (Hungary)} = (2 \times 0.820 - 1) \times 100 = 64$$
$$I_I \text{ (Finland)} = (2 \times 0.660 - 1) \times 100 = 32$$

2.3 Correction of the 2000–2009 period

When interpreting data on the development of the graduation rate, it was stated in the first chapter and at the beginning of this chapter that both the graduation rate and the Inequality index of access to tertiary education for the youngest age cohort in the last period under review (2000–2009) should be subject to further analysis. The reason is that their levels may be influenced by the fact that, during the survey, a number of students in the given cohort were still studying (students of long programmes at tertiary institutions in particular). Therefore they will complete their studies at a higher age and are not yet considered as tertiary education graduates for the purpose of the analysis.

This, of course, has a significant impact on the graduation rate, as the number of graduates in the youngest age cohort can, understandably, score a major increase in the years following the ESS survey (where these respondents—tertiary education students—stated they had completed secondary education). It must be reiterated that, naturally, only first degrees and other tertiary qualifications are calculated in the graduation rate, which ensures that each graduate is counted only once.

The graduation rate for the individual historical periods between 1950 and 1990 was ascertained as a proportion of tertiary education graduates in the total number of respondents in the

[14] According to many authoritative sources "…the Gini index is the best measure of inequality", for example OECD (2008a) or The Economist (2009).

[15] Greater attention and further research is without any doubt deserved by a close correspondence between the above Hungarian and Finnish outcomes and the outcomes of analyses of inequalities in educational performance of 15-year pupils carried out by PISA 2006 (OECD 2007).

defined age cohort that corresponds with the given historical period. This approach may be considered as appropriate for the 1950–1990 period, although it may produce certain distortions mentioned in Chapter 2.1. It is possible that, in the following years, there will be a certain increase in the proportion of graduates in the age group corresponding to the 1990–2000 period. However, these changes will not be very significant.

Far more striking changes in the graduation rate will surely occur in the youngest age group that corresponds to the 2000–2009 period. This is suggested, among other things, by the graduation rate indicator derived directly from the ESS data. For the 1990–2000 period the average indicator for the entire Europe is 29.8 %, whereas it is only 27.4 % for the 2000–2009 period. This would indicate a decrease in the graduation rate, which does not appear to be the reality. It was therefore necessary to propose a way of revising the graduation rate indicator.

The solution that has turned out to be the most viable and, at the same time, sufficiently acceptable consisted in the use of time series of the graduation rate indicator from the OECD database. The indicators of graduation rate from the mid-1990s were used together with the same indicators from the middle of the current decade. Based on their comparison a growth index for the past ten years was established. This index was then assigned to the previous findings concerning the graduation rate in the period from 1950 to 2000. Unfortunately, this approach could not be applied to eight countries that either are not OECD member states or the necessary data for them are not available in the OECD database.

A problem similar to the one of ascertaining the graduation rate is to be addressed also in the case of calculating the Inequality index for the youngest age cohort for the period 2000–2009. Studies of various countries have revealed that the composition of graduates in various sectors shows various levels of inequality, and that long university studies are attended by students with the highest family status. This is why it was necessary to make an estimate of the development of inequalities when the entire age cohort will have completed their studies—i.e. an estimate that would include the existing students of long programmes. The correction of the Inequality index for the youngest age cohort is more difficult than in the previous case of the graduation rate, and deserves more attention.[16]

The initial step along the path leading to a more profound and accurate analysis of the level of inequalities in the final period consisted in dividing the systems of tertiary education into main sectors according to the length of studies and the level of qualification achieved. The choice of these sectors was based not only on an analysis of the similarities and differences in tertiary education systems in various countries, but also on the potential of the ESS data set. The basic sectors of tertiary education used in the analysis below are ISCED 5B, ISCED 5A*short*, ISCED 5A*long* and ISCED 6 (as defined in the Chapter 2.1)

As expected, it was not possible to identify all four sectors of tertiary education in all countries. This was either because such classification was non-existent or not feasible in the given country, or because national classification of qualifications in the ESS data set was insufficiently detailed or even entirely missing. Still, at least three sectors of tertiary education were identified in each of the 25 countries analysed. The result of the analysis is that in 16 countries graduates in each of the four main sectors of tertiary education are identified. The sector ISCED 5B could not be identified in Finland, France, Hungary, Norway, Poland, Russia, the Slovak Republic, Turkey, and the United Kingdom.

The structure of these sectors of tertiary education naturally varies from country to country, and it also develops over time. While, for example, in the Czech Republic, Poland, Portugal, Russia, the Slovak Republic, and Ukraine graduates of ISCED 5Along) predominate, in Denmark, Hungary, Norway, and the United Kingdom this is true of graduates of the sector ISCED 5Ashort. In Belgium, Germany, the Netherlands, and Switzerland there is a predominating number of graduates of the sector ISCED 5B.

Based on sectors thus defined it was possible to identify the extent to which various levels of inequality in the individual sectors could influence the drop in the overall Inequality index level in the final period under examination (2000–2009). It turned out that in the very countries that showed the most obvious decrease in inequality in the most recent period there were low inequality levels in both short programmes (ISCED 5B + ISCED 5A*short*) and, conversely, inequality was high in ISCED 5A*long* and ISCED 6 programmes. In terms of the European average and also in most countries—with some exceptions as Belgium mentioned in the example below—this confirms the basic proposition: the longer the study programme and the more advanced the level of tertiary education, the higher the level of inequality in access to it.

The purpose of the correction of the index demonstrating the level of inequality in access to tertiary education in the youngest age cohort is to provide more accurate data on inequality. The index is therefore further presented in this revised form. The correction is based on data about the structure of graduates in respective sectors of tertiary education in the last but one period under examination (1990–2000) that are compared with the data for the most recent period (2000–2009). Moreover, it is based on partial Inequality indexes that express the level of inequality in the given sector of tertiary education. The overall corrected Inequality index for 2000–2009 then represents a weighed average of partial (sector) Inequality indexes in each country, while the data on the modified structure of graduates of tertiary education in 1990–2009 are used as weights.

The varying structure of graduates in all four sectors of tertiary education and the different levels of partial Inequality indexes including their influence on the overall Inequality index can be illustrated by the following ***example of the Czech Republic and Belgium****.*

In the Czech Republic and Belgium, all four sectors of tertiary education could be identified—i.e. ISCED 5B, ISCED 5Ashort, ISCED 5Along, and also ISCED 6. In the Czech Republic tertiary education graduates account for over 25 % of the youngest age group under examination, and in Belgium even for over 50 %. While in Belgium more than half of these are graduates of ISCED 5B programmes, in the Czech Republic the distribution of graduates differs. Graduates of ISCED 5B programmes only account for about a fifth of all tertiary degree holders, even less than a fifth of the total number are graduates of ISCED 5Ashort programmes, and graduates of ISCED 5Along programmes predominate. However, it is clear that if there are differences in the level of inequality in access to tertiary education within various sectors, then there is no doubt that changes in the proportion of graduates in respective sectors have a significant impact on the overall level of inequality.

[16] The analysis and the following correction of inequality indexes represent, among from other things, a response to a comment on the draft version of the first 2007 study made by professor Yossi Shavit from Tel Aviv University, where he warned about the danger of distortion in the results for the final period.

Czech Republic				
Tertiary education programmes	Average years of full time education	% of graduates in population	Inequality index (1990–2000)	Inequality index (2000–2009)
ISCED 5B	14.9	5.7 %	39	23
ISCED 5A short	15.9	4.9 %	32	31
ISCED 5A long	17.1	15.1 %	54	50
ISCED 6	18.6	0.8 %	68	60
Total	16.7	26.5 %	52	41 / 44

Belgium				
Tertiary education programmes	Average years of full time education	% of graduates in population	Inequality index (1990–2000)	Inequality index (2000–2009)
ISCED 5B	15.1	32.9 %	45	41
ISCED 5A short	16.1	8.0 %	58	59
ISCED 5A long	17.2	12.1 %	53	49
ISCED 6	18.8	1.5 %	42	45
Total	15.9	54.5 %	54	51 / 51

The tables clearly illustrate that at present both the Czech Republic and Belgium show the lowest level of inequality in access to tertiary education in the sector of non-university ISCED 5B programmes. This is demonstrated by the levels of Inequality index in the period 2000–2009.In the Czech Republic there is a higher level of inequality in access to ISCED 5Ashort and 5Along programmes and by far the highest level of inequality can be seen in access to doctoral ISCED 6 programmes. On the other hand, in Belgium the highest inequalities are in access to ISCED 5Ashort programmes. The level of inequality in access to respective types of tertiary education in both countries does not in itself provide relevant information as to the overall level of inequality, since the overall level is also influenced by the aforementioned distribution of graduates in the respective sectors of tertiary education.

At present, the lower overall level of inequality in access to tertiary education in the Czech Republic is the result, among other things, of the fact that 40 % of all tertiary education graduates completed ISCED 5B and ISCED 5Ashort programmes where the level of inequality is markedly the lowest both in the Czech Republic and compared to Belgium. Moreover, inequalities in access to these programmes in the Czech Republic have even decreased between 1999–2000 and 2000–2009, and as inequalities in the remaining sectors of tertiary education have decreased as well, also the overall level of inequality has fallen. In Belgium inequalities are lowest at level of ISCED 5B programmes, being still considerably higher than in the Czech Republic, which has caused an overall higher level of inequality in access to tertiary education.The overall higher level of inequality in Belgium in the last period under review has been even more confirmed because, unlike the Czech Republic, in the years 1990–2000 and 2000–2009 inequalities in some sectors of tertiary education have continued to increase.

The last line of the last column in the preceding tables above for the Czech Republic and Belgium always contains two values of Inequality index for the period 2000–2009. The first is the level of Inequality index before the correction, whereas the second figure is the level after the correction. The effects of the different development in the level of sector inequalities and the influence of graduate distribution by sector have caused that while in Belgium the overall Inequality index has not changed after the correction, in the Czech Republic it has increased. The example of the two countries therefore demonstrates why in some countries (apart from Belgium for example also in Estonia, Finland, Switzerland or the United Kingdom) the correction of the Inequality index for the final period under examination confirmed its value, while it changed (increased) it markedly in other countries. In specific terms it means that in Belgium inequalities should not change too much after the last age cohort complete their studies, while in the Czech Republic the level of inequality can be expected to rise slightly.

As a result of correction of the Inequality index in the youngest age cohort there was a slight increase in its original values, and consequently a minor increase in the level of inequality in access to tertiary education in most participating countries and also in Europe as a whole in the period after 2000. The Inequality index increased most in the Czech Republic, France, the Slovak Republic, Slovenia, and Ukraine. In three countries (Austria, Germany and Sweden) the correction resulted in a decrease of the original index value. However, in all cases the change was only minute and it did not lead to a major decrease in the index level. Nor in any other country did the correction constitute a substantial change in the original level of the Inequality index. This means, however, that any other possible change in the structure of tertiary studies is not likely to result in a significant shift in the overall development of inequalities.

A summary of the evidence obtained by means of the analysis and the ensuing correction of the Inequality index for the youngest graduates of tertiary education in various countries revealed that this correction is relevant and that its inclusion into the methodology of measuring the Inequality index is justified, since it somewhat alters the overall Inequality index at least for some countries. However, the differences between the corrected and uncorrected indexes are not so significant as to change Europe-wide trends in the development of inequalities in a major way. Nor are they of such a nature as to change the position of various countries in terms of the overall level of Inequality index in access to tertiary education.

3 Results of the study

This chapter comes after an outline of theoretical concepts in Chapter 1, and explanation of empirical sources and methodology in Chapter 2. It presents the main results and conclusions of the analysis of inequality in access to tertiary education over the last almost sixty years. It explains and interprets the results of the analysis of the levels of inequality in all 25 European countries in 1950–2009, as well as the results of some other related analyses.

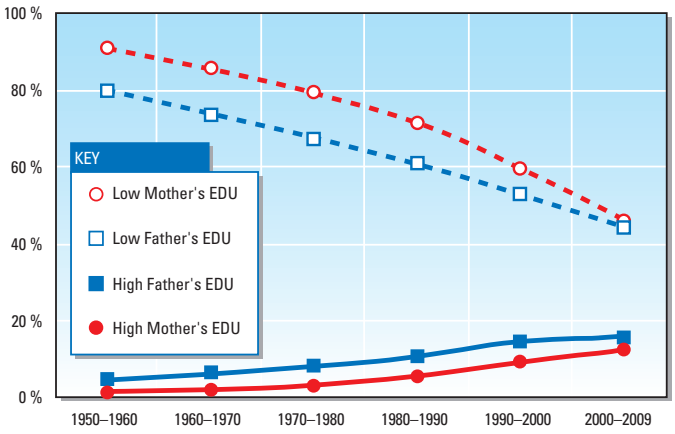
The first part of this chapter tracks the development of the family background structure for various generations of young people and describes the changes in their parents' composition and social status in terms of education and occupation. The second part assesses the overall level of inequality in access to tertiary education according to the level of Inequality index (explained in Chapter 2). It describes the development of inequalities in Europe as a whole as well as in various countries, and, on the basis of this, defines three relatively homogeneous groups of countries and interprets their development. The third part provides an analysis of the influence of various family background factors and monitors their changes over time. The fourth, final part of the third chapter analyses the basic levels of quantitative development of tertiary education and the impact of expansion of tertiary education on inequalities in access to it.

3.1 Changing family background and participation in education

Before analysing the development of inequalities in access to tertiary education it is necessary to pay attention to the development of the family background structure in various generations of young people in Europe. More specifically, we should focus on changes in the composition and social status of their parents in terms of education and occupation that have taken place since the 1950s. The expansion of tertiary education—i.e. the increase in the proportion of graduates in the relevant age cohort—does not necessarily mean by itself that tertiary education is opening up to social strata with a lower status and that there is a decrease in inequalities in access to it. This expansion can be a consequence of the fact that there is an increasing proportion of families with a higher status (a higher level of educational and occupational attainment) that naturally seek to ensure that their children also acquire more advanced qualifications. It is therefore necessary to examine what part of the growing number of graduates come from families with a higher status and thus demonstrate inter-generational transmission of tertiary education, and what proportion come from families with a lower social status where—on the contrary—tertiary education does not have any tradition. In other words, we should examine the extent to which there is a genuine expansion of access to tertiary education.

Family background: education and occupation of parents. Over the last sixty years Europe has witnessed substantial changes in the level of educational attainment of the generations of parents. Although there are relatively large differences between countries that are influenced by both the overall level of development and specific national schooling traditions, Europe as a whole shows a growing level of educational attainment. This concerns both parents. The proportion of fathers as well as mothers with a lower level of education[1] has been falling steeply (over the last sixty years the European average figures decreased by over a half from some 80 % to roughly 40 %), while the proportion of families where both parents have a higher level of education is increasing. At present approximately 16 % of fathers and 12 % of mothers have tertiary qualifications (compared to 5 % and 1 % in 1950–1960 respectively). In view of the constant growth in the proportion of new graduates in the relevant age cohorts it is clear that these trends will continue in Europe in the future.

Educational attainment of parents
Europe 1950–2009

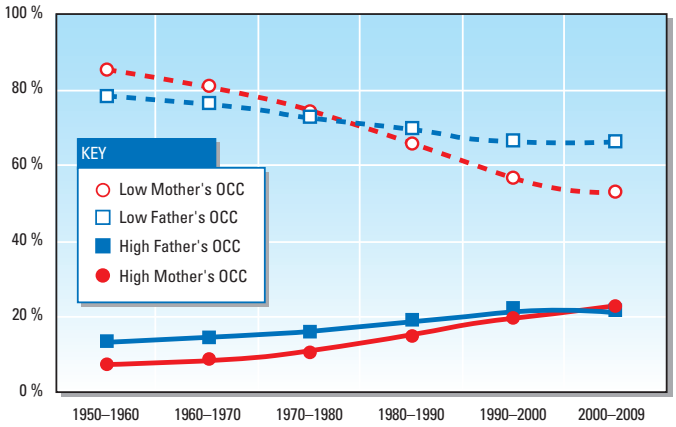


However, there are certain differences in the level and pace of growth in fathers' and mothers' qualifications that reflect long-term trends in most European countries. The decrease in the proportion of mothers with lower education has been faster than that of fathers in recent periods, whereas the proportion of mothers with higher education has been growing more rapidly compared to that of fathers. As a result of this the level of parents' educational attainment in European average terms has nearly evened out, and in some countries the current generation of mothers have even higher qualifications than those held by fathers. Moreover, the predominance of females compared to males in the new generation of tertiary education students, which has not been an exception in many European countries for many years already, has been strengthening for a long time. This is why, in the upcoming years, the proportion of mothers with tertiary education is expected to exceed the proportion of fathers with these qualifications, and this difference will widen further.

Similar trends can be observed in the development of parents' occupational structure. However, there are some clear differences as compared to education. The first difference is that the pace of changes in the occupational structure is much slower than the pace of changes in educational attainment. In order to provide a

[1] The *lower level of education* category comprises no qualifications and primary and lower secondary levels (ISCED 0–2); the *middle level of education* category covers short and long forms of upper secondary education or post-secondary education below the level of tertiary education (ISCED 3–4); the *higher level of education* category covers tertiary qualifications (ISCED 5–6).

Occupation of parents
Europe 1950–2009



clear interpretation of the results of the analysis, also parents' occupations in all European countries over all periods under review have been divided—similar to education—into three groups according to the average level of the International Socio-Economic Index of Occupational Status (ISEI)[2]. After WWII, roughly 80 % of parents performed occupations with a lower status and 10 % of parents had jobs with a higher status. Fathers formed a great majority of employed individuals, as a large number of mothers of children 14 years old were not economically active.

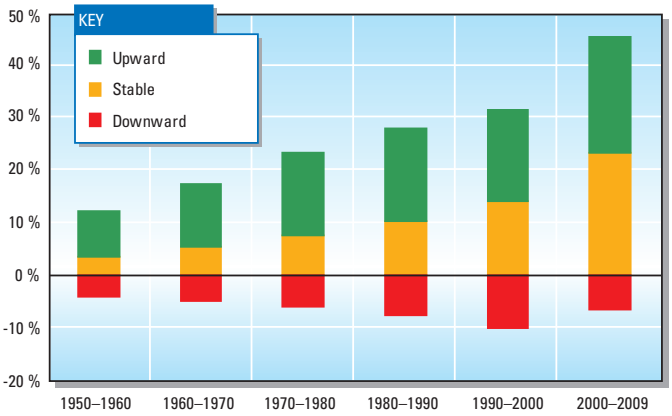
Although the occupational structure markedly changed over the last sixty years, there are still nearly 60 % of parents who, in the most recent period, have performed occupations with a lower status, while the proportion of parents in jobs with a higher status has increased to 21 %. There is now a much higher proportion of mothers among the employed as they have been entering the labour market in large numbers. Although there continues to be a close link between the levels of education and occupation in Europe (both highly correlate), the slower changes in the development of occupational structures as compared to educational structures over the last sixty years have entailed an increasing proportion of people with higher qualifications performing jobs with a lower status.

The second substantial difference is that while in the 1950s it was mainly mothers who performed occupations with a lower status, the situation was gradually evening out and, since the 1980s, it has even reversed. This means that, at present, approximately 66 % of fathers perform occupations with a lower status as compared to 53 % of mothers. Along with the decreasing proportion of parents with a lower occupational status there has been an increasing proportion of parents with a higher occupational status. This process was faster in the case of mothers. Over the last sixty years the proportion of mothers with a higher occupational status increased from 7 % to 22 % that is more than three times, while with fathers the increase was only from 13 % to 21 %. This confirms that, in recent years, the economic position of employed mothers has at least equalled that of fathers in European average terms. While the increasing level of educational attainment of the population tends to be the result of the overall growth, this is not the case of the development of the occupational status of men and women. A major driving force behind this development has been not only the increasing presence of women in the labour market in general, but also, and most importantly, their penetration into new occupations with a medium or higher status.

Parents and Children: The education lift moves in both directions. As explained in Chapter 1, tertiary education has become an important factor affecting career and position in modern societies, and trying to attain it has become one of main strategies of intergeneration status transmission. It is also important to find, how most young people attain it, and how it is transmitted from one generation to another. Graduates of yesterday become parents of today again trying hard that their children attain at least the same level of education tomorrow. The previous growth of tertiary education affects its future development.

The expansion of tertiary education started in many European countries about fifty years ago. As a result, the proportion of young people with tertiary education has been constantly and significantly increasing in every respective age cohort each decade, for example from 12 % in the 1950s twice to 22 % in the 1970s. In families where at least one of the parents had attained tertiary education, it was mostly reproduced in the next generation (intergeneration stability of attaining tertiary education—i.e. the fact that the child attained tertiary education as at least one of his/her parents did—was greater than downward mobility). At the same time, however, the expansion of tertiary education

Intergeneration mobility
Europe 1950–2009



allowed that a majority of new students came from families without this tradition (upward mobility).

Due to the dynamic development of tertiary education, the proportion of graduates among parents of children choosing their educational career has been ever increasing. Moreover, also the expansion of tertiary education has reached its natural limits (which substantially increased during the last sixty years). Although the European average graduation rate increased up to 30 % in the 1990s, its pace substantially slowed down compared to that of the generation of their parents. As a result of two opposing pressures, striving for maintaining tertiary education (i.e. for the stability) and striving for attaining it (i.e. for the upward mobility), the proportion of families where children of gradu-

[2] The category of *occupations with a lower status* and a lower level of skills intensity includes in ESS 1–3: technical occupations and crafts, semi-routine manual and service occupations and routine manual and service occupations; in ESS-4: semiskilled worker, unskilled worker, and farm worker. The middle category comprises in ESS 1–3: clerical and intermediary occupations and middle and junior management; in ESS-4: sales occupations, service occupations and skilled worker. Skills-intensive *occupations with a higher status* include in ESS 1–3: traditional occupations, modern occupations, senior management and administration; in ESS-4: professional and technical occupations, higher administrative occupations and clerical occupations.

ate parents were not able to attain tertiary education increased, while the proportion of families where the children entered tertiary education for the first time decreased.

After 2000 the situation has changed again. Particularly countries with a low proportion of graduates (Austria, Portugal, and Turkey) and new EU member countries (the Czech Republic, Hungary, Poland, Romania, the Slovak Republic and Slovenia) have experienced a steep increase in the graduation rate. Its average value in Europe has risen up to 42 %. This significant expansion reversed previous trends: the downward mobility has considerably sunk while both the stability and the upward mobility have risen a lot.

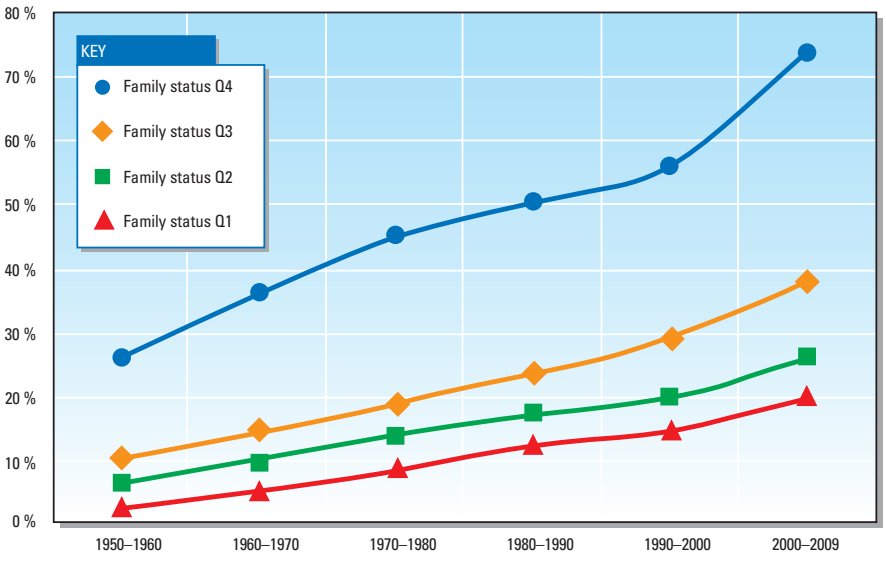
Social strata: Who will take a degree?

An overall analysis can answer the question how varied are the chances of young people coming from different social strata in Europe to attain tertiary education. It is based on comprehensive characteristics of the social status of their parents consisting of four variables that include father's and mother's education and occupation. The set of all families examined in European countries was divided—according to quartile values of the aforementioned characteristics—into four status groups of the same size (Q1 for the group with the lowest social status and Q4 for the group with the highest status). Two approaches were adopted to form the groups: for the entire European set, covering all six period under examination, and for six subsets according to their respective historical periods.[3] In both cases attention was paid to the development of the proportion of children who achieved tertiary education—i.e. the development of chances of those from varying social and economic family backgrounds to achieve tertiary education was analysed.

As part of the first approach, the overall number of families was at first divided into four groups of the same size. The groups´ characteristics remain the same throughout but their size changes in various periods depending on the development of the average level and distribution of the families' social status. While in the 1950s families with a lower and the lowest level of social status largely predominate, in the most recent period there is a predominating proportion of families with a high level of social status. In addition to the level of social status, the overall chances to get tertiary qualifications also increase considerably. As both these processes vary in terms of their pace and robustness and as they intertwine and influence one another, the development of chances to attain tertiary education for children from various social strata is very complex.

As part of the second approach, the breakdown of the overall number of families into four status groups of the same size was done separately for each period. Unlike the first approach, the size of all groups in all periods is the same (it is always one quarter), but the groups' characteristics change in various periods according to the parents' education and occupation, as they reflect the overall increase in the average level of educational attainment and the occupational index ISEI. While for instance in the 1950s upper secondary education would suffice for inclusion into the quarter of families with the highest social status, at present at least one parent must have tertiary education if the family is to fall in this group (the results of the procedure mentioned above are illustrated in the graph below).

Proportion of tertiary graduates, by family status
Europe 1950–2009



The following mutually complementing conclusions can be drawn on the basis of the analysis:

• In the last sixty years, chances to get tertiary qualifications have considerably increased, both overall (from 12 % in the 1950s up to 42 % today) and for all social groups, while the differences between groups even decreased in relative terms. For example, the chances of the group with the highest social status have increased almost three times but the chances of the group with the lowest social status have increased (from very low, almost zero values initially) more than seven times. The chances of children of the quarter of the low status families are nearing almost 20 %; the chances of children of the tenth of families with the lowest status reach only 16 % but their disadvantage is by far smaller than it used to be. At European level it has not been confirmed that an increase in chances to get tertiary education for children from families with a lower level of social status is conditional upon the groups with a higher status taking up the all the chances at first.

• For the entire period of the last sixty years children coming from the quarter of European families with the highest level of social status have had considerably higher chances to get tertiary qualifications as compared to children from other families. Although the ratio of their chances to those of other groups has been decreasing in relative terms, absolute differences continue to be large; at present their chances are nearly 75 %, and, in the tenth of the families with the highest status, they are as high as 90 %. Although the chances of children in the other three social groups are far more balanced, the differences between them remain considerable even today. The chances of descendants from the quarter of high status families are even today more than 3.7 times higher than those of their peers coming from the quarter of low status families. Children coming from the top one tenth of families with the highest social status have chances 5.5 times higher than children coming from the bottom one tenth of families with the lowest social status.

[3] It was of course possible to carry out the analysis for each country separately, but the study did not provide enough room for this approach.

3.2 Inequality index in access to tertiary education 1950–2009

The overall level of inequality in access to tertiary education can be assessed according to the ***Inequality index*** that is described and explained in more detail in Chapter 2 and corresponds to the *Gini index*. It ascertains the level of inequality in access to tertiary education depending on the extent to which acquisition of tertiary education can be explained or predicted by means of so-called ascriptive factors that an individual cannot influence and that are determined from the "outside" or that are "inborn". The most important ascriptive factors are, undoubtedly, the education and occupation of both parents (these factors jointly characterise *the socio-economic background of an individual*). These are variables that could be taken from the ESS database to be used not only in the conceptual model (also explained in Chapter 2), but also, and most importantly, for a specific calculation of Inequality index values in 25 European countries. The stronger the influence of these factors, the higher the level of Inequality index and, consequently, the higher level of inequality in access to tertiary education in the given society and period.

The overall results of the analysis of the Inequality index development in all participating European countries reveal that, over the last six decades, ***the level of inequality in access to tertiary education in Europe has been gradually decreasing***, although this trend is not particularly strong. The overall Inequality index level (an average for 25 European countries) decreased from 54 in the 1950s to the current 49 (the figure for the most recent period is a revised one and its justification and way of calculation are presented in Chapter 2; the non-revised value of the index is 48). However, the analysis also clearly shows that the process of decreasing the inequality levels has not been steady even at Europe-wide level, as the level of inequality was decreasing mainly in the 1960s, 1970s, and 1980s. The reason is that in the 1980s inequalities had reached their minimum levels in many European countries, but in the 1990s they began to grow again. In some countries the levels even exceeded those achieved in the 1970s and the Inequality index for Europe rose from 47 to 49. The situation in the 1990s can be explained by the overall development of society in developed countries around the world that was rather strongly affected by neoliberalism—the manifestations of which included, among other things, an increase in the level of wealth and income inequality and other similar indicators[4].

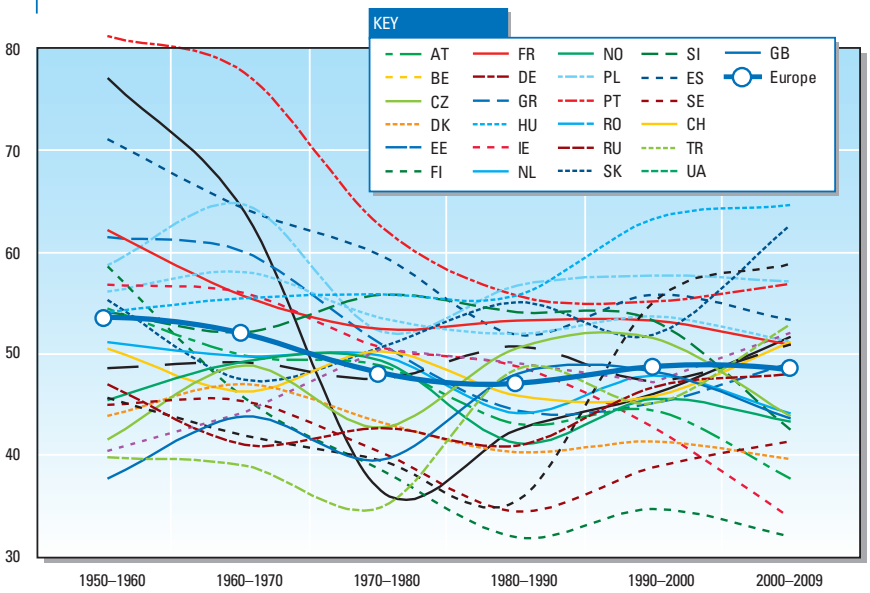
Compared to the EPC study of the last year (Koucký, Bartušek and Kovařovic 2009), the value of the index has grown slightly in the 1950s, which has been caused not only by increasing the number of respondents in countries already analysed by several thousands but particularly by enlarging the analysed set of countries by three new countries (Romania, the Russian Federation, and Turkey). On the other hand the value of the index has decreased slightly from the 1960s to the 1990s, but this minute change has only confirmed the trend described above. Moreover, in the last period both the revised and unrevised values have been confirmed.

Neither the average European level of inequality in access to tertiary education nor the long-term trends leading to its decrease can be generalised for all countries and periods. It is necessary to deal with individual countries and periods specifically, as there are major differences. It has turned out, for example, that the originally large spread (measured by a decisive difference) of the Inequality index values among the countries began to diminish in the 1950s and kept on diminishing till the 1990s. However, there was no further decrease in the differences in inequality levels and the spread of the index values got larger again, although the differences in inequality among European countries have not as yet reached the 1950s and 1960s levels.

In the decades immediately after the end of WWII there were high levels of inequalities in access to tertiary education particularly in South-West Europe—for example in Portugal, Spain, Turkey and also France or Greece. Belgium, Finland, Ireland and Poland also showed a high level of inequality in the 1950s. However, from that time on inequalities in most of these countries tended to decrease or fluctuate—although this was not true of all participating countries and all periods analysed.

For example, in the last two decades (1990–2009) the highest level of inequality in access to tertiary education of all 25 countries can be found in Hungary, which is also the only country where inequality has been still growing but for the stagnation in the 1970s. A major growing trend in inequalities could also be observed in Estonia in the 1950s to the 1970s, in Turkey since the 1970s, and for instance in Germany, Greece, and Romania since the 1980s to the present. However, while in Hungary the level of inequality in access to tertiary education was above-the-average as early as the 1950s, Estonia stepped over the European average as late as during the 1970s, and Germany has even never reached

Inequality index in access to tertiary education
European countries 1950–2009



[4] An important reports on the development of income and earnings distribution and inequality in developed countries for example has been prepared by OECD (2008a) or by Professor Atkinson (2008). The issue has been also raised and presented for discussion in a comprehensive and interesting manner by a journalist-style but extensive special report in The Economist (2009).

the European average. A steady increase in inequality levels has, since the 1980s, also been the case of Sweden, where the starting situation was far more favourable: therefore, for the entire period after 1980, Sweden has kept its level of inequality relatively well below the European average.

On the other hand, a major and steady decrease in the level of inequalities in access to tertiary education occurred in Austria, Finland, Ireland, Portugal, and Spain. However, while Finland and Ireland have shown the lowest inequality levels of all countries since 2000, these values remain at an above-the-average level in Spain and Portugal. Both influences—the starting level of inequality and the long-term development tendencies—intertwine and co-decide their present level. In the most recent period after 2000 the level of inequalities is the lowest in Austria, Denmark, Finland, Ireland, and Sweden—i.e. countries where the Inequality index either scored a major decrease or was low for the entire period.

The analysis of the spread clearly shows that the differences between countries are far from negligible—both in terms of the level and the development of inequalities in access to tertiary education[5]. Another objective of the analysis therefore was to identify such groups of countries that are relatively similar in both these aspects—i.e. the overall level of inequality and its development over the last six decades. On the one hand there cannot be too many such groups due to the reasons of interpretation, on the other hand too large groups would blur the internal diversity of the countries involved.

The three basic, relatively homogenous groups of European countries are composed as follows:

North-Western Europe (North-West) = Austria (AT), Denmark (DK), Finland (FI), Germany (DE), Ireland (IE), the Netherlands (NL), Norway (NO), Sweden (SE), the United Kingdom (GB);

South-Western Europe (South-West) = Belgium (BE), France (FR), Greece (GR), Portugal (PT), Spain (ES), Switzerland (CH), Turkey (TR);

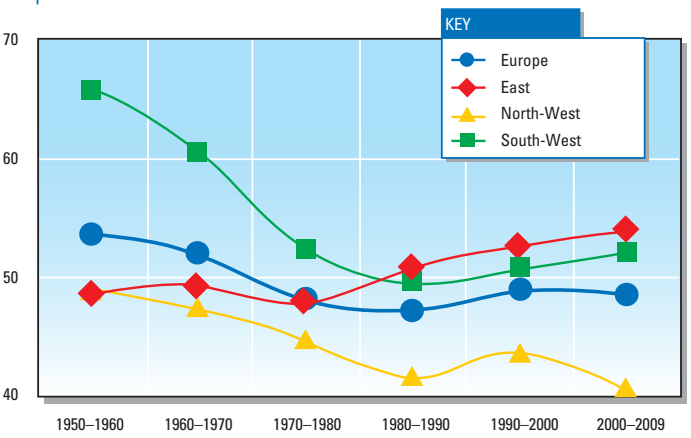
Eastern Europe (East) = the Czech Republic (CZ), Estonia (EE), Hungary (HU), Poland (PL), Romania (RO), the Russian Federation (RU), the Slovak Republic (SK), Slovenia (SI), Ukraine (UA).

The outcome of a thorough analysis of development trends and positions of individual countries in all six periods under review has led to the formation of three basic, *relatively homogenous*, groups of countries. Although these three groups represent certain types, we must bear in mind that the specific positions and development of individual countries tend to create a continuum where it is not possible to strictly define any clear-cut boundaries, and countries remain *relatively heterogeneous* even within the groups. In view of the fact that the breakdown of the countries into groups is, to a degree, related to their historical-political-geographic situation, the three resulting types (groups of countries) are described as countries of ***North-Western Europe***, countries of ***South-Western Europe*** and countries of ***Eastern Europe***.

North-Western Europe is quite clearly the most homogeneous group, with Austria, the Netherlands, and Norway, and also Denmark, Germany, and Sweden, being very close together both

Inequality index in access to tertiary education

Groups of European countries 1950–2009



by the level and the development of the index. The United Kingdom stands a bit apart, being nearer to Eastern Europe (particularly to the Czech Republic) in terms of its development, as well as Finland and Ireland showing a steep decrease in inequality. The other two groups are more heterogeneous. In South-Western Europe Belgium and France are the closest, followed by Greece and Spain, and further apart by Switzerland (nearing to Eastern Europe), and also Portugal and Turkey. Eastern Europe is the least homogeneous group being defined mostly by the history and geography of the respective countries. Estonia and the Russian Federation, Romania and Ukraine, and Hungary and the Slovak Republic are mutually the closest in this group.

The formation of these groups of countries has resulted in defining three, relatively different trajectories of development that vary both in terms of the overall level and the dynamics of change. In terms of the spread of the level of inequalities for the three resulting groups of countries it is true that the differences in inequalities were the largest in the 1950s and the smallest in the 1970s. From the 1970s on the differences in the level of inequality among the three groups of countries began to increase again.

The decrease in the overall level of Inequality index in access to tertiary education in Europe can be largely attributed to the ***countries of South-Western Europe***. Historically, they have a predominantly catholic tradition with a steeper social hierarchy and more clearly stratified social groups and classes. The original levels of inequality in access to tertiary education in these countries that were by far the highest (the Inequality index in the 1950s was 66 on average, while it was by far the highest in Portugal and very high in Spain and Turkey) began show a steady decrease in the following decades[6]. The Inequality index gradually dropped to as low as the average level of 49 in the 1980s. In the 1990s and also after 2000 inequalities in South-Western Europe have been increasing slightly, reaching the value of 52 at present.

Overall, the lowest levels of inequalities in access to tertiary education in nearly the entire post-war period can be found in ***countries of North-Western Europe***. They are, to a large degree, rooted in the protestant tradition with a less steep social

[5] The figure shows the overall situation in Europe as a tangle of development curves for respective countries, however more specific and detailed findings about the development in all 25 European countries are presented as part of their profiles in the annex to this publication.

[6] Portugal may serve as an example of a possible inaccuracy caused by replacing the historical development by an analysis of age cohorts. While the analysis of cohorts concludes that the most considerable decrease in inequalities in Portugal occurred in the 1960s that decrease is more likely to have occurred in the following decades when older students, who had not had an opportunity to study before, entered higher education.

hierarchy and smaller differences between the characteristics of social groups and strata. Although the average Inequality index was low in this group as early as 1950s, it decreased from the initial average value of 49 to the current 40 (revision confirmed the original value). However, even North-Western Europe scored a certain increase in inequalities in the 1990s (the largest increase occurred in Germany, Sweden and Norway).

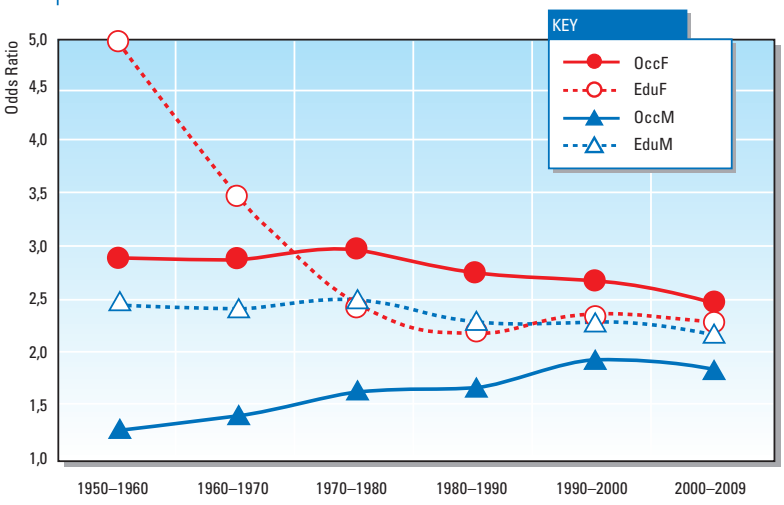
Countries of Eastern Europe experienced an entirely different development in terms of inequalities. In the 1950s they showed the lowest average Inequality index in access to tertiary education that was approximately the same as that in countries of North-Western Europe. In most Eastern European countries this was caused, above all, by post-war communist takeovers that were often accompanied by an extensive "regrouping" of social strata or "overturning" of the social structures, a massive emigration of people from higher social classes and introduction of "class" criteria in admission to tertiary education institutions. Understandably, this disrupted the processes of inter-generational transmission of education (see, for example, Bourdieu 1986). Despite this inequalities in access to tertiary education began to increase again as early as the 1960s and than, again, in the 1980s. Members of "new social elites" gradually restored and consolidated the continuity of inter-generational transmission[7]. As a result, in the 1980s it was for the first time that the average Inequality index in countries of Eastern Europe achieved the highest level of all three groups.

From the 1990s—i.e. immediately after the demise of socialism—Eastern European countries experienced further social changes. Their implications included, among other things, an increase in overall social inequalities in many areas, for example, in the distribution of wealth and income. It is therefore not surprising that these changes also had an impact on inequalities in access to tertiary education. This was particularly due the *social status crystallisation*[8] that manifested itself, apart from other things, in a severe strengthening of the link between education and income (which was very loose under socialism).

An increase in the overall *congruence* of social status where education began to play a major role had another important implication. In systems with a low proportion of adults with higher qualifications[9] the demand for tertiary education on the part of the new young generations began to grow dramatically (in some Eastern European countries these generations represented large demographic groups). It took higher education policy several years to respond to this development. The pressures to achieve tertiary education first appeared, naturally, in families with a tradition of higher education. Moreover, due to the necessary selection as part of a supply-oriented system, successful candidates were mainly those with a more favourable (supportive) family background and a higher level of economic, social and cultural capital (see, for example, Shavit, Arum and Gamoran 2007).

Also after 2000 that inequalities have begun to increase slightly in Eastern European countries. Up to this time the consequences of the development in the 1960s and, particularly, in the 1980s where inequalities in this group of countries scored a steep growth (while in the other two groups they dropped rapidly) have not been offset but more likely confirmed. The average level of Inequality index in the countries of Eastern Europe continues to be much higher than the average for the other groups of European countries, and it exceeds its own (Eastern European) values achieved in the previous decades.

Impact of family background factors
European countries 1950–2009



3.3 The profiles of family background factors

In addition to the overall influence of family background on inequalities in access to tertiary education of children from various social strata, it is natural that each of the four factors of family background (so-called ascriptive factors) has a different impact on the overall level of inequality. Another objective therefore was to analyse the scale of impact of various family background factors not only for the European population as a whole, but also for various countries and development periods. The analyses showed that there are marked differences between various countries and periods.

The most striking factor affecting, over the long term, the chances of achieving tertiary education in Europe is the ***father's occupation.*** This factor was the strongest in all periods in Europe as a whole with the exception of the 1950s and the 1960s. In the most recent period that was examined (2000–2009) the father's occupations had the largest effect in Austria, Romania, the Slovak Republic, and Switzerland. Children whose fathers fall in these countries within the quarter of fathers with the highest occupational status have three times higher chances to achieve tertiary education as compared to children whose fathers perform an occupation belonging to the quarter of occupations with

[7] In the range of studies analysing these processes we can mention the work of Hungarian authors Konrad and Szelenyi (1979).

[8] *Social status crystallisation* is a process where status characteristics (e.g. wealth, income, power, authority, influence, prestige, education, etc.), which were originally only very loosely connected, begin to strengthen their mutual links and correlate together.

[9] One of the major features of socialism was low demand for education. In view of the weak dynamics of the economic development, slow introduction of new technologies and focus on traditional manufacturing sectors with low skills intensity, demand on the part of employers was limited. Demand on the part of individuals was also low due to the low economic return on investment in education and its social prestige. Higher levels of educational attainment were seen more as a cultural value that, however, was not widely shared in society.

the lowest status. A significant influence of father's occupation can also be seen in the Czech Republic, Poland, and Spain where this chance is 2.5 times higher. On the other hand, the most "balanced" chances of attaining tertiary education in terms of the father's occupation are enjoyed by children in Estonia, Finland, Hungary, the Netherlands and Ukraine where the differences between the children of fathers with the highest occupational status and those with the lowest status are insignificant.

However, it is Hungary that, together with Denmark, Portugal, Spain, Switzerland and Turkey, ranks among countries where the ***father's education*** has the most robust impact on chances to acquire tertiary education. In the most recent period (2000–2009) children of the quarter of fathers with the highest level of educational attainment had more than three times (and often even four times) higher chances of achieving tertiary qualifications as compared to children of the quarter of fathers with the lowest level of education.

The relative influence of the father's education and occupation was particularly strong in the 1950s and 1960s; it has been gradually decreasing since then. While the impact of the father's education weakened relatively quickly and gradually reached levels comparable to those of the mother's education, the influence of the father's occupation declined far more slowly and since the 1980s to the present, has remained far the most important ascriptive factor. Particularly after WWII we could even make a rather simplistic statement that individual countries differed largely in terms of whether it was the father's education or occupation that affected the educational attainment of his daughter or son. In about half of the countries the influence of the two factors is nearly the same.

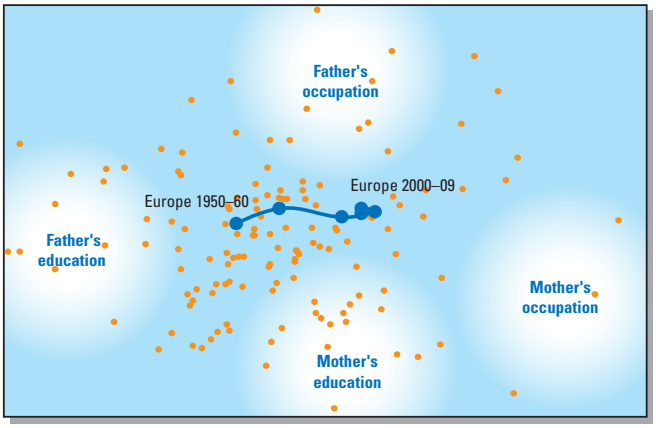
However, in no way can we argue that the influence of the family background was only materialised via the father's characteristics. The ***education of mothers*** did not at first have such an impact as the education of fathers, but it would be a mistake to describe it as being negligible. The effects of the individual factors gradually began to equalise in the 1960s and the 1970s, and in some countries the impact of the mother's education even outweighed the influence of the father's education. This is particularly well displayed in countries such as Belgium, France, Hungary, the Russian Federation and Spain where, in recent years, the children of the quarter of mothers with the highest level of education have had more than three times higher changes to achieve tertiary education as compared to the children of the quarter of mothers with the lowest qualifications.

The influence of the ***mother's occupation*** has been the least significant recently at European level; in about a third of the countries it is even negligible. This is undoubtedly related to the rate of employment and the position of mothers in the labour market. The impact of the mother's occupation was the lowest particularly in the 1950s; since then, however, it had been the only factor the influence of which had been gradually increasing to come close to the influence of both parents' education in the 1990s and again from 2000; the mother's occupation factor causes that children with this "advantage" have almost three times as high chances (and even more) to achieve higher education in the Czech Republic, Greece, Hungary, and the Slovak Republic.

A comparison of the effects of the father's and the mother's occupation, i.e. the most and the least significant family background factors in terms of acquisition of tertiary education, reveals that, over the last sixty years, they have converged to a large degree, although they were absolutely incomparable still in the 1960s. However, it is necessary to stress that the father's occupation still dominates among the four factors although the effects of the remaining factors are coming closer. There are only a few countries where the father's occupation is not strongest than that one of the mother at present: the Czech Republic, Estonia, Greece, Hungary, Ukraine, and the United Kingdom. While in the 1950s and the 1960s the significance of the various factors differed considerably in Europe, they have been gradually converging over the last decades.

The analysis of the development and distribution of all four family background factors that affect the attainment of tertiary education has pointed to two basic dimensions of a possible transmission of educational inequality. The first one specifies whether the transmission of inequality takes place more due to the characteristics (education and occupation) of the father, or whether it is due to these characteristics of the mother. The second dimension specifies whether the transmission of inequality takes place more as a result of the occupation or education of both parents. The analysis therefore makes it possible to display the position of various countries in various periods in an area delimited by the four family background factors that play the role of poles or magnets to which the given country is pulled to a varying degree in the given period. The figure illustrates the development and distribution of the effects of the various factors of family background in Europe as a whole, but it also captures the considerable diversity of positions of all 25 countries in the six historical periods examined.

Typology of family background factors
European countries 1950–2009

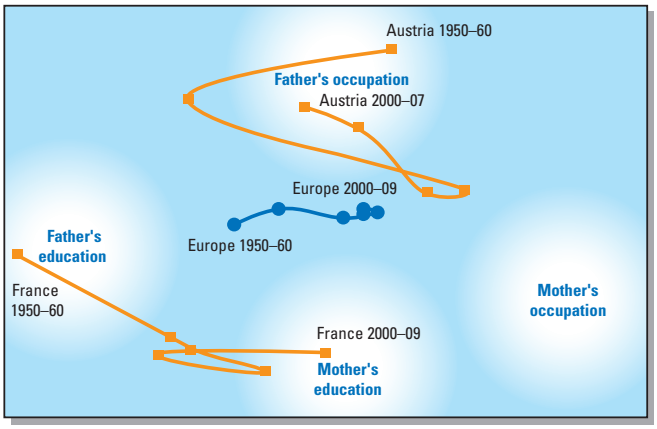


Over the last sixty years the weight of individual factors tilted at first towards the father's characteristics. Originally, it was largely the father's education. Since the 1960s, however, it has been the father's occupation that has had the largest impact on whether or not the children have achieved tertiary education. A major change as regards the influence of the various factors occurred during the 1970s when the mother's influence began to increase and, at the same time, the shift from education to occupation continued. The original predominance of the father's influence gets gradually eliminated and, along with this, the influence of the occupation of both parents is increasing. However, it is not possible to generalise the overall development, as there are major differences between countries. And they must therefore be dealt with separately.

The development of each country is characterised by a specific profile of the impact of family background. For example, France is among those countries where, over the last sixty years, the weight of various family background factors tilted rather significantly towards the education of both partners, while the influence

of their occupation was nearly insignificant for the entire period. Conversely, in Austria, for example, the impact of the occupation of both parents (and particularly of the father) on attainment of tertiary education of their children has always played a major role, while the influence of parents' education has become more important only in recent years. The position of both countries and their development in the past sixty years are illustrated below.[10]

Typology of family background factors
Austria and France 1950–2009



3.4 Expansion of tertiary education and inequality in access

The three main types of tertiary education systems are based on Martin Trow's typology derived from their quantitative development. The typology is modified (as described and justified in Chapter 1) so that it does not use indicators based on the entry rate in order to examine the quantitative development of tertiary education. Instead, it uses indicators based on the graduation rate, i.e. proportion of graduates of higher education institutions and other tertiary education institutions in the relevant age cohort. The typology divides tertiary education into *elite tertiary education,* where the proportion of graduates in the relevant age cohort is lower than 20 %; *mass tertiary education* with the proportion of tertiary education graduates ranging from 20 % to 40 %; and *universal tertiary education* where the proportion of graduates exceeds 40 % of the population at the relevant age.

The analysis of the influence of the expansion of tertiary education on inequality in access to it concerns all 25 countries in all six periods under examination. The table below lists the countries in periods examined according to the proportion of tertiary education graduates in the relevant population cohort (i.e. according to the level of quantitative development of tertiary education). Moreover, the relevant level of Inequality index is presented for each country. The data on the proportions of graduates in the relevant age cohorts (used in this study and replacing those relating to historical periods) are not identical with the official data of international organisations (e.g. the OECD or the EC), but the degree of similarity is very high[11].

In terms of the overall trends the data confirm that individual countries' tertiary education systems gradually change from the elite type via the mass type to the universal type. First countries that have undergone this process were Belgium, Denmark, Finland, France Ireland, and Norway,. In the most recent period under review all countries (but for Turkey) fall either into the mass or universal type category. At the same time it is clear that some countries traditionally have a lower proportion of tertiary education graduates. Besides Turkey, these include most Central and Eastern European countries (the Czech Republic, Hungary, and the Slovak Republic), and also countries with a long and strong tradition of vocational education and training on upper secondary (ISCED 3) or postsecondary (ISCED 4) but no tertiary levels (f.i. Austria and Germany) and also some countries of the previous group (particularly the Czech Republic).

However, the data about the overall quantitative access to tertiary education do not provide any information as to the actual openness of tertiary education to various social strata and groups. Analysing the relationship between the graduation rate and the Inequality index can, of course, shed more light on the degree to which quantitative expansion affects equitable access to tertiary education, and how their relationship changes in time.

It was assumed—particularly at the initial stages of the quantitative expansion of tertiary systems—that expanding access to tertiary education would go hand in hand with decreasing inequality. The assumption was that the severe selection in admission to tertiary education in elite systems was to blame for the fact that, due to a number of economic, social and cultural reasons, children from socially disadvantaged backgrounds either did not apply at all, or they were less successful in the stiff competition during the admission proceedings.

It was therefore assumed that an increase in the proportion of tertiary education students in the population and elimination or at least alleviation of selection in admission to tertiary education institutions would automatically lead to a decrease in inequality among various social groups. Moreover, over the previous decades many countries took a number of major steps in order to implement the principles of fairer provision of educational opportunities and equal access to, and participation in, tertiary education. Higher education in many countries underwent structural diversification that gradually transformed it into systems of tertiary education, and far-reaching qualitative and curricular reforms that jointly contributed to a major expansion of access to tertiary education.

However, as early as the 1990s various summaries of the outcomes of international studies revealed[12] that, despite the ongoing process of the expansion of tertiary education and some systemic improvements, there had only been a limited decrease in inequality in access to more advanced levels of education and that inequalities rather tends to assume take a different character. Although in most

[10] The development of the impact of all four factors in individual countries is documented in the countries' profiles in the annex to this report (in the same way as the above examples of the Netherlands and of the Czech Republic).

[11] Historical data on the proportion of graduates in the relevant population (as contained in documents from the 1960s and 1970s) are problematic due to other reasons, both historical and comparative. This is why international organisations most often analyse current data on the proportion of tertiary education in various (mostly ten-year) age cohorts predominantly based on national Labour Force Surveys. The assigning of various age cohorts to individual historical periods (as modified in the methodology applied by the EPC) is somewhat more precise. Still, there could be certain levels of inaccuracy particularly in the oldest and the youngest groups of respondents; the reasons for these are discussed in Chapter 2.

[12] Among many others it is necessary to mention at least the OECD (1996, 1997), Husén (1987) or Shavit and Blossfeld (1993).

countries the level of access increased for all groups (both advantaged and disadvantaged), the level of inequality remains essentially the same. It is only when the demand for tertiary education on the part of upper classes is nearly saturated that less privileged social groups get a chance, and overall inequality can therefore decrease as a result. However, this occurs only when tertiary education has already reached the mass, or more likely, the universal stage, and also inequalities in access to this education level have been transformed.

In quantitatively large and, at the same time, highly differentiated systems access to tertiary education as such ceases to be important. What becomes important instead is what institution, level of education, type of study programme or field of study one attends, whether one completes his/her study it, what actual results he/she achieves and what capacities he/she builds during studies to enter the labour market. Inequalities therefore appear in less obvious contexts, they become subtler and more difficult to identify.

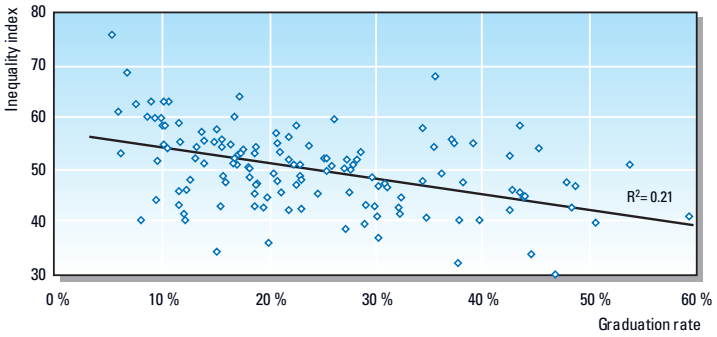
Types of tertiary education systems
Expansion and Inequality index

Type	1950–1960		1960–1970		1970–1980		1980–1990		1990–2000		2000–2009	
	Country	Index	Country	Index	Country	Index	Country	Index	Country	Index	Country	Index
ELITE (less than 20 % tertiary graduates in the relevant age group)	TR	77	TR	64	TR	37	TR	43	TR	46	TR	52
	PT	81	PT	78	PT	63	PT	56	SK	52	•	•
	GR	62	ES	64	PL	52	PL	57	CZ	52	•	•
	ES	71	SK	47	CZ	43	SK	55	HU	63	•	•
	PL	59	PL	65	SK	51	HU	56	PT	55	•	•
	SK	55	AT	50	AT	49	CZ	51	•	•	•	•
	CZ	42	GR	60	ES	60	AT	43	•	•	•	•
	SI	54	CZ	49	HU	56	RO	36	•	•	•	•
	AT	54	HU	55	GR	51	PT	55	•	•	•	•
	RO	46	SI	52	SI	56	•	•	•	•	•	•
	HU	54	IE	56	PL	52	SI	54	•	•	•	•
	FI	59	RO	42	CZ	43	ES	52	AT	44	•	•
	FR	62	Europe	52	SK	51	GR	44	RO	55	•	•
	Europe	54	CH	46	AT	49	Europe	47	PL	58	•	•
	IE	57	FR	56	ES	60	CH	46	SI	53	•	•
	SE	45	FI	46	HU	56	DE	41	DE	47	•	•
	RU	49	RU	49	GR	51	IE	49	ES	56	CZ	44
	CH	50	SE	45	SI	56	RO	36	PT	55	TR	52
	UA	40										
	BE	56										
	EE	41										
	NL	51										
	GB	38										
	DE	47										
MASS (20 to 40 % tertiary graduates in the relevant age group)	NO	45	EE	44	IE	51	SI	54	•	•	•	•
	DK	44	DE	41	CH	50	ES	52	AT	44	•	•
			UA	39	RO	40	GR	44	RO	55	•	•
			GB	44	Europe	48	Europe	47	PL	58	•	•
			NL	50	FR	52	CH	46	SI	53	•	•
			BE	58	RU	48	DE	41	DE	47	•	•
			NO	49	NL	50	IE	49	ES	56	CZ	44
			DK	47	DE	43	RU	51	Europe	49	SK	63
					EE	51	NL	44	CH	46	HU	64
					SE	40	FR	53	GR	45	DE	48
					FI	39	SE	35	NL	48	AT	38
					BE	54	EE	49	RU	47	PT	57
					UA	35	GB	48	EE	47	RO	59
					GB	40	UA	49	SE	39	PL	57
					NO	49	BE	52	UA	45	SI	43
					DK	43	FI	32	IE	43	EE	52
							NO	41	GB	48	CH	51
							DK	40	BE	54	NL	44
UNIVERSAL (over 40 % tertiary graduates in the relevant age group)									FR	53	Europe	49
									NO	46	GR	49
									FI	35	RU	51
									DK	41	SE	41
											ES	53
											UA	53
											GB	44
											FI	32
											BE	51
											IE	34
											FR	51
											NO	43
											DK	40

The relationship between the level of quantitative development of tertiary education (and its classification according to the Martin Trow's typology) and the level of inequality in access to it can be analysed by using the data on the proportion of graduates in the relevant age cohort (the graduation rate) and on the scope of inequalities in access to tertiary education in each of the six periods and in all 25 countries. Based on this it is possible to provide at least a partial answer to the question of whether and to what extent the expansion of tertiary education in European countries has contributed to a decrease in inequality in access to it.

The results of the analysis (illustrated in the following graphs) confirm that there really is a certain relationship between the graduation rate and the Inequality index in access to tertiary education in Europe, as the quantitative expansion accounts for about one fifth of all factors that cause a decrease in the inequality index level (determination index $R^2 = 0.21$)[13]. While in elite tertiary education the average level of the Inequality index is 53, in mass systems it is 48. In universal systems the average level drops to as low as 45.

Expansion and inequality
European countries 1950–2009

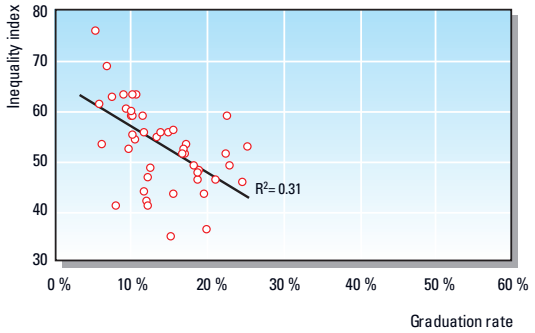


The development of the relationship between expansion and inequality shows specific features in each historical period and it is therefore important to deal with the individual periods in more detail. The relationship between both indicators is closer in each period when analysed separately than when all periods are taken together; the level of quantitative expansion explained more than a fifth of the value of the Inequality index. A thorough analysis of this relationship was carried out both from the point-of-view of differences between countries in individual historical periods, and from the point-of-view of development of individual countries in the six periods analysed.

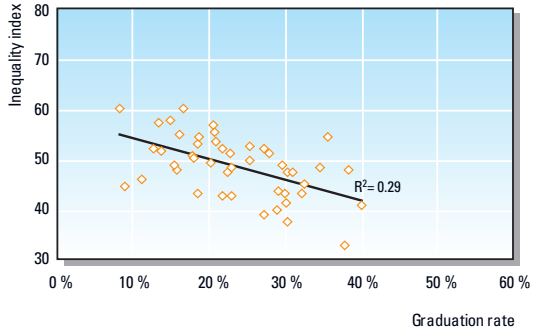
The relationship between the quantitative expansion of tertiary education and the Inequality index was clearly the strongest in the 1950s and 1960s, as the proportion of new graduates in the relevant population explained nearly one third of the differences in Inequality index levels among countries (the determination index $R^2 = 0.31$). However, as early as the 1970s and 1980s this relationship became somewhat weaker ($R^2 = 0.29$). The most recent development shows that this weakening trend continues in the 1990s and after 2000, as only a quarter of the differences in inequality among countries can be attributed to the quantitative expansion of tertiary education ($R^2 = 0.25$). This means that it was mainly the first decades following WWII that saw a relatively strong relationship between the two trends. Later on it tended to weaken, although it is not entirely negligible even nowadays.

On the other side, the relationship between both indicators is not so much close, and at the same time the dispersion of the level of quantitative expansion of tertiary education and of the values of the Inequality index is quite large. Therefore, it is not possible to postulate that quantitative expansion by itself decreases the differences in the attainment of tertiary education by children of various social strata and groups and thus also the Inequality index, though it contributes to this effect; although opportunities for all groups have been increasing, mutual relationship of their levels has not changed too much.

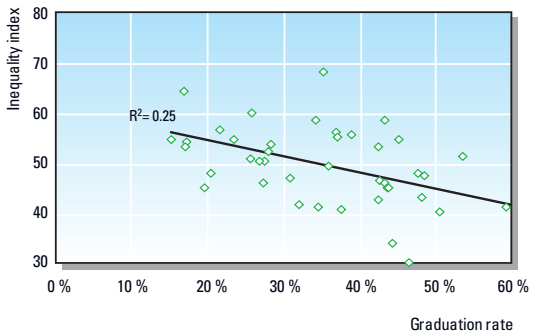
Expansion and inequality
European countries 1950–1970



Expansion and inequality
European countries 1970–1990



Expansion and inequality
European countries 1990–2009



[13] The determination index informs what percentage of the variance of the explained variable is explained by the regression model and what percentage remained not explained. Its value is in the interval from zero to one, values close to zero correspond to poor quality of the model, values close to one correspond to high quality of the model.

4 Conclusions

Interest in the complex relationship between the growth of tertiary education and the changing level of inequity can be observed since the sixties of the twentieth century. Yet as far as international comparison and evaluation is concerned, only few systematic and more substantial efforts have been made during the last fifty years, as opportunities for analysing comparable data gathered in international databases have been rather limited. Although large international surveys focused on inequalities in access to tertiary education are rather an exception, it is still possible to carry out comparative analyses based on data gathered from surveys of various size, conducted on other themes of social studies.

Such a comparison of the development of inequalities in access to tertiary education in European countries has been the aim of the Education Policy Centre at the Faculty of Education, Charles University in Prague (EPC). Being the third in a row, this study naturally develops both preceding comparative analyses *(Inequality and Access to Tertiary Education: European Countries 1950–2005 and Who is more Equal? Access to tertiary Education in Europe)* by updating, innovating and enlarging on them.

The approach of the EPC uses dates gathered in four rounds of the European Social Survey (ESS 1–4), conducted in 2002/2003, 2004/2005, 2006/2007, and 2008/2009 in more than twenty European countries. Although the ESS is not primarily focused on education, it contains data which can be used very well for analysing the relation between social structure and inequalities in access to tertiary education. They include essential characteristics of the respondent's family background: education and occupation of his/her father and mother when he/she was fourteen years of age. It has been thus possible to develop and empirically fill up a conceptual model for defining and measuring the Inequality index for 25 European countries. The overall size of the database (which was established by uniting the results of all four rounds) allows analysing not only individual countries but also the distribution of respondents into age groups corresponding to six ten-year historical periods from the 1950s to this day.

Analyses carried out so far have made possible to answer some important research questions relating to different facets of the problem:

• What is the level of inequalities in access to tertiary education in European countries, and how it has changed during the last sixty years?

• What are the basic patterns of their transmission between parents and children?

• What is the relationship between the expansion of tertiary education and the level of inequities in access to it, and how has their character changed?

The ***overall level of inequalities in access to tertiary education*** in Europe has been declining during the last sixty years, parallel to the general development of European societies. However, this statement cannot be generalised, it has been valid neither for all periods of time nor for all countries. Inequalities were decreasing mostly in the 1960s, 1970 and 1980s, when they reached its lowest value in many countries, slightly increasing at a Pan-European level in the 1990s, and remaining at the approximately same level after 2000.

The situation in respective European countries differs a lot, yet it is possible to identify three relatively homogeneous groups of countries having a similar development. As these groups of countries correspond quite well with their historical-political-geographic position and they show a similar development of education systems, they have been indicated as countries of North-Western, South-Western and Eastern Europe.

Although the level of inequalities in ***South-Western European countries*** was and still is considerably higher than in countries of ***North-Western Europe***, the trends in the development of inequalities in access to tertiary education were, to a degree, similar in both groups (but for the last period after 2000). At first, inequalities gradually decreased in the period from the 1950s until the 1980s, and then during the 1990s there was a slight increase. While in the North-Western European countries inequalities have been decreasing again since 2000, reaching their original minimum levels, they have kept on increasing in the South-Western European countries. The development in ***Eastern European countries*** was entirely the opposite in some periods. In accord with their historical development they reached a low level after political and social upheavals in the 1950s, and only in the 1970s did they come close to this minimum. They grew in the 1960s and, particularly, in the 1980s and 1990s as well as in the last period after 2000 when they have reached their average peak level.

The analysis of the development and ***impact of family background factors*** has revealed two basic dimensions of inter-generation transmission of inequalities in access to tertiary education. The first one relates to characteristics either of the father or of the mother, the second one to characteristics either of occupation or of education. At the beginning of the last sixty years the impact of father's characteristics prevailed: of his education in the 1950s and 1960s, and of his occupation since the 1970s. A significant change began to occur as early as in the 1960s when the relative effect of mother's characteristics was strengthening. Access to tertiary education is affected especially by mother's occupation which used to be the weakest factor of all. Gradually, the prevalence of the father has been waning, and occupation of both parents has been becoming more dominant. Even in this case, however, it is not possible to generalise, as individual countries differ a lot and each of them follows its specific pattern how to transmit inequalities.

The study also deals with the relationship between a ***quantitative expansion of tertiary education and the level of inequalities*** in access to it. The analyses have revealed that although expansion of tertiary education in European countries has contributed to lowering of inequalities, their relationship has not been too close, and has been visible only in some countries and in some periods. While the influence of expansion was really quite marked after the WWII, it has been steadily declining since. However it cannot be considered as negligible, it is not possible to contend that quantitative expansion is automatically followed by a reduction of inequalities in access to tertiary education.

The study also draws attention to the ***change in character of inequalities***. As tertiary education has entered mass and later even universal phase, inequalities have become more subtle and less discernible as they changed their focus from quantitative to qualitative characteristics. Today they affect predominantly access to preferred fields of studies and to prestigious institutions, and also the ever more differentiated position of graduates on the labour market. Hence the importance of focusing not only on access to tertiary education in European countries but on providing a comprehensive analysis of the relationships between social origins, access to education, the position of graduates on the labour market and their social status, that is on including also the ***effects of tertiary education***. In the next stage of the project, the EPC will focus on a more detailed comparison of the ***role of tertiary education between origin and destination.***

References

d'Addio, A.C. (2007), *Intergenerational Transmission of Disadvantage: Mobility or Immobility across Generations?,* A Review of the Evidence for OECD Countries, OECD, Paris.

Arrow, K.J., S. Bowles and S.N. Durlauf (eds.) (2000), *Meritocracy and Economic Inequality*, Princeton University Press.

Arum, R., A. Gamoran and Y. Shavit (2007), More Inclusion Than Diversion: Expansion, Differentiation, and Market Structure in Higher Education. In: *Stratification in Higher Education, A Comparative Study*, Stanford University Press, Stanford.

Atkinson, A.B. (2008), *The Changing Distribution of Earnings in OECD Countries*, Oxford University Press, Oxford and New York.

Bell, D. (1973), *The Coming of Postindustrial Society*, Basic Books, New York.

Bernstein, B. (1975), *Class, Codes and Control. Volume III Towards A Theory of Educational Transmissions*, London: Routledge and Kegan Paul.

Boudon, R. (1973), *L'inégalité des chances – La mobilité sociale dans les sociétés industrielles*, Armand Colin.

Boudon, R. (1974), *Education, Opportunity, and Social Inequality: Changing Prospects in Western Society* (translation of L'inegalite des chances), John Wiley & Sons Inc.

Bourdieu, P. (1986), "Forms of Capital". In J.G. Richardson (ed.), *Handbook of Theory and Research for the Sociology of Education*, Greenwood Press, New York.

Bourdieu, P. et J.C. Passeron (1970), *La reproduction: Éléments pour une théorie du système d'enseignement*, Edition de Minuit, Paris.

Bowles, S., H. Gintis and M.O. Groves (eds.) (2008), *Unequal Chances: Family Background and Economic Success*, Princeton University Press.

Breen, R, and J.H. Goldthorpe (1997), Explaining educational differentials: Towards a formal rational action theory. *Rationality and Society, 9*, 275-305.

Breen, R., R. Luijkx, W. Müller and R. Pollak (2005), *Non-Persistent Inequality in Educational Attainment: Evidence from eight European Countries*, EQUALSOC, Mannheim.

Brennan, J. and R. Naidoo (2007), *Higher Education and the Achievement of Equity and Social Justice*, Higher Education Looking Forward Theme 2, European Science Foundation.

CEC (2006), *Efficiency and Equity in European Education and Training Systems*, Commission of the European Communities (CEC), Brussels.

Chevalier, A., K. Denny and D. McMahon (2009), "A Multi-country Study of Inter-generational Educational Mobility". In: Dolton, Asplund and Barth (2009), Edward Elgar Publishing.

Clancy, P. and G. Goastellec (2007), "Exploring Access and Equity in Higher Education: Policy and Performance in a Comparative Perspective", *Higher Education Quarterly*, Volume 61, No.2.

Coleman, J.S. (1991), *Equality and Achievement in Education*, Westview Press, Boulder, Colorado.

Coleman, J.S. and T. Husén (1985), *Becoming Adult in a Changing Society*, OECD, Paris.

Crosier, D. (1994), *Access to Higher Education in Europe for Underrepresented Groups*, European Access Network, London.

Dolton, P., R. Asplund and E. Barth (2009), *Education and Inequality Across Europe*, Edward Elgar Publishing.

Duru-Bellat, M., A. Kieffer and D. Reimer (2008), "Patterns of Social Inequalities in Access to Higher Education in France and Germany", *International Journal of Comparative Sociology,* Vol. 49, No. 4–5.

The Economist (2009), *More or less equal?*, Economist Special Report, Apr 2nd 2009.

Erikson, R. and J.O. Jonsson (eds.) (1996), *Can Education Be Equalized?*, Westview Press, Boulder and Oxford.

Eurydice (2010), *Focus on Higher Education in Europe 2010: The Impact of the Bologna Process*. Eurydice EACEA , Brussels.

Fukuyama, F. (1999), *The Great Disruption, Human Nature and the Reconstitution of Social Order,* The Free Press (Simon & Schuster), New York.

Ganzeboom, H.B.G. and D.J. Treiman (1996), "Internationally Comparable Measures of Occupational Status for the 1988 International Standard Classification of Occupations", *Social Science Research 25,* pp. 201–239.

Halsey, A.H. (1968), "Access to Higher Education from the Point of View of the Social Economic and Cultural Origins of Students". In: *Access to Higher Education in Europe: Comparative Background Documents and Report of the Conference*. UNESCO, Paris.

Halsey, A.H. and others (1997), *Education: Culture, Economy, and Society*, Oxford University Press, Oxford and New York.

Herman, J. (1981), *Access to Higher Education in Europe*, UNESCO-CEPES, Bucharest.

Husén, T. (1972), *Social Background and Educational Career,* OECD, Paris.

Husén, T. (1975), *Social Influences on Educational Attainment,* OECD, Paris.

Husén, T. (1987), *Higher Education and Social Stratification: An International Comparative Study*, UNESCO: IIEP, Paris.

Husén T., A. Tuijnman and W.D. Halls (1992), *Schooling in Modern European Society.* Pergamon Press, Oxford.

ILO (1988), *International Standard Classification of Occupation*, International Labour Office (ILO), Geneva.

Jencks, Ch. et al. (1972), *Inequality: A Reassessment of the Effect of Family and Schooling in America*, Harper Row, New York.

Keller, J. (2008), *Vzdělanostní společnost?* (The knowledge society?), SLON, Praha.

Konrad, G. and I. Szelenyi (1979), *The Intellectuals on the Road to Class Power,* Harcourt, New York.

Koucký, J. (1996), "Access to higher education in the Czech Republic: from central regulation to a balance of incentives", *Higher Education Policy*, volume 9, number 2, pp. 113–124.

Koucký, J., A. Bartušek and J. Kovařovic (2007), *Inequality and Access to Tertiary Education: European Countries 1950–2005,* Working paper, Education Policy Centre, Faculty of Education, Charles University in Prague, Prague.

Koucký, J., A. Bartušek and J. Kovařovic (2009), *Who is more equal? Access to tertiary education in Europe*, Education Policy Centre, Faculty of Education, Charles University, Prague.

Leuven Communiqué (2009), *The Bologna process 2020—the European Higher Education Area in the new decade.*

London Communiqué (2007), *Towards the European Higher Education Area: responding to challenges in a globalised world.*

Lucas, S.R. (2001), "Effectively Maintained Inequality: Education transitions, track mobility, and social background effects", *American Journal of Sociology, 106*, 1642–1690.

Lucas, S.R. and L. Beresford (2010), "Naming and Classifying: Theory, Evidence, and Equity in Education", *Review of Research in Education, Vol. 34, No. 1*, 25–84.

Machin, S. (2006), *Social Disadvantage and Education Experiences*, OECD, Paris.

OECD (1975), *Education, Inequality and Life Chances* (2 Volumes), Organisation for Economic Co-Operation and Development (OECD), Paris.

OECD (1979), *Individual Demand for Education. General Report*, Analytical Report and Case Studies. OECD, Paris.

OECD (1995), *Our Children at Risk*, OECD, Paris.

OECD (1996), *Lifelong Learning for All*, OECD, Paris.

OECD (1997), *Education and Equity in the OECD Countries*, OECD, Paris.

OECD (1998), *Redefining Tertiary Education,* OECD, Paris.

OECD (2004), *Learning for Tomorrow´s Worlds, First Results from PISA 2003*, OECD, Paris.

OECD (2007), *No More Failures: Ten Steps to Equity in Education*, OECD Paris.

OECD (2008a), *Growing Unequal? Income Distribution and Poverty in OECD Countries*, OECD, Paris.

OECD (2008b), *Tertiary Education for the Knowledge Society*, Vol. 2, OECD, Paris.

OECD (2009), *Education at a Glance 2009: OECD Indicators, OECD*, Paris.

Psacharopoulos, G. (2002), *Returns to investment in education: a further update,* World Bank, Washington.

Putnam, R.D. (2000), *Bowling Alone. The Collapse and Revival of American Community.* Simon & Schuster, New York.

Raftery, A.E. (2007), *Maximally Maintained Inequality and Educational Inequality in the Czech Republic,* Seminar of MSMT and Institute of Sociology of the Academy of Sciences of the CR, April 11, 2007.

Schneider, S.L. (2007), *Measuring Educational Attainment in Gross-National Surveys*: The Case of the European Social Survey, Paper presented at the EDUC Research Group Workshop of the EQUALSOC Network, Dijon.

Schneider, S.L. (2009), *Confusing Credentials: The Cross-Nationally Comparable Measurement of Educational Attainment,* Department of Sociology, University of Oxford, Oxford.

Schröder, H. and H.B.G. Ganzeboom (2009), *Measuring and Modelling Education Levels in European Societies,* Paper presented at European Consortium for Sociological Research in Paris, Department of Social Research Methodology, VU University Amsterdam, Amsterdam.

Shavit, Y. and H.P. Blossfeld (1993), *Persistent Inequality: Changing Educational Attainment in Thirteen Countries*, Westview Press, Boulder, Colorado.

Shavit, Y., R. Arum and A. Gamoran (eds.) (2007), *Stratification in Higher Education. A Comparative Study,* Stanford University Press, Stanford.

Sursock, A. and H. Smidt (2010), *Trends 2010: A decade of change in European Higher Education,* European University Association, Brussels.

Trow, M.A. (1974), "Problems in the Transition from Elite to Mass Higher Education". In: *Policies for Higher Education*, OECD, Paris.

Trow, M.A. (2005), "Reflections on the Transition from Elite to Mass to Universal Access". In: *International Handbook of Higher Education*. Kluwer Publishers.

Underwood, K. and P. de Broucker (1998), *An Indicator of Equity: Probability of Attaining a Post-secondary Credential by the Level of Parents' Education*, Centre for Education Statistics, Canada.

UNESCO (1997), *The International Standard Classification of Education ISCED,* UNESCO, Paris.

Usher, A. and A. Cervenan (2005), *Global Higher Education Rankings 2005*, Educational Policy Institute, Toronto.

Wolf, A. (2002), *Does Education Matter?* Penguin Books, London.

Annex Profiles of European countries

The annex to the report on inequalities in access to tertiary education in European countries presents results of analyses of Europe as a whole and of each of the 25 countries included in the study. All profiles have been developed in a similar manner, contain the same indicators and are therefore comparable. The profile of Europe has a somewhat different function (and, for this reason, it is also longer). In addition to results of analyses that are contained in the profiles of the 25 countries, it seeks to explain, as clearly as possible, the terms used in the profiles or refer to them, and to describe how individual indicators are ascertained, what they mean and how they can be interpreted. Most of the terms have been defined before and explained in the text of the study. This is why the profile of Europe contains references to the relevant chapters. For a good understanding of the country profiles it is therefore advisable to consult the profile of Europe as a whole. Country profiles are arranged alphabetically.

Europe

The profile of inequalities in access to tertiary education in Europe as a whole (i.e. in all 25 countries included in the study) is based on an analysis of the whole set of 160 685 respondents. The set has been weighted so that each country in the resulting European profile has the same weight (i.e. each country only accounts for 4 % of the whole). The following terms and results of analyses are defined in each profile: the definition of tertiary education used in the ESS survey; the quantitative development of tertiary education; the development of the level of inequalities in access to tertiary education in 1950–2009; and the development and distribution of the effects of the parents' education and occupation.

Tertiary education. Tertiary education in all European countries is defined by four categories based on the international classification ISCED-97: ISCED 5B, ISCED 5A*short*, ISCED 5A*long* and ISCED 6. It includes graduates of not only universities and other higher education institutions, but also graduates of other institutions providing tertiary education. It is understandable that there are various significant differences within this definition in various countries and periods that are difficult to pinpoint and accommodate. This is why the characteristics of the European set of tertiary education graduates for each period are generated by means of bringing together all sets for individual countries (they are weighted to have one size). Specific categories defining tertiary education in the data sets of individual countries are presented in the respective country profile.

Quantitative expansion. The analysed sample contains over 160 thousand respondents. The largest proportion, 46 thousand, represents the 1980–1990 period. The number of respondents representing each of the remaining periods is not lower than 22 thousand (the lowest figure is assigned to the 1950–1960 period).

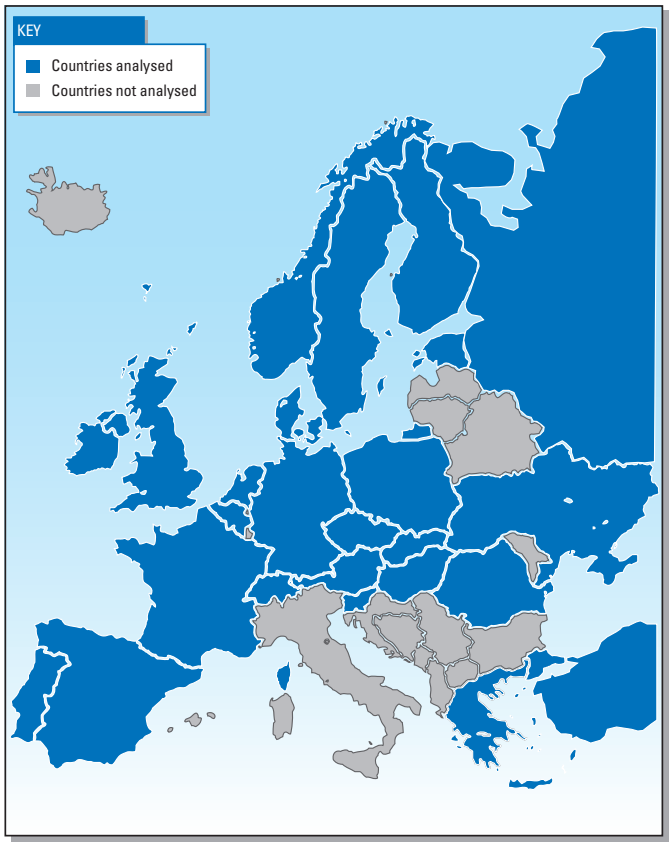
In the course of the last sixty years the proportion of respondents who attained tertiary education has been significantly increasing (from 12 % in the 1950s to 42 % in the current decade) which corresponds to a gradual transition of European tertiary education from the elite phase through the mass phase to the universal phase (see Chapters 1.3 and 3.4).

The data on quantitative development of tertiary education in the most recent decade (after 2000) have been revised for each country (due to reasons stated in Chapter 2.3), which has had a major impact on the average figures for Europe as a whole.

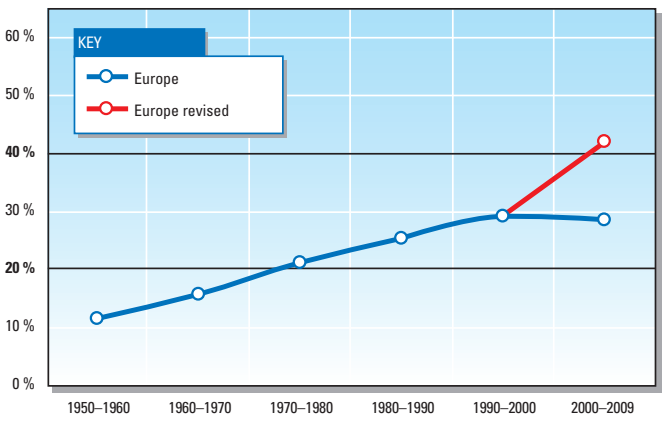
The following graph containing average data calculated for all European countries under examination shows for each period the proportion of respondents who acquired tertiary education. The course of the quantitative development of tertiary education for each country is illustrated in the graph "Proportion of tertiary education graduates in population" in Chapter 1.3. The development of the graduation rate for each country is indicated also numerically in its respective profile.

Inequality index. The development of the Inequality index (the index is defined and explained in Chapter 2.2) from the 1950s until the

Who gets a degree?
European countries examined



Graduation rate
European countries 1950–2009

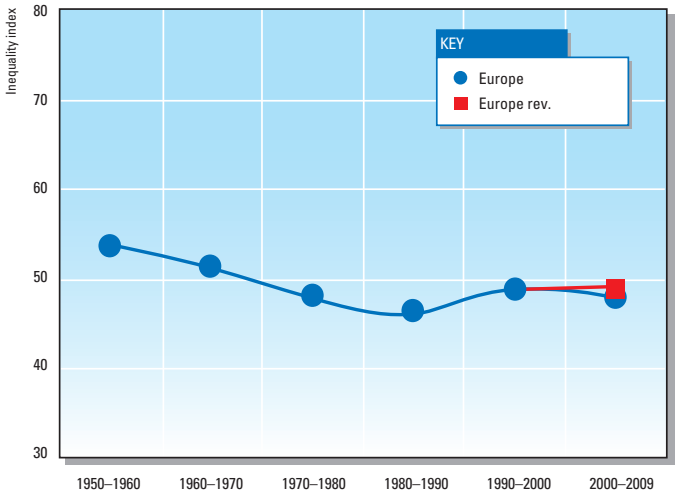


present is documented in the first graph in the country profiles, always comparing the respective country with the average of all European countries under examination. The same scale of the graph used in all country profiles enables to assess the position of the given country vis-à-vis all other countries analysed. Always two values of the Inequality index are indicated for the most recent 2000–2009 period. The first one (marked in the same colour as the entire curve and stated in italics in the table below) serves only for information, as it is the original non-revised valued of the index. What is decisive is therefore the second, so-called revised value of the index (marked in red in the graph), that reflects the fact that a part of the youngest age cohort are still studying and will acquire tertiary education in the future. However, only the revised value of Inequality index is indicated as the average for Europe.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	22 674	33 977	42 198	46 085	44 780	31 866
Tertiary education graduates	2 666	5 770	9 491	12 199	13 345	8 741
Graduation rate (in %)	**12**	**17**	**22**	**26**	**30**	27 / **42***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	**2.9**	**2.9**	**3.0**	**2.8**	**2.7**	**2.5**
Mother's occupation Q1/Q4	**1.3**	**1.4**	**1.6**	**1.7**	**2.0**	**1.9**
Father's education Q1/Q4	**4.9**	**3.5**	**2.4**	**2.2**	**2.4**	**2.3**
Mother's education Q1/Q4	**2.5**	**2.5**	**2.5**	**2.3**	**2.3**	**2.2**
Inequality index (0–100)	**54**	**52**	**48**	**47**	**49**	48 / **49***

*) revised

Inequality index
Europe 1950–2009



The following graph shows that inequalities in access to tertiary education in Europe (taken for all countries under examination together) have been gradually decreasing, although this trend has not been particularly strong. The Inequality index reached its peak value (54) in the 1950s and has not returned to it since. The level of inequality fell mainly in the 1970s, and in the 1980s reached the value of 47. In the 1990s inequalities slightly increased and they have stayed at about this level after 2000.

In addition to the Inequality index values the table below contains additional important data for all six historical periods under review. These include the number of respondents representing each historical period for the purpose of the analyses, and the number of those of them who acquired tertiary education. Similar tables are presented in the country profiles. The resulting level of quantitative development of tertiary education (graduation rate) is the quotient of the two values. There is one exception—the revised values for the most recent period (2000–2009). The table presents the original as well as the revised results.

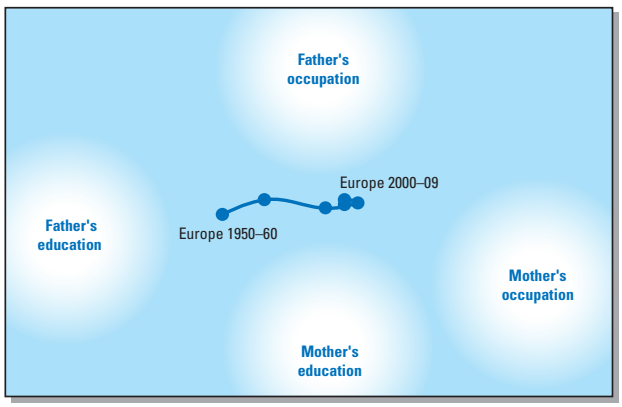
The results of the analysis of the impact of the parents' education and occupation on acquisition of tertiary education are presented in the second part of the table. The odds ratio of acquisition of tertiary education between the quarter of children with the highest advantages and the quarter of children with the lowest advantages (see Chapters 2.1 and 2.2) is expressed for each of the four family background factors and for the given period. Higher levels signify a stronger impact of the relevant family background factor and vice versa. Statistically important values at the 10 % significance level are marked in bold.

The results can be interpreted in such a way that the strongest factor affecting, over the long term, the chances of achieving tertiary education in Europe taken together is the father's occupation (having the highest values and also the largest differences between the chances of the most and the least disadvantaged children in all the periods with the exception of the 1950s and the 1960s). Other significant factors include the father's education, the mother's education and the mother's occupation. The influence of the mother's occupation is the only one increasing; it used to be the weakest of all, but today it follows quite closely the influence of both the father's and the mother's education.

Typology of family background factors. The second graph presented in the country profiles outlines the development and distribution of the effects of the parents' education and occupation in the given country and in Europe as a whole. In an area defined by four family background factors the graph shows the position of each country in the given period, and it also illustrates how it relates to Europe-wide development. It characterises possible transmission of educational inequality by two polar dimensions—whether it is the father or the mother whose influence is stronger, and whether it is education or occupation that has a stronger impact (see Chapter 3.3). Again, the same scale of the graph makes it possible to assess the position of the country within the spread of all countries.

The graph illustrating the situation of all European countries under examination confirms that over the last sixty years the weight of individual factors tilted at first towards the father's characteristics. Originally, it was largely the father's education. Since the 1970s, however, it has been the father's occupation that has had the largest impact on whether or not the children have achieved tertiary education. A major change as regards the influence of the various factors occurred during the 1970s when the mother's relative influence began to increase and, at the same time, the shift from education to occupation continued. The original predominance of the father's influence has been gradually eliminated and the influence of the occupation of both parents has been increasing. At present, the impact of all four factors of family background is similar.

Typology of family background factors
Europe 1950–2009

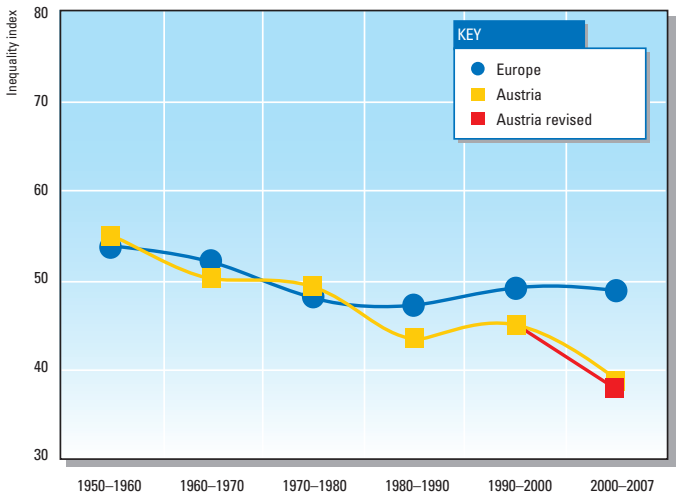


Austria AT

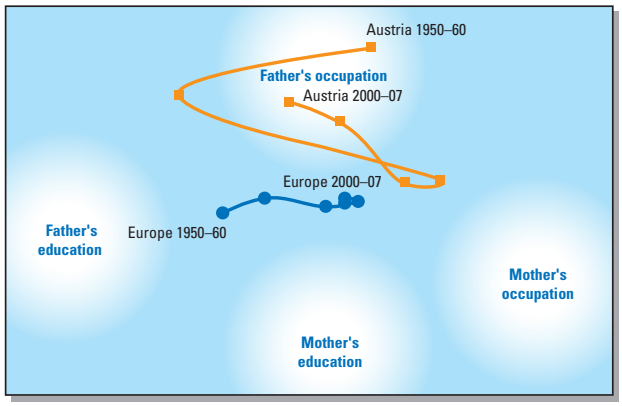
Tertiary education. In Austria it is possible to achieve tertiary education predominantly by the study at both state and private universities (today about 70 % of all students of tertiary education). Moreover, since the end of the 1990s programmes ISCED 5A have been also offered by higher professional schools—*Fachhochschulen* (at present less than 20 % of students), while *Akademien* and *Kollegs* (today more than 10 % of students of tertiary education) provide only programmes 5B. In the data set for Austria tertiary education is defined by category *Academic degree (University degree or equivalent)* in the ESS-1 data and by categories *Post secondary non-tertiary, First stage of tertiary* and *Second stage of tertiary* in the ESS-2 and ESS-3 data. ESS-4 data for Austria will be available in the autumn of 2010.

The proportion of adults with tertiary qualifications in the Austrian population confirms that Austrian tertiary education has entered the mass stage. Participation in tertiary education and consequently also the proportion of graduates in the relevant age group is growing, however, it still hovers deep below the European average, the tertiary sector belongs to the least represented ones among all countries examined.

Inequality index
Austria 1950–2007



Typology of family background factors
Austria 1950–2007



Inequality index. The development of the index since the 1950s shows that inequalities in access to tertiary education in Austria as compared with other countries have been hovering still relatively close to the European average and at the same time gradually decreasing without larger fluctuations. The inequality index was highest and at the same time most above the average in the 1950s and approximately average in the two following decades. Whereas in Europe inequalities in access to tertiary education stagnated during the 1980s, in Austria they significantly decreased at that time, and have been among the lowest ones since. The present decrease of inequalities has been caused by evening up chances in long programmes at the university level.

Family background factors. The analysis of the entire Austrian sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that in Austria father's occupation has unambiguously the long-term and most important impact on the attainment of tertiary education. The remaining family background factors were, in fact, important only in certain periods.

The effect of ***father's occupation*** proves to be decisive in Austria for more than 50 years. It was strongest in the 1950s when it was, moreover, the only important family background factor and when chances of attaining tertiary education were even nearly six times higher for children of fathers with the highest occupational status as compared to children whose fathers had the lowest occupational status. Although the level of this effect decreased to about a half during the 1960s, it has still remained the most important factor, and at present, chances of children who come from families advantaged by this factor are almost four times higher.

The family background factor that started to influence the attainment of tertiary education in Austria only from the 1960s is ***mother's occupation***. Its effect was not by far as important as father's occupation nevertheless children of mothers with the highest occupational status have, as compared to children whose mothers have the lowest occupational status, nearly two times higher chances of achieving tertiary education.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2007
Number of respondents	646	1 053	1 497	2 111	1 964	958
Tertiary education graduates	64	100	208	394	389	176
Graduation rate (in %)	10	9	14	19	20	18 / 31*
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	5.8	3.1	3.8	3.3	4.3	3.7
Mother's occupation Q1/Q4	1.3	2.3	1.8	1.5	1.6	1.8
Father's education Q1/Q4	2.1	1.5	1.0	1.4	1.9	1.9
Mother's education Q1/Q4	0.9	1.8	2.8	1.9	1.2	1.3
Inequality index (0–100)	54	50	49	43	44	38 / 38*

*) revised

The two remaining family background factors did not have a long-term impact. The effect of ***father's education*** become important since the 1990s; today chances of achieving tertiary education are in Austria nearly two times higher for children benefiting from this factor. The effect of ***mother's education*** proves to be important only from the 1970s to the 1980s when it was second to the effect of father's occupation.

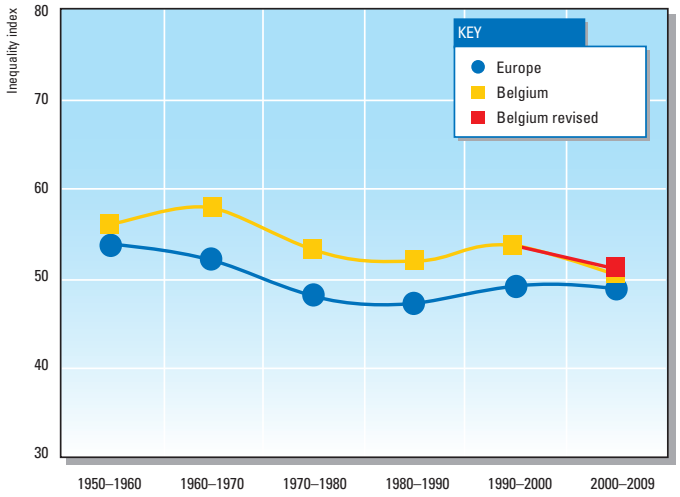
The most important family background ***factor*** in terms of access of young people to tertiary education in Austria nowadays is therefore occupation of their fathers and the least important one, on the contrary, is their mothers' education. Differences among the effects of all four factors show, however, smaller differences than earlier.

Over the last fifty years the weight of individual factors relatively strongly tilted in favour of both parents' occupation. From the 1950s to the 1960s the factor which decided almost solely whether or not a child would attain tertiary education was father's occupation, followed by mother's characteristics in the following decade, and finally by father's education nowadays.

Belgium BE

Tertiary education. In the data set for Belgium tertiary education is defined in all four ESS 1–4 data by four categories—*Hoger onderwijs korte type (HOKT) (A1), Hoger onderwijs lange type (HOLT), Universiteit and Doctoraal en postdoctoraal.*

Inequality index
Belgium 1950–2009



The proportion of adults with higher qualifications in the Belgian population confirms that Belgian higher education has entered even the universal stage. In addition, participation in tertiary education and consequently also the proportion of graduates in the relevant age group is growing and in all historical periods it has been higher than the European average.

Inequality index. The development of the index since the 1950s has followed quite closely the European average at a level quite well above it. After 2000, inequalities in access to tertiary education have decreased rapidly almost to the European average, which was due to equalizing of chances in tertiary non-university programmes.

Family background factors. The analysis of the entire Belgian sample, covering all age cohorts, according to the characteristics of the respondents' family background when they were at the age of fourteen reveals that there are three major factors that have an impact, in the long term, on the attainment of tertiary education. These factors are mother's education, father's education and father's occupation. On the other hand, the effect of mother's occupation was important only in the last two periods and even then it was far from being as strong as the three other factors.

Most often ***mother's education*** was dominant. Already in the 1950s it had the most important impact, and although its effect decreased in 1960s, in the following decades it was significant again and reached its peak value in the 1970s. At that time children of mothers with the highest level of educational attainment had more than four times higher chances of achieving tertiary education as compared to children whose mothers had the lowest qualifications. At present the chances of children benefiting from this factor are more than three and half times higher.

The next important factor that, in the long term, affects chances of attaining tertiary education is ***father's education***. Its effect was very strong already in the 1960s and then again in the 1990s when it became dominant. At that time the chances of achieving tertiary education on the part of children of fathers with the highest level of educational attainment were more than four and half times higher compared to children whose fathers have the lowest qualifications. The effect of father's education has decreased since, but remained important.

The third major family background factor in Belgium is ***father's occupation***. Its effect was the strongest of all in the 1960s when children of fathers with the highest occupational status had even almost five times higher chances of achieving tertiary education as compared to children whose fathers had the lowest occupational status. Although in the following years the effect of this factor decreased, it has remained important, and at present the chances of children benefiting from this factor are just two times higher.

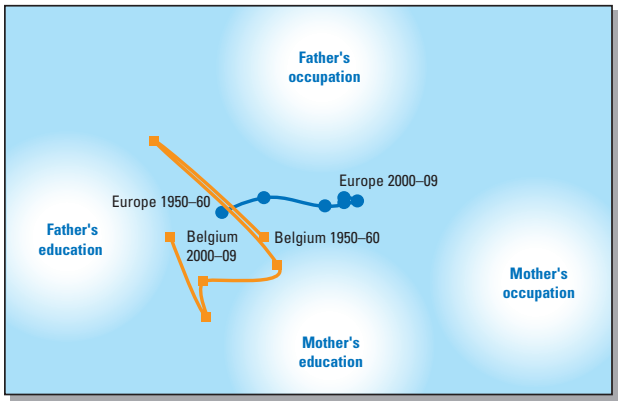
It is therefore apparent that, at present, ***the most important*** family background ***factor*** in terms of access of young people to tertiary education in Belgium is mother's education, the least important factor is mother's occupation. The differences in effect between the four factors are neither bigger nor smaller than before.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	858	1 163	1 574	1 742	1 460	1 017
Tertiary education graduates	135	273	463	623	631	361
Graduation rate (in %)	**16**	**23**	**29**	**36**	**43**	**35 / 55***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	**3.4**	**4.9**	**2.2**	**2.4**	**1.8**	**2.0**
Mother's occupation Q1/Q4	1.2	1.1	**1.6**	1.2	**1.7**	**1.5**
Father's education Q1/Q4	**2.7**	**4.8**	**2.9**	**3.5**	**4.6**	**2.7**
Mother's education Q1/Q4	**3.6**	**2.6**	**4.1**	**3.3**	**3.6**	**3.6**
Inequality index (0–100)	**56**	**58**	**54**	**52**	**54**	**51 / 51***

*) revised

Over the last fifty years the weight of individual factors relatively strongly tilted in favour of both parents' education. In the 1950s, in the 1970s and in the last period it was mother's education, and in the 1980s and in the 1990s it was father's education that was the decisive factor whether or not a child achieved tertiary education. The only change in effect occurred just in the 1960s when the occupation of father had stronger importance. However, in the following decades the effect of education of both parents prevailed again.

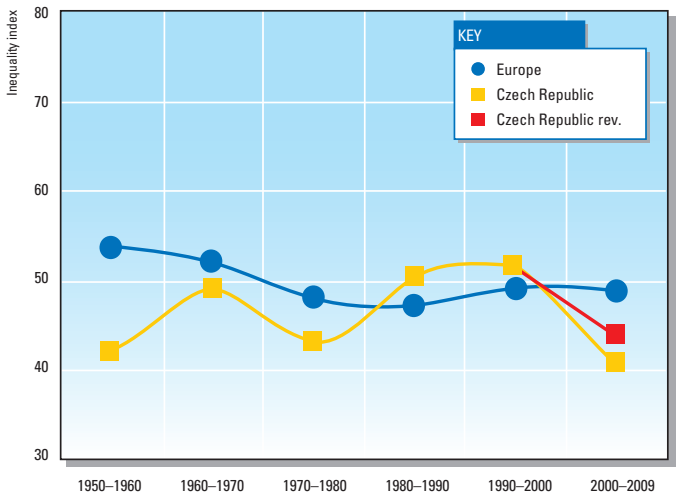
Typology of family background factors
Belgium 1950–2009



Czech Republic CZ

Tertiary education. In the data set for the Czech Republic tertiary education is defined by four categories—*Higher, Tertiary Bc., Tertiary M.A.* and *Post-graduate*, in all the three ESS-1, ESS-2 and ESS-4 data. The same categories were also used in a special national survey carried out at the turn of 2007–2008 that has replaced ESS-3 for the needs of this analysis.

Inequality index
Czech Republic 1950–2009



In terms of comparison with most other European countries the Czech Republic still shows a low proportion of adults with tertiary qualifications. However, participation in tertiary education is rapidly growing and so is the proportion of graduates in the relevant age group. It has nearly doubled over the last ten years, so that the proportion of young people with tertiary education has increased to more than one quarter.

Inequality index. The development of the index since the 1950s shows that although inequalities in access to tertiary education in the Czech Republic hover at a level very close to the European average, they show the largest fluctuations in terms of comparison with all other countries. The inequality index was far below the average in the 1950s in particular, which was undoubtedly related to the development of the social structure in the Czech Republic after the communist coup in 1948 and to the systematic restrictions on access to higher education for children from so-called "bourgeois" classes. In the 1960s inequalities rose and reached a level slightly below the European average. This level dropped significantly again in the 1970s when again children from "blue-collar" classes were given preference in admission to higher education institutions. In the following two decades the level of inequalities increased again closely above the European average. After 2000, in the context of a quantitative expansion in the number of new graduates, inequalities in access to tertiary education have decreased again in the CR and reached a level below the European average.

Family background factors. The analysis of the entire Czech sample covering all age cohorts according to the characteristics of the respondents' family background, when they were at the age of fourteen, reveals that there are two major factors that have an impact, in the long term, on the attainment of tertiary education. These factors are father's occupation and mother's occupation.

In the first three historical periods (from the 1950s until the 1970s) ***father's occupation*** had the most important impact. Although the effect of this factor gradually decreased, children of fathers with the highest occupational status had still more than four times higher chances of achieving tertiary education as compared to children whose fathers had the lowest occupational status. In the following three decades (from the 1980s up to the present) the effect of this factor continued to decrease, and at present the chances of children benefiting from this factor are less than three times higher.

The second important factor that, in the long term, affects chances of attaining tertiary education is ***mother's occupation***. While in the 1950s the effect of this factor was generally negligible, as early as in the 1960s children of mothers with the highest occupational status had approximately two times higher chances to achieve tertiary education as compared to children of mothers with the lowest occupational status. From the 1980s on the importance of mother's occupation has outweighed that of father's occupation, in the last decade the chances of children from families benefiting from this advantage have been nearly three times higher.

The remaining two family background factors in the Czech Republic have only begun to gain in importance in recent years. The effect of ***mother's education*** was insignificant still in the 1980s, while the same was true of ***father's education*** up to as late as the 1990s. At present children of parents with the highest level of educational attainment have about two times higher chances of achieving tertiary education as compared to children whose parents have the lowest qualifications.

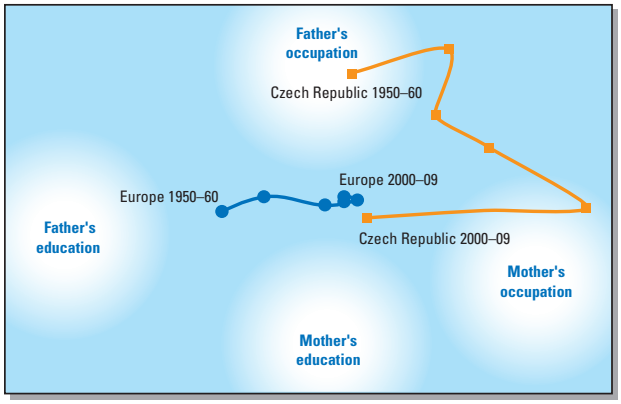
Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	885	1 390	2 475	2 461	2 666	3 637
Tertiary education graduates	73	142	301	392	419	503
Graduation rate (in %)	**8**	**10**	**12**	**16**	**16**	**14 / 26***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	**5.7**	**4.3**	**4.2**	**3.5**	**3.9**	**2.7**
Mother's occupation Q1/Q4	1.5	**2.0**	**1.7**	**3.6**	**4.5**	**2.9**
Father's education Q1/Q4	2.0	0.8	1.0	**1.8**	1.4	**1.6**
Mother's education Q1/Q4	1.0	1.1	**1.7**	1.2	**1.9**	**2.0**
Inequality index (0–100)	**42**	**49**	**43**	**51**	**52**	**41 / 44***

*) revised

It is therefore apparent that, at present, ***the most important*** family background ***factor*** in terms of access of young people to tertiary education in the Czech Republic is mother's occupation; the least important factor is father's education. However, differences in effect between the four factors have decreased substantially over time.

Over the last fifty years the weight of individual factors relatively strongly tilted in favour of both parents' occupation. From the 1950s until the 1970s it was predominantly father's occupation that was the decisive factor in whether or not a child achieved tertiary education. However, the effect of mother's occupation gradually increased, particularly from the 1980s. A larger change in effect occurred as late as the recent decade when the education of both parents has begun to gain in importance. At the same time, the effect of father's characteristics has somewhat increased again, but the effect of mother's characteristics still prevails slightly.

Typology of family background factors
Czech Republic 1950–2009



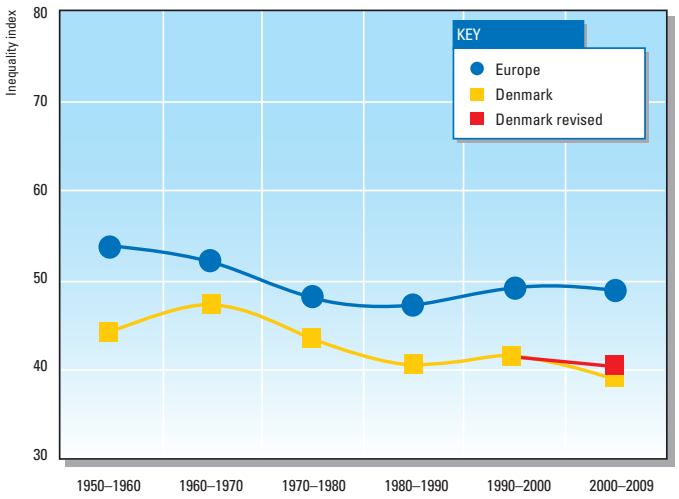
Denmark DK

Tertiary education. In the data set for Denmark tertiary education is defined by four categories in the ESS-1—*Further education of 2–3 years after upper secondary school, Further education of around 4 years after upper secondary school, Bachelors or masters degree from university and Further university education i.e. PhD.* and by following four categories in the ESS-2, ESS-3 and ESS-4 data—*Korte videregående uddannelser, Mellemlang videregående uddannelse, Lang videregående uddannelse (Universitetsuddannelser fx)* and *Overbygning på universitetseksamen, PhD., licentiat.*

The proportion of adults with tertiary qualifications in the Danish population confirms that the Danish tertiary education has entered even the universal stage. Moreover, participation in tertiary education and consequently also the proportion of graduates in the relevant age group is growing and in all historical periods it has been the highest in Europe.

Inequality index. The development of the index shows that inequalities in access to tertiary education in Denmark hovered well below the European average in all historical periods they, belonging always to the lower ones in Europe. They were closest to the European average in the 1970s; however, they moved markedly away from it in the following decades. Whereas in the 1990s the level of the European average of the inequality index increased, inequalities in Denmark continued to decrease especially thanks to evening up chances in short programmes.

Inequality index
Denmark 1950–2009



Family background factors. The analysis of the entire Danish sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that there are three major factors that have a long-term impact on the attainment of tertiary education in Denmark: father's occupation, father's education and mother's education. On the other hand, the effect of mother's occupation was important only in the 1980s and the 1990s.

In the 1950s ***father's education*** was one of the decisive factors. Children of fathers with the highest level of educational attainment had about three times higher chances of achieving tertiary education as compared to children of fathers with the lowest level of educational attainment. Since then, the effect of this factor always prevailed, and at present the chances of achieving tertiary education are almost four times higher for children benefiting from this factor.

Apart from father's education, another important factor that affects, in the long term, the attainment of tertiary education is ***father's occupation***. Its effect was strongest in the period from the 1950s to the 1960s when children of fathers with the highest occupational status had more than two and half times higher chances of achieving tertiary education as compared to children whose fathers had the lowest occupational status. The effect of father's occupation played less important role in the following decades, at present the chances of children from families benefiting from this advantage are almost two times higher.

The third important factor is ***mother's education***. Its effect was strongest in the 1970s when the chances of achieving tertiary education were nearly three times higher for children of mothers with the highest level of educational attainment as compared to children of mothers with the lowest level of educational attainment. The effect of this factor decreased in the following years, while both father's occupation and father's education gradually became more important. At present its effect is relatively weak.

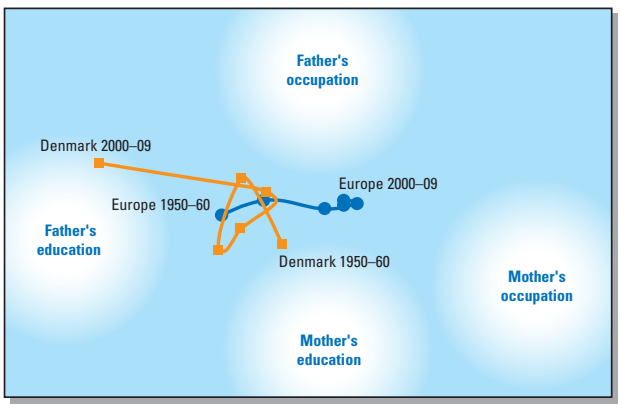
Today, ***the most important*** family background ***factor*** in terms of access of young people to tertiary education in Denmark is father's education, and far less father's occupation. Mother's characteristics are still less important in this respect. At the same time, differences in effect among all four factors are neither markedly bigger nor smaller than earlier.

In the 1950s it was predominantly both parents' education that was the decisive factor in whether or not a child achieved tertiary education. During the 1960s the effect of mother's education decreased and father's characteristics began to gain prominence. An indication of change in effect of individual factors occurred only in the 1980s when the effect of both mother's characteristics was important although still overshadowed by father's characteristics.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	742	1 446	1 919	1 878	1 762	1 047
Tertiary education graduates	179	463	767	843	871	474
Graduation rate (in %)	**24**	**32**	**40**	**45**	**49**	**45 / 63***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	**2.7**	**2.5**	**1.9**	**1.4**	**1.6**	**1.8**
Mother's occupation Q1/Q4	1.4	1.4	1.2	**1.6**	**1.6**	1.2
Father's education Q1/Q4	**3.2**	**3.3**	**2.9**	**3.3**	**3.9**	**3.8**
Mother's education Q1/Q4	**1.7**	**1.9**	**2.9**	**2.1**	**1.6**	**1.5**
Inequality index (0–100)	**44**	**47**	**43**	**40**	**41**	**39 / 40***

*) revised

Typology of family background factors
Denmark 1950–2009



Estonia EE

Tertiary education. In the data set for Estonia tertiary education is defined by four categories in the ESS-2 data—*Professional secondary/technical education after secondary education, Higher education, Master's degree* and *Candidate of sciences/doctor's degree*, by five categories in the ESS-3 data—*Higher vocational education, Professional higher education (diploma study), Higher education, Degree study* and *Doctoral study*, and by seven categories in the ESS-4 data—*Vocational higher education, Applied higher education (diploma study), Bachelor-three-year studies (higher education), Bachelor-more than three-year studies, Two-year master studies, Scientific degree of master* and *PhD/ doctor/all other scientific degrees higher than scientific degree of master.*

The proportion of adults with tertiary education in the Estonian population confirms that the Estonian tertiary education was rather elitist and is mass now. Although participation in tertiary education, and consequently also the proportion of graduates in the relevant age group, is growing, it still remains near the European average.

Inequality index. The development of the index since the 1950s shows that inequalities in access to tertiary education in Estonia were at first far lower than the European average, in the 1950s they even belonged to the lowest ones in Europe. Although influenced by certain fluctuations, they were growing in the following decades (with the exception of the 1980s), and in the recent years they have been significantly higher than the European average. The rapid growth of the inequality index level has been quite surprisingly caused by increasing inequalities in short programmes at the university level.

Family background factors. The analysis of the entire Estonian sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that there are two major factors in Estonia that have a long-term impact on the attainment of tertiary education: father's education and mother's education. The remaining family background factors were important only in some periods.

In the first three historical periods (from the 1950s to the 1980s) it was mostly ***father's education*** that proved to be a decisive factor. In the 1950s children of fathers with the highest level of educational attainment had almost six times higher chances of achieving tertiary education as compared to children of fathers with the lowest level of educational attainment. Although the weight of this factor was decreasing, it remained important (with the exception of the 1990s), and today the chances of children benefiting from this advantage are almost three times higher.

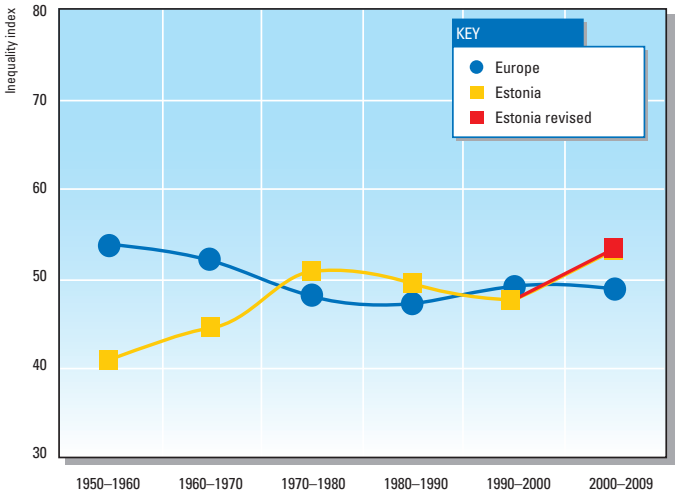
Whereas in the 1950s the effect of ***mother's education*** was unimportant, as early as the 1960s children of mothers with the highest level of educational attainment had more than three times higher chances of achieving tertiary education as compared to children of mothers with the lowest level of educational attainment. In the following decades the effect of mother's education remained important and since the 1990s it has surpassed the effect of father's education. At present the chances of children from families benefiting from this factor are almost three times higher.

The two remaining family background factors were important only in some periods and it is not possible to speak about their long-term impact. The effect of ***father's occupation*** was strongest in the 1990s, at present the chances of achieving tertiary education in Estonia are one and half times higher for children benefiting from this factor. ***Mother's occupation*** proves to be important only in the period from the 1980s to the 1990s when it was relatively strong and the chances of achieving tertiary education were almost three times higher for children of mothers with the highest occupational status.

At present, ***the most important*** family background ***factor*** in terms of access of young people to tertiary education in Estonia is their mothers' education, the least important factor is their fathers´ occupation. However, differences in effect between the four factors have decreased over time.

Over the last fifty years the weight of individual factors relatively strongly tilted in favour of both parents' education. From the 1950s to the 1980s it was predominantly father's education that was the decisive factor in whether or not a child would attain tertiary education, but later there was a gradual weakening of its effect and, at the same time, an increase in the effect of mother's education, which is decisive nowadays. A shift in the effects of individual factors occurred only during the 1990s when both father's occupation and mother's occupation came to the fore.

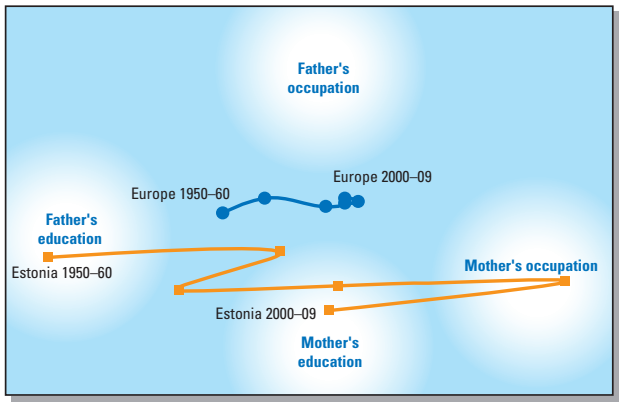
Inequality index
Estonia 1950–2009



Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	761	1 051	1 189	1 253	1 125	903
Tertiary education graduates	125	229	323	387	357	253
Graduation rate (in %)	**16**	**22**	**27**	**31**	**32**	28 / 39*
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	0.8	1.0	1.1	1.3	1.7	1.6
Mother's occupation Q1/Q4	1.7	1.5	1.8	2.0	2.6	2.2
Father's education Q1/Q4	5.6	2.7	4.8	3.2	1.8	2.7
Mother's education Q1/Q4	1.6	3.6	2.5	3.0	2.8	2.9
Inequality index (0–100)	**41**	**44**	**51**	**49**	**47**	52 / 52*

*) revised

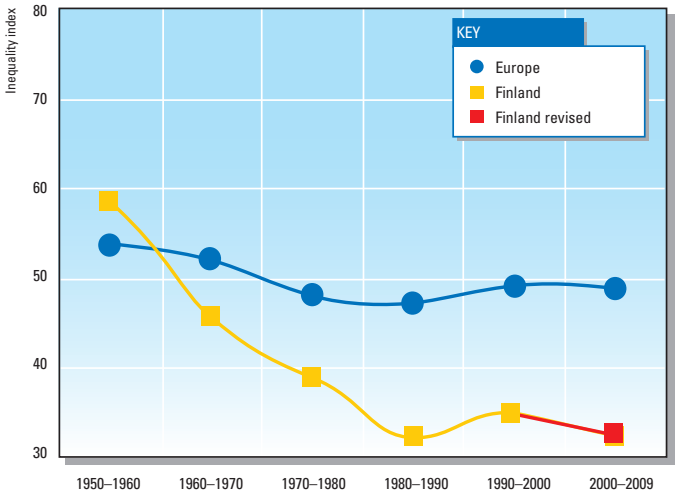
Typology of family background factors
Estonia 1950–2009



Finland FI

Tertiary education. In all data sets for Finland (ESS-1, ESS-2, ESS-3 and ESS-4) tertiary education is defined just by two categories of the simplified international classification—*First stage of tertiary and Second stage of tertiary.*

Inequality index
Finland 1950–2009



The proportion of adults with higher qualifications in the Finnish population confirms that Finnish higher education has entered even the universal stage. In addition, participation in tertiary education and consequently also the proportion of graduates in the relevant age group is growing, from the 1960s it has been higher than the European average and so it belongs to the highest ones among countries explored.

Inequality index. .The development of the index since the 1950s shows that inequalities in access to tertiary education in Finland considerably differ from the European average and that they have been almost constantly decreasing. With the exception of the first decade explored, inequalities in Finland have always been well below the average, and since the 1970s inequalities in the approach to tertiary education in Finland have even belonged among the lowest ones.

Family background factors. The analysis of the entire Finnish sample, covering all age cohorts, according to the characteristics of the respondents' family background when they were at the age of fourteen reveals that there are three major factors that have an impact, in the long term, on the attainment of tertiary education in Finland: father's occupation, father's education and mother's education. On the other hand, the effect of mother's occupation did not prove to be important in any of the six historical periods.

In the first three historical periods (from the 1950s to the 1970s), predominantly the effect of m***other's education*** was decisive. Although it was gradually decreasing, children of mothers with the highest level of educational attainment still had in the 1970s more than three times higher chances of achieving tertiary education as compared to children whose mothers had the lowest qualifications. In the next two decades, the decrease was continuing, and today chances of children benefiting from this factor are approximately two times higher.

The next important factor that, in the long term, affects chances of attaining tertiary education in Finland is ***father's education***. While in the 1950s its impact was not yet important, already in the 1960s children of fathers with the highest level of educational attainment had two and half times higher chances of achieving tertiary education as compared to children whose fathers had the lowest qualifications. Since the 1980s the effect of father's education began to even up the effect of mother's education. At present, chances of children that come from families which benefit from this factor are almost two times higher.

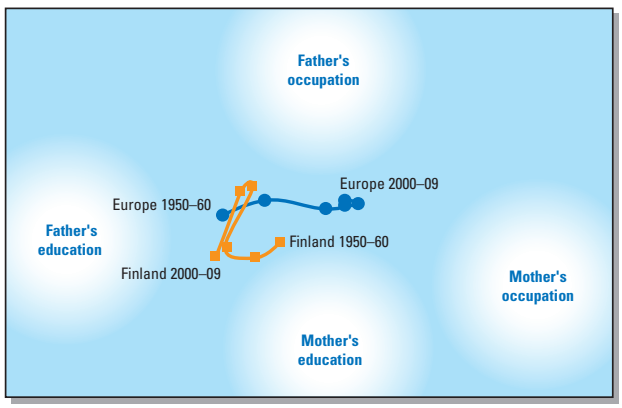
The third significant factor in Finland is ***father's occupation***. Its impact was most considerable in the 1950s, when chances of attaining tertiary education was even almost four times higher for children of fathers with the highest occupational status than for children whose fathers had the lowest occupational status. In the following decades (from the 1960s to the 1990s) the level of effect of father's occupation decreased approximately to a half, and today the differences caused by this factor of family background are already unimportant.

It is therefore apparent that ***the most important factors*** of family background in terms of access of young people to tertiary education in Finland today are father's education and mother's education. Occupation of both parents is not so important in this respect. Nevertheless, the effects of all four factors show smaller differences than earlier.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	1 054	1 788	2 467	2 493	2 227	1 666
Tertiary education graduates	114	325	700	930	1 007	722
Graduation rate (in %)	**11**	**18**	**28**	**37**	**45**	43 / **53***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	**3.6**	**2.0**	**1.9**	**1.7**	**1.9**	1.3
Mother's occupation Q1/Q4	1.4	**1.6**	1.3	1.2	**1.4**	1.2
Father's education Q1/Q4	**2.0**	**2.4**	**2.0**	**1.9**	**2.0**	**1.9**
Mother's education Q1/Q4	**4.0**	**3.5**	**3.3**	**2.1**	**1.8**	**2.2**
Inequality index (0–100)	**59**	**46**	**39**	**32**	**35**	32 / **32***

*) revised

Typology of family background factors
Finland 1950–2009

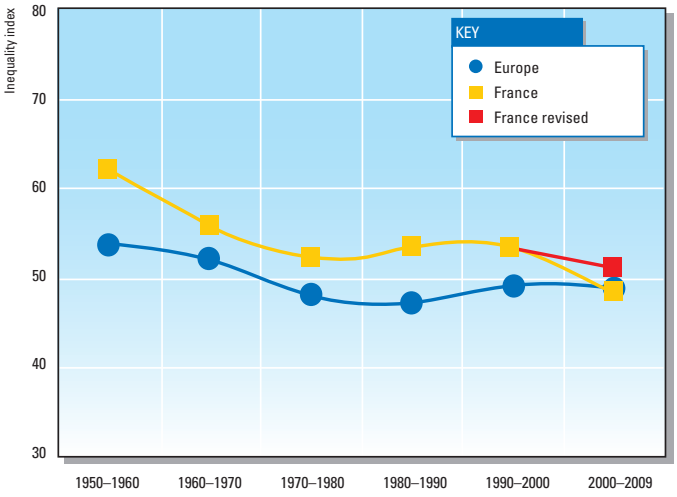


In the 1950s, father's occupation and mother's education were the factors decisive for attaining tertiary education. During the 1960s and the 1970s the effect of father's occupation considerably decreased and education of both parents became more dominant. In the following decade, however, the effect of mother's education was quite markedly weakened, and father's characteristic became more prominent. In the last decade, father's occupation has become as little important as mother's occupation was all the time and only education characteristics matter, the father's one less than the mother's one.

France FR

Tertiary education. In the data set for France tertiary education in the ESS-1 and ESS-2 data is defined by two categories—*Diplôme universitaires du premier cycle (DEUG)/Diplôme universitaire de technologie (DUT)/ Brevet de technicien supérieur (BTS)/Certificat d'aptitude pédagogique and Diplôme universitaire des deuxième et troisième cycle/ Doctorat/CAPES/Agrégation/Diplôme de grandes écoles*. In the ESS-3 data the second mentioned category was divided into two separate ones—*Diplôme universitaire du deuxième cycle/CAPES/Diplôme des grandes écoles and Diplôme universitaire du troisième cycle (DEA, DESS)/Agrégation/Doctorat.* Finally in the ESS-4 data there are even nine categories for tertiary education—*Diplôme de moniteur-éducateu/éducateur technique spécialisé, Diplôme de la capacité en droit/diplôme d'accès aux études, Diplôme universitaire de premier cycle (DEUG)/ diplôme universitaire, Diplôme universitaire de deuxième cycle (licence, maîtrise), Diplômes professionnels divers (notaire, architecte, vétérinaire), Diplôme universitaire de troisième cycle (DES, DESS, master), DEA/master deuxième année recherche, Autres doctorats (médecine, dentaire, pharmacie, vétérinaire)* and *Doctorat.*

Inequality index
France 1950–2009



The proportion of adults with tertiary qualifications in the French population confirms that the French tertiary education was very elitist especially from the 1950s to the 1970s. On the contrary, it has moved to the universal stage in the recent years. Participation in tertiary education and consequently also the proportion of graduates in the relevant age group has hovered high above the European average since the 1990s, is still growing and belongs to the highest ones among the examined countries.

Inequality index. The development of the index since the 1950s shows that inequalities in access to tertiary education have always been in France very close to the European average. The inequality index was highest in the 1950s and in the next decades inequalities in France nearly copied their European development. Minor differences occurred in the 1990s and also at present, when the more pronounced decrease in inequalities in France has been caused by evening up chances in long programmes.

Family background factors. The analysis of the entire French sample covering all age cohorts according to the characteristics of the respondents' family background, when they were at the age of fourteen, reveals that there are two major factors that have a long-term impact on the attainment of tertiary education in France: father's education and mother's education. On the other hand, the effect of mother's occupation did not prove to be important in any of the six historical periods, and the effect of father's occupation has become important only in the last decade.

In the 1950s ***father's education*** had the most important impact. Children of fathers with the highest level of educational attainment had even six times higher chances of achieving tertiary education in that time as compared to children of fathers with the lowest level of educational attainment. In the next decades the level of this effect decreased almost to a half (and was exceeded then by the level of mother's education effect), afterwards it has fluctuated. At present the effect of father's education is weakened again and the second important factor, in the long term, comes to the fore—mother's education.

The impact of ***mother's education*** at first increased from the 1950s to the 1970s, children of mothers with the highest level of educational attainment had at first about two and half times higher and later even more than five times higher chances of achieving tertiary education in that time as compared to children of mothers with the lowest level of educational attainment. Although in the 1970s the effect of mother's education weakened, mother's education has been increasing since and remained a decisive family background factor. The chances of children from families benefiting from this advantage are here almost five times higher today.

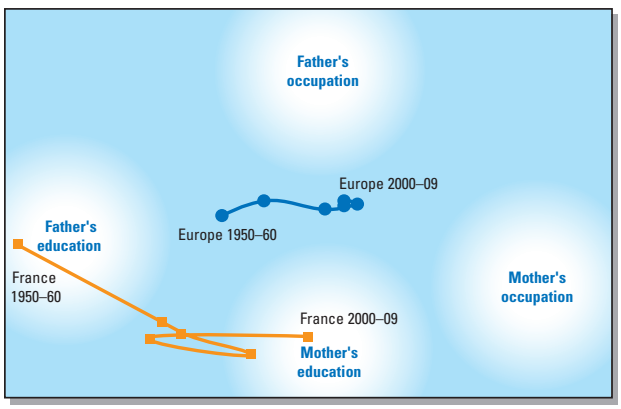
Today, mother's education is followed by father's occupation and education , the mother's occupation being not so important. At the same time, differences among all four factors are not markedly larger or smaller than earlier.

Over the last fifty years the weight of individual factors relatively strongly tilted in favour of both parents' education. In the 1950s it was predominantly father's education that was the decisive factor in whether or not a child achieved tertiary education, but already in the following decade the effect of mother's education became stronger and remained to be so, although the relative weight of respective factors was slightly changing.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	1 021	1 362	1 660	1 682	1 674	867
Tertiary education graduates	114	242	392	512	737	374
Graduation rate (in %)	**11**	**18**	**24**	**30**	**44**	**43 / 57***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	2.0	1.7	1.9	1.9	1.8	2.4
Mother's occupation Q1/Q4	1.8	1.0	1.0	1.0	1.3	1.8
Father's education Q1/Q4	6.0	3.2	4.4	3.5	5.0	2.3
Mother's education Q1/Q4	2.6	5.3	3.2	4.1	4.4	4.8
Inequality index (0–100)	62	56	52	53	53	48 / 51*

*) revised

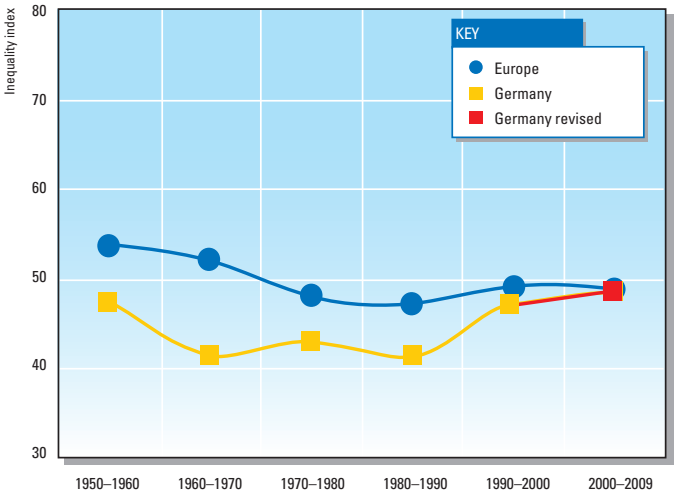
Typology of family background factors
France 1950–2009



Germany DE

Tertiary education. In Germany, it is possible to achieve tertiary education mainly through the study at state and private universities (approximately 70 % of all students of tertiary education), but also through the study at higher professional institutions, *Fachhochschulen* (at present more than 28 % of students) and *Akademien* and *Kollegs* (less than 2 % of tertiary education students). In the data set for Germany tertiary education is defined by categories *First stage of tertiary* and *Second stage of tertiary* in the ESS-1 and ESS-4 data and by categories *Technical college(Fachhochschule)* and *University degree/PhD(Uniabschluss/ Doktortitel)* in the ESS-2 and ESS-3 data.

Inequality index
Germany 1950–2009



The proportion of adults with higher qualifications in the German population confirms that German tertiary education has already moved to the mass stage. Participation in tertiary education was at first above the average and slightly growing; however, at present it is rather stagnating and at a level under the European average.

Inequality index. The development of the index since the 1950s shows that inequalities in access to tertiary education in Germany were at a level rather different from the European average, and at the same time changed a lot during the course of time. Inequality index was significantly under the average from the 1950s to the 1980s, in the 1960s it was even the lowest in Europe. In the 1990s inequalities were growing faster in Germany than in Europe, coming closer to the level of the European average and even exceeding it in the period after 2000. A noticeable rise of the inequality index level from the 1980s to the present has been caused by increasing of inequalities at all levels of tertiary education, especially in short programmes at university level.

Family background factors. The analysis of the entire German sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that there are three major factors that have a long-term impact on the attainment of tertiary education in Germany: father's education, father's occupation and mother's education. The effect of the mother's occupation has been increasing only since the 1970s and even then it has stayed rather in the shadow of the remaining family background factors.

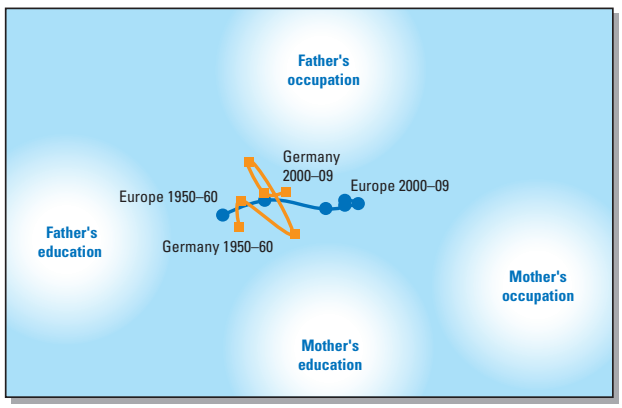
Most often, ***father's occupation*** has been the decisive factor. Although it was gradually decreasing in the period from the 1950s to the 1970s, children of fathers with the highest occupational status still had about two times higher chances of achieving tertiary education as compared to children whose fathers had the lowest occupational status. The importance of father's occupation then significantly increased over the 1980s and continued in the following decades. At present, chances of children from families benefiting from this advantage have moved to be two and half times higher .

The second major factor in Germany is ***mother's education***. Its impact was significant in the 1950s and the 1960s, when children of mothers with the highest level of educational attainment had about three times higher chances of achieving tertiary education compared to children whose mothers had the lowest qualifications. In the following decades (from the 1970s to the 1990s) the level of the effect of mother's education decreased gradually nearly to a half, but today chances of children benefiting from this factor are almost three times higher.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	1 234	2 351	2 745	3 367	2 989	1 572
Tertiary education graduates	208	521	744	895	756	299
Graduation rate (in %)	**17**	**22**	**27**	**27**	**25**	**19 / 31***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	**3.5**	**2.2**	**2.1**	**2.6**	**2.8**	**2.5**
Mother's occupation Q1/Q4	1.0	**1.5**	**1.7**	**1.8**	**1.8**	**2.1**
Father's education Q1/Q4	**2.7**	**2.1**	**2.8**	**2.3**	**2.7**	**1.9**
Mother's education Q1/Q4	**3.3**	**2.6**	**2.0**	**1.6**	**1.8**	**2.9**
Inequality index (0–100)	**47**	**41**	**43**	**41**	**47**	**48 / 48***

*) revised

Typology of family background factors
Germany 1950–2009



From the 1950s to the 1990s, that is almost till the present, ***father's education*** proved to be important, often children of fathers with the highest level of educational attainment had almost three times higher chances of achieving tertiary education when compared to children whose fathers had the lowest qualifications. In the period after 2000 the effect of this factor has decreased a little again and today the chances of children benefiting from this factor are less than two times higher. At present, father's education is the least important family background factor in attainment of tertiary education.

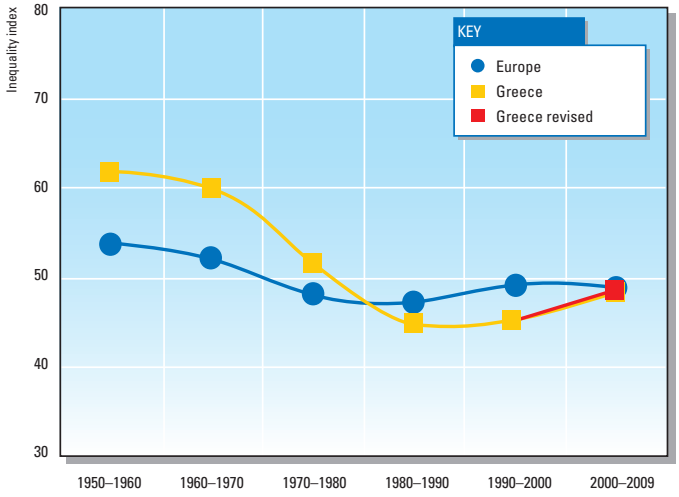
Today, ***the most important*** family background ***factor*** in access of young people to tertiary education in Germany is their mothers' education and, on the other hand, the least important one is their fathers´ education. Differences among the effects of all four factors are not considerably higher or lower than earlier.

In the 1950s, predominantly the education of both parents decided whether or not a child would attain tertiary education. Over the 1970s the effect of mother's education decreased and the weight of individual factors more strongly tilted in favour of fathers' characteristics. Today, however, the effect of mother's characteristics increased and finally prevailed.

Greece GR

Tertiary education. In the data set for Greece tertiary education is defined by three categories—*Post secondary/polytechnic, University degree* and *Post graduate degree* in the ESS-1 and ESS-2 data. Greece did not participate in the third round of the survey but participated in the last fourth round where tertiary education is defined by four slightly different categories—

Inequality index
Greece 1950–2009



Post-compulsory secondary education/non-tertiary education, Higher education/ university diploma holders/technical education, MA Degree and PhD Degree.

The proportion of adults with higher qualifications in the Greek population confirms that Greek higher education was very elitist especially from the 1950s to the 1970s, gradually entering the mass stage in the following years. Participation in tertiary education and consequently also the proportion of graduates in the relevant age group is growing; however, it still hovers below the European average, the tertiary sector in Greece belongs rather to the smallest ones among the countries examined.

Inequality index. The development of the index shows that inequalities in access to tertiary education in Greece hovered still quite close to the European average, although they were affected by slight fluctuations. Whereas inequalities in Greece belonged to the highest ones in Europe in the 1950s and 1960s, they gradually decreased below the average in the 1980s and 1990s. The level of the inequality index then has grown again in the period after 2000, in contrast with the development in Europe. This growth has been caused by increasing inequalities mainly in short programmes at university level.

Family background factors. The analysis of the entire Greek sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that father's education has had a long-term impact on the attainment of tertiary education in Greece. The remaining family background factors were important only in some periods and had only lesser impact.

Father's education dominated throughout but for the last decade. Its effect reached peak values in the 1960s and 1970s, and remained at a high level afterwards. Nowadays, children of fathers with the highest level of educational attainment have about two and half times higher chances of achieving tertiary education as compared with children of fathers with the lowest level of educational attainment.

Although the effect of ***mother's occupation*** ranked second, it was far less important. In the 1950s to the 1970s, children of mothers with the highest occupational status in that time had about two and half times higher chances of achieving tertiary education as compared to children whose mothers had the lowest occupational status. In the following decades this impact was negligible, but has become dominant in the period after 2000 when the chances of children benefiting from this advantage are more than three times higher.

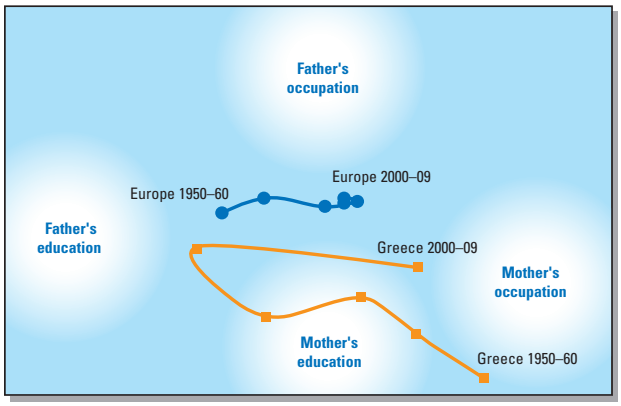
The effect of ***father's occupation*** was still weaker than the effect of mother's occupation. At present the chances of achieving tertiary education are more than two times higher for children from families benefiting from this advantage.

The effect of ***mother's education*** was strongest in the 1950s when it was more or less equal to that of both occupational factors and children of mothers with the highest level of educational attainment had nearly two and half times higher chances of achieving tertiary education as compared to children of mothers with the lowest level of educational attainment. This effect decreased in the following decades, and at present it is the weakest of all.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	1 153	1 433	1 359	1 671	1 845	1 078
Tertiary education graduates	61	141	224	389	557	339
Graduation rate (in %)	**5**	**10**	**16**	**23**	**30**	**31 / 42***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	2.2	2.1	1.8	1.8	1.5	2.1
Mother's occupation Q1/Q4	2.5	2.1	2.6	1.5	1.5	3.1
Father's education Q1/Q4	3.4	8.6	7.0	4.4	4.1	2.4
Mother's education Q1/Q4	2.4	2.2	1.1	1.3	1.6	1.7
Inequality index (0–100)	**62**	**60**	**51**	**44**	**45**	**49 / 49***

*) revised

Typology of family background factors
Greece 1950–2009



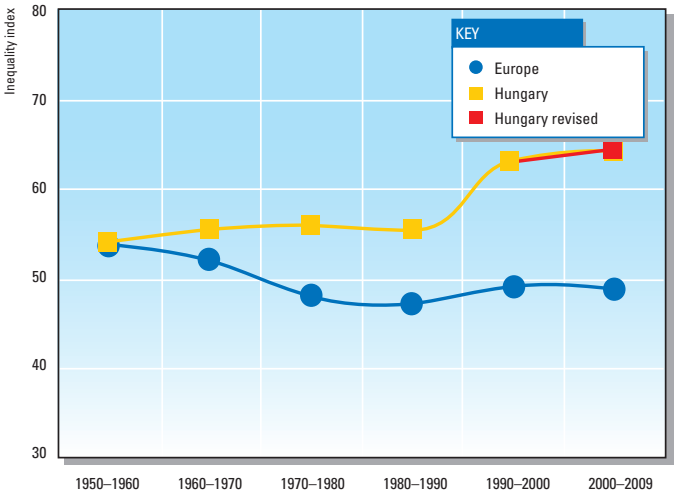
The most important family background ***factor*** in terms of access of young people to tertiary education in Greece today is their mothers' occupation; the least important factor is their mothers' occupation. At the same time, the effects of all four factors are important, showing markedly smaller differences than earlier.

Over the last fifty years the weight of individual factors relatively strongly tilted in favour of both parents' education, in fact of father's education. However, in the most recent period the occupation characteristics have become important as well, and surpassed those of education.

Hungary HU

Tertiary education. In the data set for Hungary tertiary education is defined by four categories—*Diploma in college, Diploma in university, Post-graduate diploma holder* and *PhD holder* in all four ESS 1–4 data.

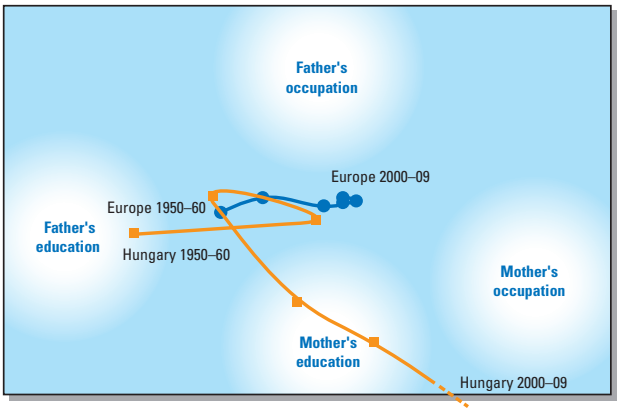
Inequality index
Hungary 1950–2009



The proportion of adults with tertiary qualifications in the Hungarian population confirms that Hungarian tertiary education was very elitist till the 1990s. Participation in tertiary education and consequently also the proportion of adults in the relevant age group is growing and tertiary education has already entered the mass stage; however, it still hovers deep below the European average and the Hungarian tertiary sector belongs to the smallest ones when compared with other countries examined.

Inequality index. The development of the index shows that inequalities in access to tertiary education in Hungary hovered very closely to the European average at first. Whereas the European average sank to a lower level in the 1960s and the 1970s and more or less has remained at it since, inequities in Hungary remained stable and then grew in the 1990s. The rapid growth of the inequality index level in the recent years has been surprisingly caused by increasing of inequalities in short programmes at university level.

Typology of family background factors
Hungary 1950–2009



Family background factors. The analysis of the entire Hungarian sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that there are two major factors in Hungary which have a long-term impact on the attainment of tertiary education: father's education and mother's education. The remaining family background factors are important only in some periods.

In the first three decades the effect of ***father's education*** was the most important factor, and children of fathers with the highest level of educational attainment had three and half times higher chances of achieving tertiary education as compared to children of fathers with the lowest level of educational attainment. This effect decreased during the 1980s, and although it has returned to a former level, it has been overshadowed at present, by the effect of both mother's factors.

The effect of ***mother's education***, negligible in the 1950s, became most important in the 1980s, when children of mothers with the highest level of educational attainment had more than four times higher chances of achieving tertiary education as compared to children of mothers with the lowest level of educational attainment. In the next decades the level of this effect slightly decreased. At present it ranks as the second, chances of children from families benefiting from this advantage being almost four times higher.

The effect of ***father's occupation*** was important from the 1950s to the 1980s when it ranked as the second, and in the 1980s the chances of achieving tertiary education in Hungary were more than two times higher for children benefiting from this factor. In the last two periods it has become the weakest factor. The effect of ***mother's occupation*** was relatively weak till the 1980s, afterwards it has increased. At present it has become the strongest one, the chances of achieving tertiary education being almost four and half times higher for children of mothers with the highest occupational status.

The most important family background ***factor*** in terms of access of young people to tertiary education in Hungary is their fathers' education; the least important ones are both occupational factors. The effects of all four factors show, however, bigger differences than earlier.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	955	1 472	1 859	1 732	1 615	1 261
Tertiary education graduates	101	198	296	273	286	224
Graduation rate (in %)	**11**	**13**	**16**	**16**	**18**	18 / **29***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	2.2	2.7	3.1	2.3	1.5	1.4
Mother's occupation Q1/Q4	2.0	1.9	1.9	1.0	2.9	4.4
Father's education Q1/Q4	2.6	3.0	3.5	2.1	3.5	3.5
Mother's education Q1/Q4	1.6	1.4	2.2	4.4	3.5	3.7
Inequality index (0–100)	**54**	**55**	**56**	**56**	**63**	64 / **64***

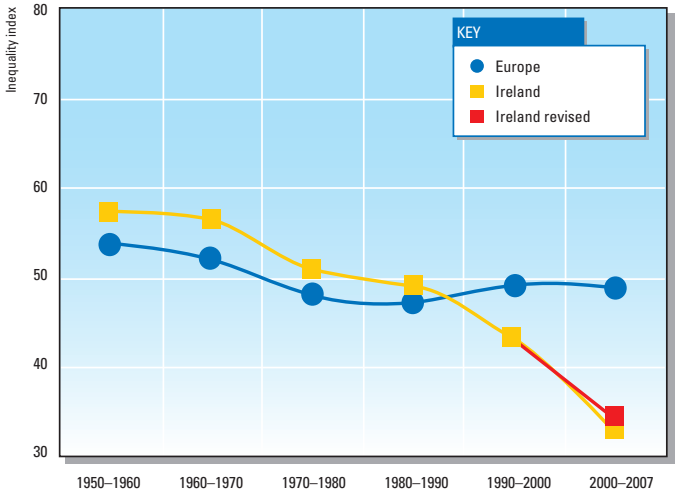
*) revised

In the 1950s father's education was the most decisive factor, closely followed by father's occupation, in whether or not a child would attain tertiary education. In the following decades the effect of father's occupation was gradually weakened, the effect of father's education stayed at the same level, but mother's education and also mother's occupation have surpassed them.

Ireland IE

Tertiary education. In all data sets for Ireland (ESS-1, ESS-2 and ESS-3) tertiary education is defined by three categories—*Diploma/certificate, Primary degree* and *Postgraduate/higher degree*. ESS-4 data for Ireland will be available in the autumn of 2010.

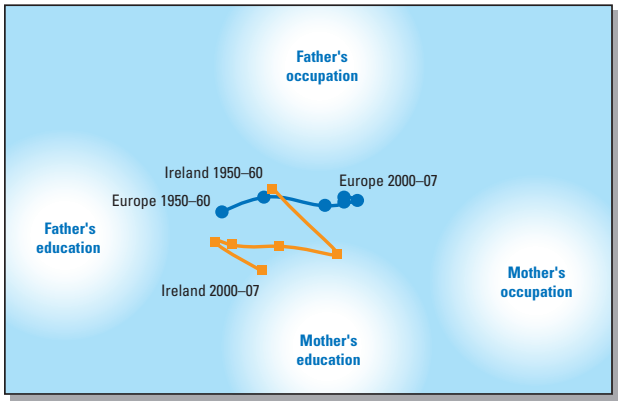
Inequality index
Ireland 1950–2007



The proportion of adults with higher qualifications in the Irish population confirms that Irish higher education has entered the universal stage. Participation in tertiary education and consequently also the proportion of graduates in the relevant age group has been higher than the European average since the 1980s, is still growing and belongs to the highest ones among the countries under review.

Inequality index. The development of the index shows that inequalities in access to tertiary education in Ireland nearly copied their Pan-European development till the 1980s. A change occurred only during the 1990s, when inequalities slightly growing in Europe markedly declined in Ireland. The rapid decline of inequalities in Ireland has been continuing also in the period after 2000, caused particularly by equalizing of chances in tertiary non-university programmes. Among the countries explored in last years, Ireland belongs to those having the lowest Inequality index.

Typology of family background factors
Ireland 1950–2007



Family background factors. The analysis of the entire Irish sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that, in the long term, three major factors have an impact on the attainment of tertiary education: father's occupation, father's education and mother's education. On the other hand, the effect of the mother's occupation was important only in the 1960s and even then it was overshadowed by the three other factors of family background.

Father's occupation had the most important impact in the 1950s, when a chance to gain tertiary education was even more than four times higher for children of fathers with the highest occupational status than for children whose fathers had the lowest occupational status. Although the effect of this factor later decreased, it stayed at a relatively high level but for the last two periods.

The next important factor that, in the long term, affects chances of attaining tertiary education is ***father's education***. Its effect was strongest in the 1990s, when the children of the most educated fathers had almost a four times higher chance of achieving tertiary education, as opposed to children of less educated fathers. At present, chances of children who come from the benefited families are still roughly two times higher.

The third important factor in Ireland is ***mother's education***. Its impact was strongest in the 1960s and the 1980s, when children of mothers with the highest level of educational attainment had more than three times higher chances of achieving tertiary education as compared to children whose mothers had the lowest qualifications. In the following decades the effect of mother's education has decreased, and at present the chances of children benefiting from this factor are less than two times higher.

The most important family background ***factors*** in terms of access of young people to tertiary education in Ireland today are therefore mother's and father's education and also father's occupation. On the other hand, occupation of mother appears unimportant in this respect. Differences in the effect of the four factors are neither markedly bigger nor smaller than earlier.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2007
Number of respondents	844	1 296	1 414	1 480	1 454	746
Tertiary education graduates	101	196	291	412	531	270
Graduation rate (in %)	**12**	**15**	**21**	**28**	**37**	**36 / 55***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	4.1	3.6	3.1	2.5	1.8	1.9
Mother's occupation Q1/Q4	2.0	1.6	1.2	1.1	1.4	1.3
Father's education Q1/Q4	2.4	3.1	3.1	2.3	3.9	1.9
Mother's education Q1/Q4	2.6	3.7	2.6	3.1	1.8	1.7
Inequality index (0–100)	**57**	**56**	**51**	**49**	**43**	**33 / 34***

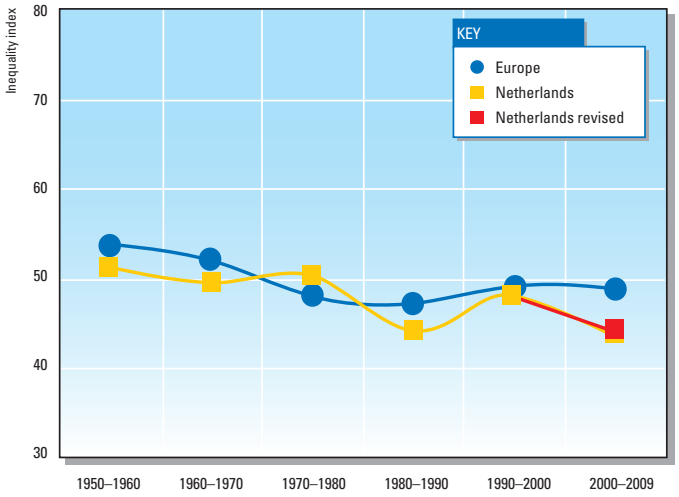
*) revised

Over the last fifty years the relative weight of individual factors has changed. At the beginning, in the 1950s, father's characteristics were dominant; his occupation was closely followed by his education. The development in next decades, however, changed the situation. The strength of father's occupation was surpassed by the impact of mother's education. In the following decades, father's education was gradually gaining prominence. While the three factors already mentioned were evening up to a degree, the impact of mother's occupation remained very weak throughout. In the last decade the impact of all factors has been diminished which corresponds to a marked decrease of the inequality index.

Netherlands NL

Tertiary education. In all data sets for the Netherlands (ESS-1, ESS-2, ESS-3 and ESS-4) tertiary education is defined by four categories—*Tertiary professional education (HBO)*, *Tertiary scientific education/university*, *Tertiary post-scientific education (teachers, doctors)* and *Second stage of tertiary education/Ph.D. education*.

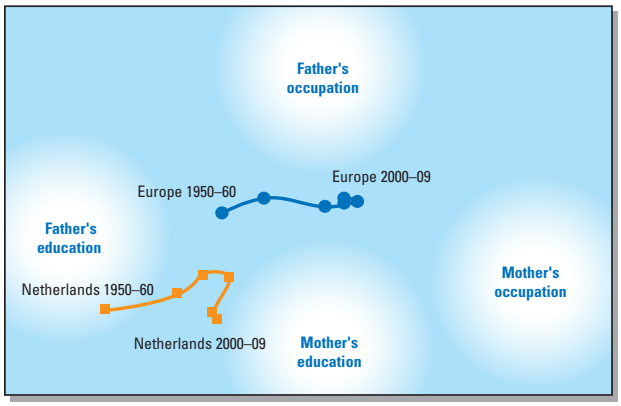
Inequality index
Netherlands 1950–2009



The proportion of adults with higher qualifications in the Dutch population confirms that Dutch higher education is at the beginning of the universal stage. Especially in the 1950s and 1960s the participation in tertiary education was high above the European average. Although in the following periods the participation in tertiary education has been further increasing, it has been drawing closer to the level of the European average.

Inequality index. The development of the index shows that inequalities in access to tertiary education in the Netherlands have been almost copying the European average at a slightly lower level but for one exception. A relatively large fluctuation occurred in the 1970s, when the Dutch Inequality index stayed at the same level and thus overtook the European average. The more pronounced decrease in inequalities in the period after 2000 has been caused by evening up chances in tertiary non-university programmes.

Typology of family background factors
Netherlands 1950–2009



Family background factors. The analysis of the entire Dutch sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that there are two major factors that have a long-term impact on the attainment of tertiary education in the Netherlands: father's education and mother's education. On the other hand, the effect of the mother's occupation did not prove to be important in any of the six historical periods.

Father's education has been dominant throughout. In all periods but the last one, the chances of achieving tertiary education on the part of children of fathers with the highest level of educational attainment were about four times higher compared to children whose fathers had the lowest qualifications. Although they have sunk to less than three times in the last period, this factor has remained to be the strongest one.

The effect of ***mother's education*** follows more or less closely behind father's education. In the 1990s, children of mothers with the highest level of educational attainment had even four times higher chances of achieving tertiary education as compared to children of mothers with the lowest qualifications. At present chances of children from families benefiting from this advantage are almost two and half times higher.

The remaining family background factor—***father's occupation***—was important in the Netherlands only in the 1960s and 1970s, and even then it was overshadowed by the education of both parents. Chances of achieving tertiary education were then approximately two times higher for children of fathers with the highest occupational status as compared to children of fathers with the lowest occupational status.

The most important family background ***factor*** in terms of access of young people to tertiary education in the Netherlands nowadays is father's education, which is followed by father's education. On the other hand, occupation of both parents has had the smallest impact. Differences among the effects of all factors are neither significantly bigger nor smaller than earlier.

In the last fifty years the weight of individual factors relatively strongly tilted in favour of characteristics of education of both parents. From the 1960s to the 1980s it was predominantly father's education that was the decisive factor in whether or not a child would attain tertiary education. Later the effect of mother's education has increased. Although in the 1960s and 1970s the effect of father's occupation slightly increased, the effect of characteristics of both parents' education was unambiguously prevailing even in this period.

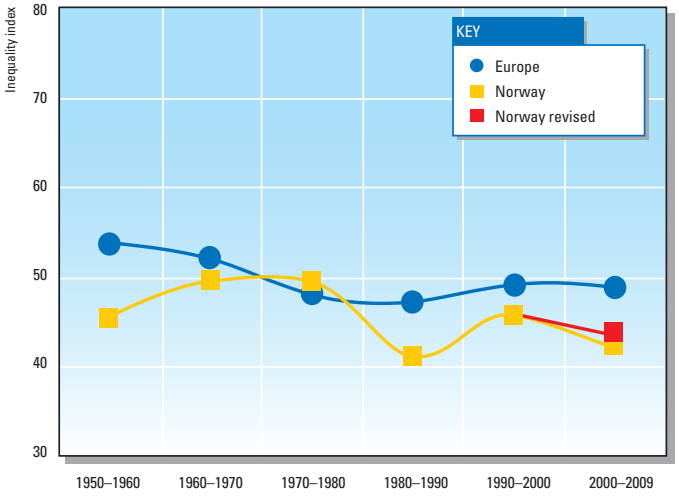
Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	1165	1 797	2 140	2 321	2 094	930
Tertiary education graduates	194	421	559	673	657	286
Graduation rate (in %)	**17**	**23**	**26**	**29**	**31**	**31 / 41***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	1.4	**1.9**	**2.3**	1.4	1.4	1.3
Mother's occupation Q1/Q4	1.0	1.4	1.2	1.4	1.2	1.2
Father's education Q1/Q4	**4.1**	**3.7**	**3.9**	**3.8**	**4.1**	**2.7**
Mother's education Q1/Q4	**3.9**	**3.2**	**2.5**	**2.8**	**4.0**	**2.4**
Inequality index (0–100)	**51**	**50**	**50**	**44**	**48**	**44 / 45***

*) revised

Norway NO

Tertiary education. In the data set for Norway tertiary education is defined by three categories in all four ESS 1–4 data—*Tertiary education/short (higher education 4 years or shorter), Tertiary education/long (higher education more than 4 years)* and *Doctoral Degree*.

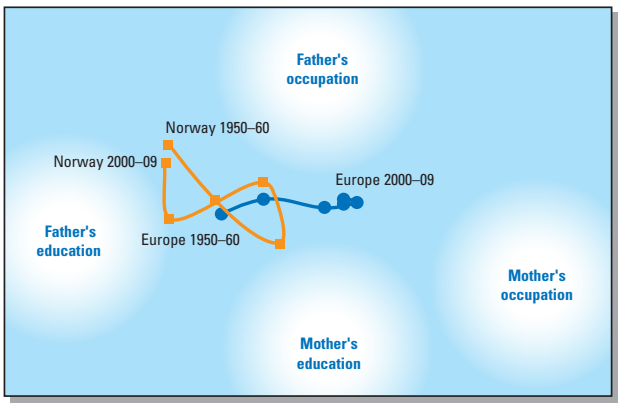
Inequality index
Norway 1950–2009



The proportion of adults with higher qualifications in the Norwegian population confirms that the Norwegian higher education has entered the universal stage. In addition, participation in tertiary education and consequently also the proportion of graduates in the relevant age group is growing, in all historical periods it has been high above the European average and so it belongs among the highest ones among the countries examined.

Inequality index. The development of the index since the 1950s shows that inequalities in access to tertiary education in Norway have been below the European average but for the 1970s and that they have shown certain fluctuations. In the 1950s the Inequality index was under the average, in the following decades it increased and overtook the European average, in the 1980s inequalities in Norway significantly decreased again. A present decrease in inequalities in Norway has been caused by the decrease of inequalities in both short and long programmes.

Typology of family background factors
Norway 1950–2009



Family background factors. TThe analysis of the entire Norwegian sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that there are three major factors in Norway that have a long-term impact on the attainment of tertiary education: father's education, father's occupation and mother's education. On the other hand, the effect of mother's occupation proved to be important only in the period from the 1970s to the 1980s and even then it was rather overshadowed by the remaining family background factors.

From the 1970s to the present, ***father's education*** has been the strongest factor. It has reached its peak value in the 1990s, when children of fathers with the highest level of educational attainment had almost four times higher chances of achieving tertiary education as compared to children of fathers with the lowest level of educational attainment. In the period after 2000 the effect of this factor slightly decreased again and the chances of children benefiting from this advantage are about three times higher nowadays.

Apart from father's education, another important factor for achieving of tertiary education in Norway is, in the long term, ***father's occupation***. Its effect was strongest in the 1950s when this factor was even the most important one among others and the chances of achieving tertiary education were for the children of fathers with the highest occupational status more than three times higher as compared to children whose fathers had the lowest occupational status. In the next decades the level of father's occupation effect has gradually decreased to almost a half; today the chances of children from families benefiting from this advantage are still two times higher.

The third important factor in Norway is ***mother's education***. It reached its peak value in the 1960s, when children of mothers with the highest level of educational attainment had almost three times higher chances of achieving tertiary education as compared to children of mothers with the lowest level of educational attainment. Later it has decreased; today the differences caused by this factor are of little importance.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	807	1 443	2 111	2 391	2 345	1 499
Tertiary education graduates	161	375	733	958	1039	628
Graduation rate (in %)	**20**	**26**	**35**	**40**	**44**	**42 / 57***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	3.2	2.5	2.5	2.3	2.0	2.0
Mother's occupation Q1/Q4	1.2	1.3	1.4	1.4	1.3	1.2
Father's education Q1/Q4	2.9	2.8	3.6	3.2	3.9	3.0
Mother's education Q1/Q4	1.6	2.9	2.7	1.8	1.9	1.3
Inequality index (0–100)	**45**	**49**	**49**	**41**	**46**	**42 / 43***

*) revised

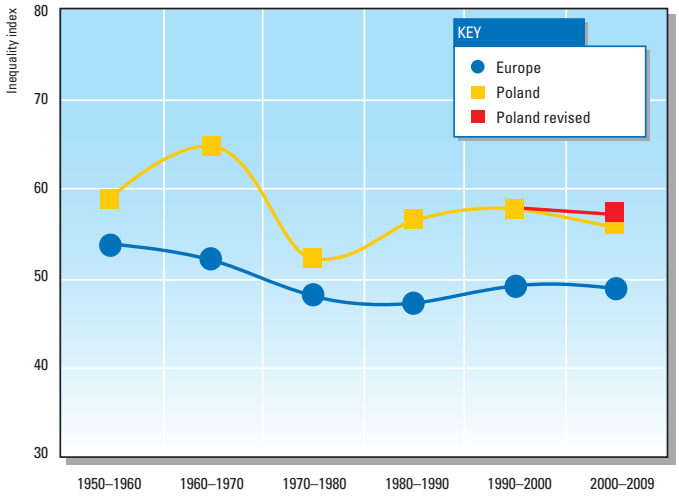
The most important family background ***factor*** in access of young people to tertiary education in Norway today is father's education and then also father's occupation. On the contrary, mother's characteristics prove to be unimportant in this aspect. At the same time, the differences among the effects of all four factors are only marginally smaller than earlier.

Over the last fifty years the weight of individual factors relatively strongly tilted in favour of father's characteristics—it was predominantly father's occupation in the 1950s and father's education during the next years up to the present that were the decisive factors in whether or not a child would attain tertiary education. Certain changes in effect of individual factors occurred during the 1960s and 1970s when both mother's education and mother's occupation became more important. The effect of father's characteristics, however, prevailed even in this period. This situation did not change in the following decade and has remained the same also today.

Poland PL

Tertiary education. In Poland it is possible to achieve tertiary education predominantly through the study at state educational institutions (nowadays approximately 70 % students)—mainly at universities (40 %) and higher technical institutions (about 25 %). Tertiary education is also provided by non-state educational institutions, which are attended by approximately 30 % students. In Poland tertiary education is defined by categories *First stage of tertiary* and *Tertiary completed* in the ESS-1, ESS-2 and ESS-3 data and by categories *Higher professional, University* and *Doctoral degree* or *higher degree/title* in the ESS-4 data.

Inequality index
Poland 1950–2009



The proportion of adults with tertiary qualifications in the Polish population confirms that Polish tertiary education has entered the mass stage. Participation in tertiary education and consequently also the proportion of graduates in the relevant age group is growing, nevertheless, it hovers still deep under the European average, the tertiary sector belongs to the smallest ones among the countries examined.

Inequality index. .The development of the index shows that inequalities in access to tertiary education in Poland hover rather far from the European average as compared to other countries and with marked fluctuations. In the 1950s the inequality index was about average, but as early as the 1960s it grew much faster than in Europe being one of the largest ones at the time. On the contrary, in the following decade the index level decreased much faster than in Europe and inequalities in Poland sank almost to the European average. In the next years inequalities started to grow again having been above the average since. In the period after 2000 a slight decrease in inequalities has followed, quite surprisingly caused by evening up chances in long university programmes.

Family background factors. The analysis of the entire Polish sample covering all age cohorts according to the characteristics of the respondents' family background, when they were at the age of fourteen, reveals that especially father's education followed by mother's education have an impact on the attainment of tertiary education. The remaining occupational factors were important only in some periods.

The effect of ***father's education*** was strongest in the 1950s and again in the 1970s, when children of fathers with the highest level of educational attainment had even more than five times higher chances of achieving tertiary education as compared to children whose fathers had the lowest qualifications. In the following decades, this effect was gradually decreasing, and in the 1990s it was surpassed by the effect of mother's education. At present the chances of children benefiting from this effect are still more than two times higher.

The effect of ***mother's education*** was strongest in the 1960s, when children of mothers with the highest level of educational attainment had even seven times higher chances of achieving tertiary education as compared to children whose mothers had the lowest qualifications. In the two following decades this effect steeply decreased and began to gain importance in the 1980s, when it again became the strongest of all. At present children of mothers with the highest level of educational attainment have almost three times higher chances of achieving tertiary education than children disadvantaged by this factor.

Father's occupation is the family background factor that had some impact on achieving tertiary education predominantly in the first three historical periods (from the 1950s to the 1970s) and further in the last period after 2000, when the chances of achieving tertiary education have been almost three times higher for children of fathers with the highest level of occupational status as compared to children whose fathers had the lowest occupational status.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	744	1 003	1 593	1 768	1 523	1 403
Tertiary education graduates	46	91	167	249	337	358
Graduation rate (in %)	**6**	**9**	**10**	**14**	**22**	**26 / 36***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	**4.6**	**2.7**	**2.7**	1.6	1.2	**2.9**
Mother's occupation Q1/Q4	0.7	**2.4**	**1.8**	**2.8**	**2.1**	**2.0**
Father's education Q1/Q4	**5.7**	**2.8**	**5.2**	**2.9**	**3.1**	**2.3**
Mother's education Q1/Q4	2.1	**7.0**	**1.9**	**2.7**	**3.7**	**2.7**
Inequality index (0–100)	**59**	**65**	**52**	**57**	**58**	56 / **57***

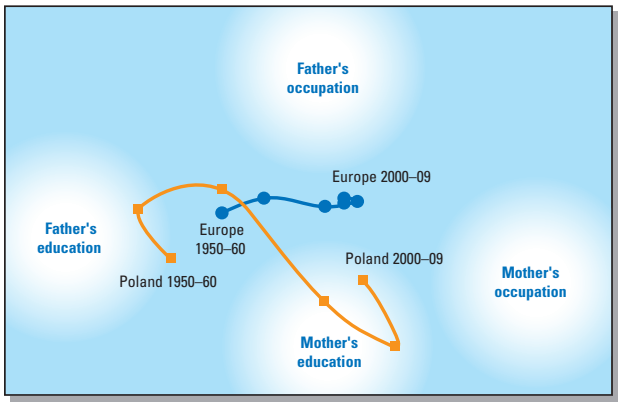
*) revised

The remaining family background factor has begun to be important only in the last years. Actually, the effect of ***mother's occupation*** was still negligible in the 1970s, however since than the chances of children benefiting from this factor have been more than two times higher.

The most important family background ***factor*** in terms of access of young people to tertiary education is education of both parents. Today, the effects of all four factors are significant, showing markedly smaller differences than earlier.

In the 1950s predominantly father's education and then also father's occupation were the decisive factors in whether or not a child would attain tertiary education. However, during the 1960s the effect of mother's education steeply increased and the weight of individual factors tilted more in favour of educational characteristics. At present, the mutual relationship of all characteristics is more or less balanced.

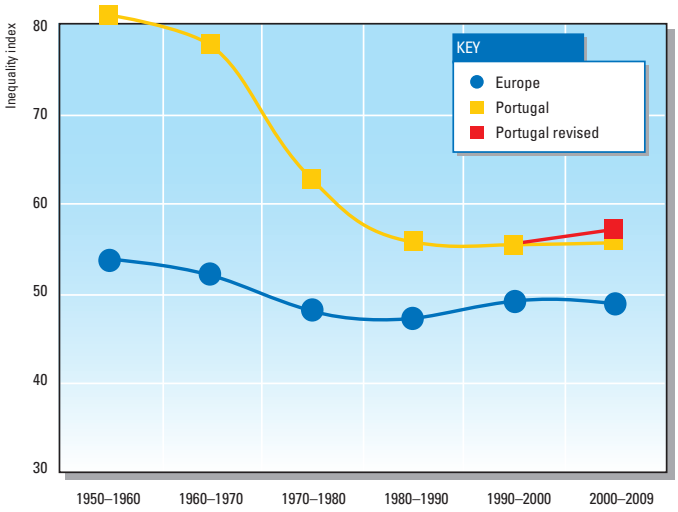
Typology of family background factors
Poland 1950–2009



Portugal PT

Tertiary education. In the data set for Portugal tertiary education is defined in the ESS-1 and ESS-2 data by three categories—*Superior Politecnico, Superior Universitario* and *Mestrado/Doutoramento*. In the ESS-3 data another category *Pós-graduação* was added to the existing ones and the category *Mestrado/Doutoramento* was divided into two separate ones. Moreover, in the ESS-4 data there are five different categories for tertiary education—*Tertiary Education/Bachelor, Tertiary Education/Degree, Tertiary Education/Master (Before Bologna), Tertiary Education/Master (After Bologna)* and *Tertiary Education/PhD*.

Inequality index
Portugal 1950–2009



The proportion of adults with tertiary qualifications in the Portuguese population confirms that Portuguese higher education has entered the mass stage. Participation in tertiary education and consequently also the proportion of graduates in the relevant age group is growing, however, it hovers still deep below the European average, the tertiary sector belongs among the smallest ones among the countries examined.

Inequality index. The development of the index shows that inequalities in access to tertiary education in Portugal hovered quite above the European average, especially in the period from the 1950s to the 1970s when they were even largest in Europe. Although they gradually decreased without more marked fluctuations they were above the average in all periods. Inequalities were closest to the European average in the 1990s, mainly due to evening up chances in tertiary non-university programmes and short university programmes. Whereas in the period after 2000 the level of the European average of the Inequality index has been decreasing, inequalities in Portugal have slightly grown.

Family background factors. The analysis of the entire Portugal sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that there are three factors in Portugal which have a long-term impact on the attainment of tertiary education: mother's education, father's education and father's occupation. On the other hand, the effect of mother's occupation was important only in the period from the 1990s to the 2000s and even then it was rather overshadowed by the remaining family background factors.

In the 1950s the effect of ***mother's education*** manifested itself as the only important and decisive factor, to such an extent that children of mothers with highest level of educational attainment had over nine times higher chances of achieving tertiary education as compared to children whose mothers with lowest qualifications. Though this effect decreased to about a third during the 1960s and was then also exceeded by the level of father's education effect, it remained most important but for the last decade. Today, chances of children benefiting from this factor are about two and half times higher.

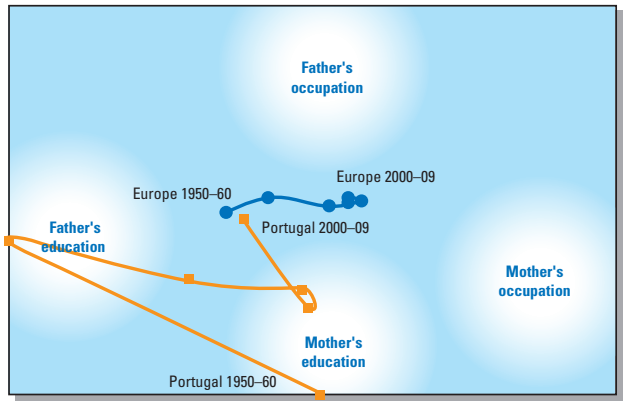
Father's education has been another strong factor. It reached its peak value in the 1960s, when children of fathers with the highest level of educational attainment had even almost forty times higher chances of achieving tertiary education as compared to children of fathers with the lowest educational attainment. At present the effect of father's education is strong again; chances of children coming from families favoured in this way are almost five times higher.

Father's occupation is the third important factor in Portugal. Its effect was more or less at a steady level, children of fathers with the highest occupational status had around two times higher chances of achieving tertiary education as compared to children whose fathers had the lowest occupational status. This situation has continued with small fluctuations to the present when chances of children coming from families favoured in this way are two and half times higher.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	1 754	2 217	2 064	2 029	2 136	1 537
Tertiary education graduates	62	112	182	270	387	294
Graduation rate (in %)	**4**	**5**	**9**	**13**	**18**	**19 / 34***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation O1/O4	1.9	2.9	2.4	1.9	1.9	2.5
Mother's occupation O1/O4	5.3	1.1	1.1	1.1	1.5	1.8
Father's education O1/O4	9.5	37.8	5.4	2.7	2.8	4.8
Mother's education O1/O4	13.5	5.8	5.8	8.5	6.3	2.6
Inequality index (0–100)	**81**	**78**	**63**	**56**	**55**	**56 / 57***

*) revised

Typology of family background factors
Portugal 1950–2009



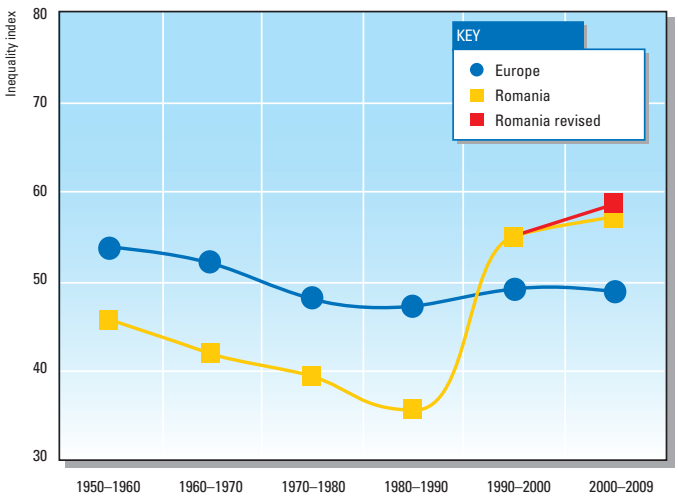
The most important family background ***factor*** in terms of access of young people to tertiary education in Portugal today is their fathers' education and, on the contrary, the least important one is their mother's occupation. The effects of all four factors show, at the same time, smaller differences than earlier.

Over the last fifty years the weight of individual factors tilted more in favour of both parents' education. In the 1950s it was predominantly mother's education that was the decisive factor in whether or not a child would attain tertiary education, later, with father's education. The effect of occupational factors was also important however the effect of both parents' education prevailed throughout.

Romania RO

Tertiary education. In the data set for Romania tertiary education is defined by three categories—*Post-high school and 2 or 3 years colleges, University degree (4 or 5 years colleges)* and *Post-graduate degree* in both ESS-3 and ESS-4 data. Romania did not participate in the first two rounds of the ESS survey.

Inequality index
Romania 1950–2009



The proportion of adults with tertiary qualifications in the Romanian population confirms that Romanian tertiary education was elitist in the 1950s and 1960s and entered mass stage in the 1970s. Although participation in tertiary education, and consequently the proportion of graduates in the relevant age group, is growing, it remains deep below the European average, and the tertiary sector in Romania belongs to the smallest ones among countries examined.

Inequality index. The development of the index since the 1950s till the 1980s shows that inequalities in access to tertiary education in Romania copied their Pan-European development but at a much lower level. A change occurred during the 1990s, when inequalities rapidly increased in Romania so that they even surpassed the European average. The growth of inequalities in Romania has been continuing also in the period after 2000 and in the last years, Romania belongs to those having the highest Inequality index among the countries explored.

Family background factors. The analysis of the entire Romanian sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that father's education was the most important factor, and that father's occupation and mother's education were important in most periods as well. On the other hand the impact of mother's occupation has been negligible throughout.

The effect of ***father's education*** education reached its peak value in the 1950s, when children of fathers with the highest occupational status had fourteen and half times higher chances of achieving tertiary education as compared to children of fathers with the lowest occupational status. After a steep decrease in the 1960s, it remained dominant in the following two decades although decreasing further, and in the 1990s it even became negligible. In the last period it became important again, and today the chances of children from families benefiting from this advantage are slightly over two times higher.

Another important factor is ***father's occupation***. In the first two periods without importance, it has grown constantly since the 1970s. Already in the 1980 it became the strongest factor, and reached its peak value at present, when children of fathers with the highest level of occupational attainment have more than five times higher chances of achieving tertiary education as compared to children of fathers with the lowest level of occupational attainment.

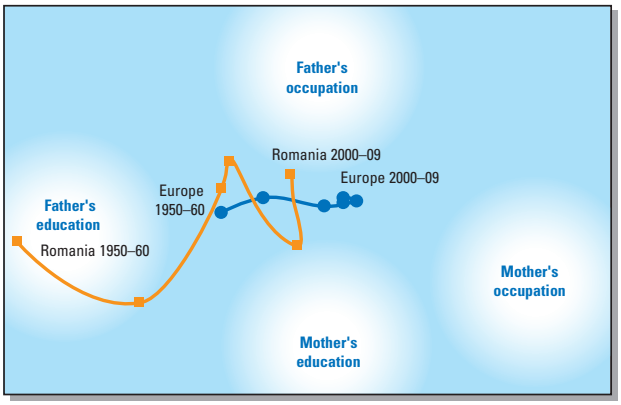
Also ***mother's education*** has been important at times—in the two first and the two last periods—whereas it was not important in the 1970s and in the 1980s. It even became the most important in the 1990s, when children of mothers with the highest level of educational attainment had almost five times higher chances of achieving tertiary education as compared to children of mothers with the lowest level of educational attainment. Today it ranks as the second strongest factor.

The most important family background ***factor*** in access of young people to tertiary education in Romania today is father's occupation, followed by mother's education. The effect of the other factors is less important, and differences between them are relatively small.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	474	807	1 049	978	1 094	884
Tertiary education graduates	47	123	223	190	238	273
Graduation rate (in %)	**10**	**15**	**21**	**19**	**22**	31 / 34*
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	1.9	1.1	**2.0**	**2.2**	**4.2**	**5.2**
Mother's occupation Q1/Q4	0.6	1.1	1.6	1.2	1.4	1.3
Father's education Q1/Q4	**14.5**	**5.8**	**3.9**	**1.7**	1.1	**2.1**
Mother's education Q1/Q4	**5.7**	**2.4**	1.6	1.6	**4.9**	**3.1**
Inequality index (0–100)	**46**	**42**	**40**	**36**	**55**	57 / 59*

*) revised

Typology of family background factors
Romania 1950–2009

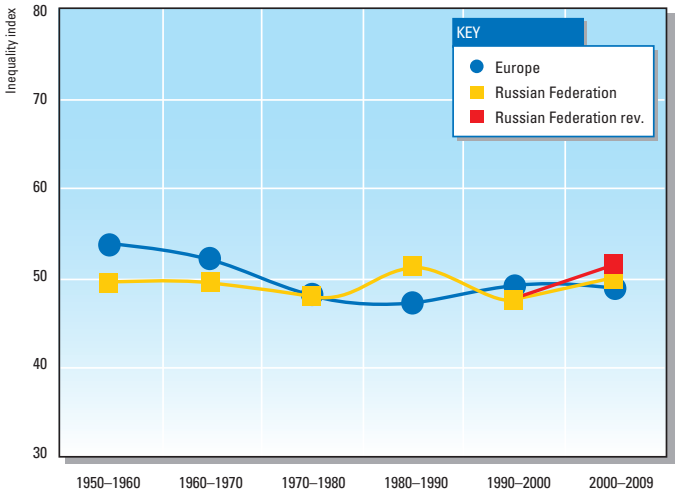


In the first three periods predominantly father's education decided whether or not a child would attain tertiary education, whereas later two other factors have influenced it considerably. First the effect of father's occupation increased significantly in the 1980s, to be followed by a similar effect of mother's education in the 1990s, and finally stressing father's occupation again.

Russian Federation RU

Tertiary education. In the data set for the Russian Federation tertiary education is defined by five categories—*Bachelor degree from college, Master degree from college, Completed college by 5–6 grade system, Post-college education without scientific degree* and *Scientific degree* in both ESS-3 and ESS-4 data. The Russian Federation did not participate in the first two rounds of the ESS survey.

Inequality index
Russian Federation 1950–2009



The proportion of adults with tertiary qualifications in the Russian population confirms that Russian tertiary education was elitist in the 1950s and 1960s and entered mass stage in the 1970s. Moreover, participation in tertiary education, and consequently also the proportion of graduates in the relevant age group, is growing, hovering just above the European average in all historical periods.

Inequality index. The development of the index since the 1950s shows that inequalities in access to tertiary education in the Russian Federation have always been very close to the European average. They have not been governed by any noticeable changes, on the contrary their course has been almost flat but for minor differences in the 1980s and at present.

Family background factors. The analysis of the entire Russian sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that all four background factors examined have had a long-term impact on the attainment of tertiary education in the Russian Federation: predominantly both educational factors, and only to a lesser degree both occupational factors.

The effect of ***father's education*** was dominant throughout but for the last period, remaining more or less at a same level. Children of fathers with the highest educational status had usually about three and half times higher chances of achieving tertiary education as compared to children of fathers with the lowest educational status, but less than three times higher in the last period.

The second important factor is ***mother's education***. Although not important in the first two periods, it has grown since the 1960s finally to become the strongest one in the last period. Today children of mothers with the highest level of educational attainment have more than five and half times higher chances of achieving tertiary education as compared to children of mothers with the lowest level of educational attainment.

The two ***occupational factors*** have had far less effect in the long term for the attainment of tertiary education. They were relatively important only in the two first periods: in the 1950s the chances of attaining tertiary education were three times higher for children of fathers with the highest occupational status as compared to children whose fathers had the lowest occupational status., and in the 1960s children of mothers with the highest level of occupational attainment had more than two times higher chances of achieving tertiary education as compared to children of mothers with the lowest level of occupational attainment. Later both occupational factors have become comparatively weak, at times they have even lost their importance.

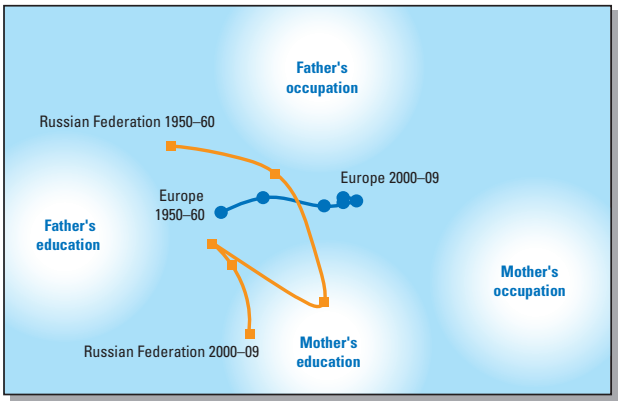
The most important family background ***factor*** in access of young people to tertiary education in the Russian Federation today is mothers' education. The effect of the other educational factor is also important, but difference between them is quite large.

During the first two periods the development differed a lot compared to later periods. While both father's characteristics dominated earlier, later the effect of mother's education has been gradually growing, and although the effect of father's education was strongly felt in the 1980s and in the 1990s, the effect of mother's education has become decisive in the last period. Although occupational characteristics had more or less equal effect as educational ones in the first two periods, the latter have become distinctly dominant since then.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	676	955	1 097	1 191	1 127	1 044
Tertiary education graduates	86	178	264	343	355	357
Graduation rate (in %)	**13**	**19**	**24**	**29**	**31**	34 / **43***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	**3.0**	**2.7**	1.1	**1.7**	**1.5**	**1.5**
Mother's occupation Q1/Q4	1.0	**2.3**	**2.1**	1.2	1.3	**1.5**
Father's education Q1/Q4	**3.4**	**3.5**	**3.4**	**3.5**	**3.4**	**2.7**
Mother's education Q1/Q4	1.7	1.2	**2.0**	**2.7**	**3.3**	**5.6**
Inequality index (0–100)	**49**	**49**	**48**	**51**	**47**	49 / **51***

*) revised

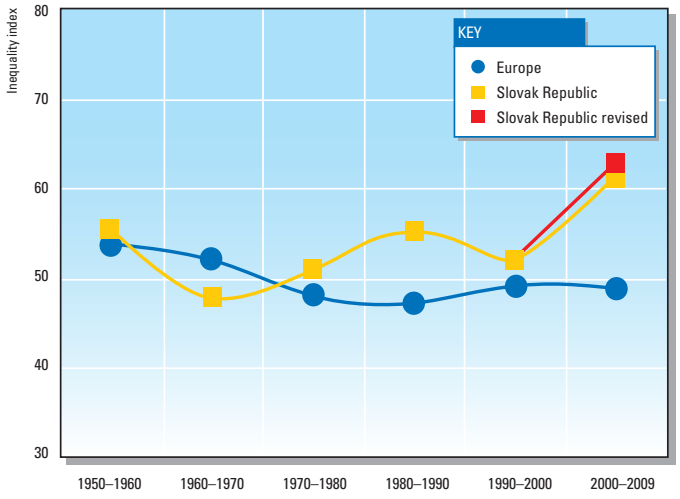
Typology of family background factors
Russian Federation 1950–2009



Slovak Republic SK

Tertiary education. In the data set for the Slovak Republic tertiary education is defined by three categories—*Tertiary/Bc., Tertiary/M.A* and *Post-graduate* in the ESS-2, ESS-3 and ESS-4 data. The Slovak Republic did not participate in the first round of the survey ESS-1.

Inequality index
Slovak Republic 1950–2009



The proportion of adults with tertiary qualifications in the Slovak population confirms that Slovak tertiary education was very elitist and entered mass stage after 2000. Although participation in tertiary education, and consequently the proportion of graduates in the relevant age group, is growing, it remains deep below the European average, and the tertiary sector in Slovak Republic belongs to the smallest ones among countries examined.

Inequality index. The development of the index since the 1950s shows that inequalities in access to tertiary education in Slovak Republic have mostly oscillated around the European average with some fluctuations. A rapid growth of the Inequality index level in the period after 2000 has been caused by increasing inequalities in long university programmes.

Family background factors. The analysis of the entire Slovakian sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that it is predominantly father's occupation followed by mother's education that has a long-term impact on the attainment of tertiary education in the Slovak Republic. The remaining family background factors were important only in some periods.

Although the effect of ***father's occupation*** was negligible in the 1950s, it became most important in the 1970s when children of fathers with the highest occupational status had more than five times higher chances of achieving tertiary education as compared to children of fathers with the lowest occupational status. Although this factor decrease later it has remained important, and today the chances of children from families benefiting from this advantage are almost seven times higher.

In the 1950s ***mother's education*** was the only important family background factor in the Slovak Republic in terms of the attainment of tertiary education. At that time children of mothers with the highest level of educational attainment had almost ten times higher chances of achieving tertiary education as compared to children of mothers with the lowest level of educational attainment. Although this factor decreased in following decades, it remained important but for the last period.

Father's education influenced the attainment of tertiary education only during the 1970s and 1980s and again in the period after 2000. In the 1970s and 1980s the chances of achieving tertiary education were about two times higher for children of fathers with the highest level of educational attainment; today they are over three times higher.

The remaining family background factor, ***mother's occupation***, has been important only since the 1980s. In the 1990s it became the strongest of all, and today the chances of children benefiting from this factor have become more than five times higher.

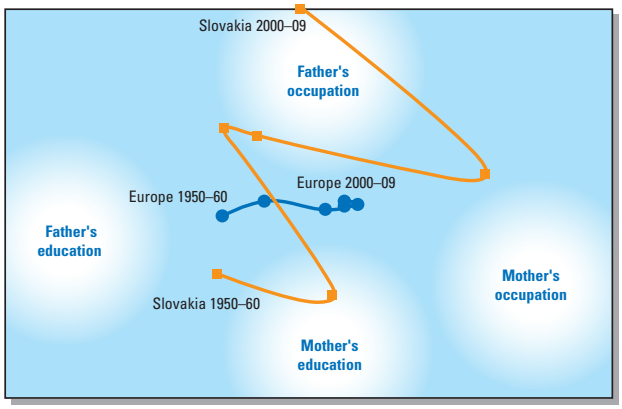
Nowadays, ***the most important*** family background ***factor*** in terms of access of young people to tertiary education in the Slovak Republic is their fathers' occupation; the least important one is their mothers' education. However, differences in effect between the four factors have decreased over time.

Over the last fifty years the weight of individual factors tilted at first in favour of both parents' education and later more and more rather in favour of the characteristics of occupation. A shift in effect of individual factors occurred mostly during the 1970s when the effect of father's occupation became most important. In the 1990s the effect of mother's occupation also began to be strengthened; however, at present the effect of father's occupation definitely prevails.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	484	853	1 255	1 283	1 277	1 062
Tertiary education graduates	38	75	168	197	200	168
Graduation rate (in %)	8	9	13	15	16	16 / 29*
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	1.7	2.2	5.3	3.0	3.5	6.9
Mother's occupation Q1/Q4	1.6	0.8	1.6	2.8	4.3	5.3
Father's education Q1/Q4	2.7	1.8	2.1	2.0	1.4	3.1
Mother's education Q1/Q4	9.5	2.4	2.3	2.2	3.2	1.4
Inequality index (0–100)	55	47	51	55	52	61 / 62*

*) revised

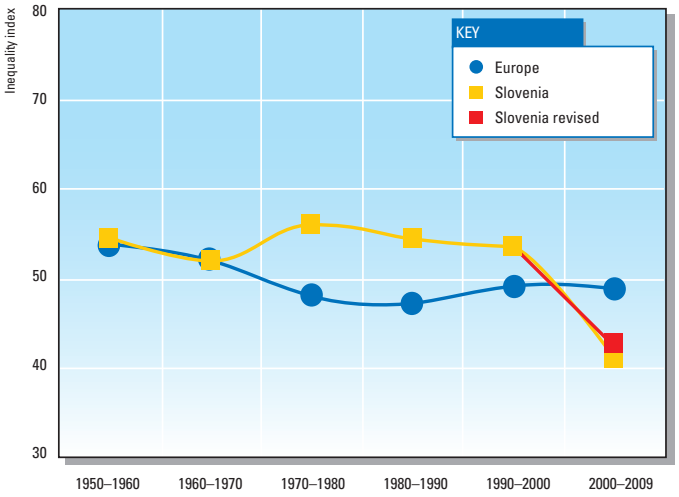
Typology of family background factors
Slovakia 1950–2009



Slovenia SI

Tertiary education. In the data set for Slovenia tertiary education is defined by three categories—*Post secondary/non-tertiary, First stage of tertiary* and *Second stage of tertiary* in ESS-1, ESS-2 and ESS-3 data, and by categories *2-letna višja (strokovna) šola, Visoka šola/fakulteta/akademija and Magisterij/doktorat* in ESS-4 data.

Inequality index
Slovenia 1950–2009



The proportion of adults with tertiary qualifications in Slovenian population confirms that Slovenian tertiary education was elitist and has entered the mass stage in the 1980s. Participation in tertiary education, and consequently also the proportion of graduates in the relevant age group, is growing; however, it is still below the European average.

Inequality index. The development of the index since the 1950s shows that inequalities in access to tertiary education in Slovenia hovered still relatively closely to European average and at the same time they were not influenced by any more noticeable fluctuations. The Inequality index was highest and most above the European average in the 1970s, and slightly less in the two following decades. In the last period the Inequality index has fallen down below the European average. The present decline in inequalities has been caused by evening up chances in short university programmes.

Family background factors. The analysis of the entire Slovenian sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that there are two major factors in Slovenia that have a long-term impact on the attainment of tertiary education: father's education and mother's education, in the last two periods also followed by father's occupation.. On the other hand, the effect of mother's occupation did not prove to be important in any of the six historical periods.

In the 1950s the effect of ***father's education*** proved to be a decisive and also the only important factor. Children of fathers with the highest level of educational attainment had even more than thirty times higher chances of achieving tertiary education at the time as compared to children of fathers with the lowest level of educational attainment. In the 1960s the impact of father's education was steeply reduced (and also other factors became important). Although in the following decades this effect has been gradually decreasing, still it has remained to be the most important one. At present the chances of children benefiting from this factor are almost two times higher.

The effect of ***mother's education***has been second in importance throughout. Its peak value was reached in the 1970s, when children of mothers with the highest level of educational attainment had about three and half times higher chances of achieving tertiary education at the time as compared to children of mothers with the lowest level of educational attainment. Since then this effect has been gradually decreasing, and at present the relative chances are only about one and half higher.

The ***father's occupation*** has only become important in the last four periods. In the last two periods this factor ranks second, together with mother's education. The effect of mother's occupation has been negligible throughout, moreover it has been constantly decreasing.

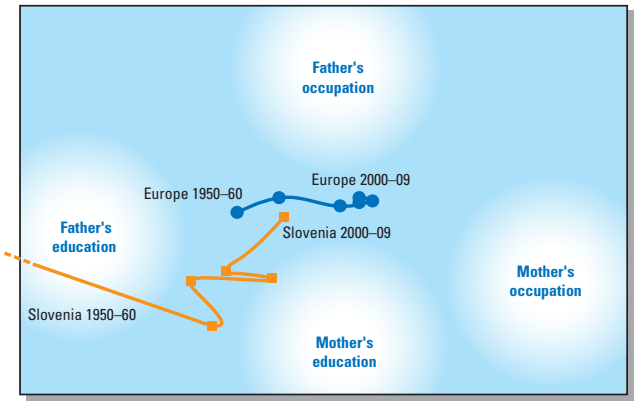
At present, ***the most important*** family background ***factor*** in terms of access of young people to tertiary education in Slovenia is father's education, followed by mother's education and father's occupation. However, differences in effect between the four factors have decreased substantially over time.

Over the last fifty years the weight of individual factors relatively strongly tilted in favour of both parents' education. In the 1950s it was solely father's education that was the decisive factor in whether or not a child would attain tertiary education, its impact was, however, weakened in the following decades and complemented by the effect of other two factors. At first it was mother's education that became the second most important factor, and later up to the present it has been followed also by the effect of father's occupation.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	692	1 044	1 306	1 472	1 368	997
Tertiary education graduates	66	154	241	324	334	251
Graduation rate (in %)	**10**	**15**	**18**	**22**	**24**	**25 / 38***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	1.0	1.8	**2.2**	**1.6**	**2.2**	**1.6**
Mother's occupation Q1/Q4	1.6	1.4	1.3	1.3	1.1	1.2
Father's education Q1/Q4	**13.6**	**4.3**	**4.1**	**3.0**	**2.4**	**1.9**
Mother's education Q1/Q4	2.0	**3.0**	**3.6**	**2.7**	**2.2**	**1.6**
Inequality index (0–100)	**54**	**52**	**56**	**54**	**53**	**41 / 43***

*) revised

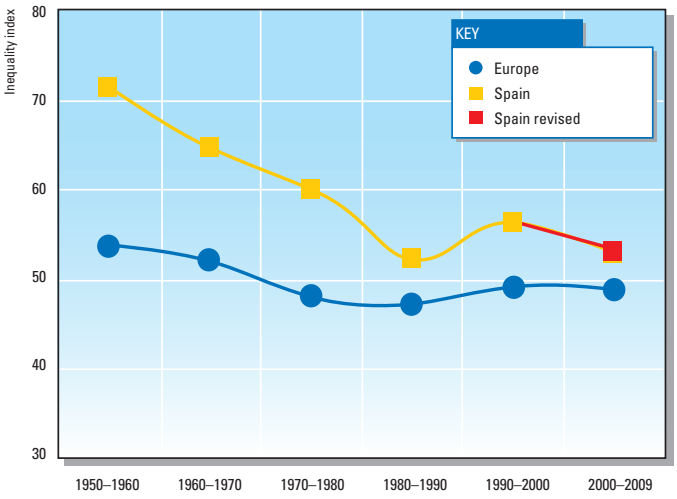
Typology of family background factors
Slovenia 1950–2009



Spain ES

Tertiary education. In the data set for Spain tertiary education is defined by categories *2 or 3 years higher education (not leading to a university degree), Polytechnical studies/short cycle, Other short cycle university degree (3 years), Polytechnical studies/long cycle, Other long cycle university degree (5 years or more), Postgraduate degree* and *Doctoral degree* in the ESS-1 data, and by categories *Post-secondary/non-tertiary, University degree/3 years technical, University degree/3 years, University degree/5 years technical, University degree/5 years, Postgraduate studies* and *Ph.D.* in the ESS-2, ESS-3 and ESS-4 data.

Inequality index
Spain 1950–2009



The proportion of adults with tertiary qualifications confirms that Spanish tertiary education was very elitist especially from the 1950s to the 1970s, gradually getting to the mass stage in the following years. Since the 1980s participation in tertiary education and consequently also the proportion of graduates in the relevant age group have hovered high above the European average, the tertiary sector in Spain belongs therefore to the largest ones among the countries examined and has entered the universal stage after 2000.

Inequality index. The development of the index shows that inequalities in access to tertiary education in Spain hovered at first high above the European average in the 1950s, coming gradually closer to its level but still belonging to the highest ones in Europe in the 1970s. They reached its minimum in the 1980s, still above the level of the European average, and increased again in the 1990s. Their present decrease has been rather surprisingly caused by increasing inequalities in tertiary non-university and short university programmes.

Family background factors. The analysis of the entire Spanish sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that there are three factors in Spain that have a long-term impact on the attainment of tertiary education: father's occupation, father's education and mother's education. On the other hand, the effect of mother's occupation did not prove to be important in any of the six historical periods.

The effect of ***father's education*** in Spain proves to be decisive for more than fifty years. It was strongest in the 1950s when the chances of achieving tertiary education were even nine times higher for the children of fathers with the highest level of educational attainment as compared to children of fathers with the lowest level of educational attainment. Although this effect decreased to about a third during the 1980s, today the chances of children from families benefiting from this advantage are again more than four times higher.

Father's occupation is another important long-term factor for the attainment of tertiary education in Spain. Its impact was strongest in the 1950s when this factor was, at the same time, the second most important among other factors and the chances of achieving tertiary education were more than four times higher for children of fathers with the highest occupational status as compared with children whose fathers had the lowest occupational status. Its effect significantly decreased in the following decade, remaining at a lower level till the present. The chances of children from families benefiting from this advantage are about two and half times higher today.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	1 151	1 276	1 450	1 880	2 028	1 385
Tertiary education graduates	61	95	225	422	554	350
Graduation rate (in %)	**5**	**7**	**16**	**22**	**27**	**25 / 45***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	4.4	3.3	3.4	2.6	3.0	2.6
Mother's occupation Q1/Q4	1.5	0.7	1.3	1.3	1.5	1.6
Father's education Q1/Q4	9.2	9.4	6.6	3.5	6.8	4.4
Mother's education Q1/Q4	1.5	1.5	1.4	2.1	2.9	3.7
Inequality index (0–100)	**71**	**64**	**60**	**52**	**56**	**53 / 53***

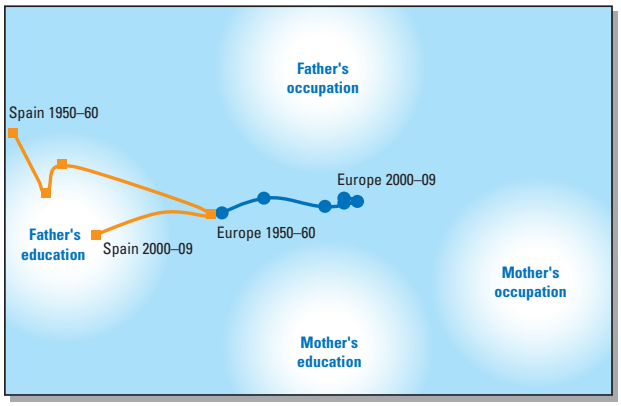
*) revised

Mother's education, not important as a family background factor till the 1970s, started to influence the attainment of tertiary education in Spain in the 1980s. At the beginning, its effect was not as important as the effects of father's occupation and father's education at all, but it gradually evened them up. At present children of mothers with the highest level of educational attainment have almost four times higher chances of achieving tertiary education as compared with children of mothers with the lowest level of educational attainment.

The most important family background ***factor*** in access of young people to tertiary education in Spain today is their father's education, the least important one is their mothers' occupation. Differences among the effects of individual factors are only slightly smaller than earlier.

Over the last fifty years the weight of individual factors relatively strongly tilted in favour of father's characteristics and it was predominantly father's education that was the decisive factor in whether or not a child would attain tertiary education. More important changes in effects of individual factors occurred during the 1980s when the effect of father's education significantly decreased and at the same time the effect of mother's education increased. Nevertheless, the effect of father's characteristics prevailed even in this period, and it has been growing again in the following decades.

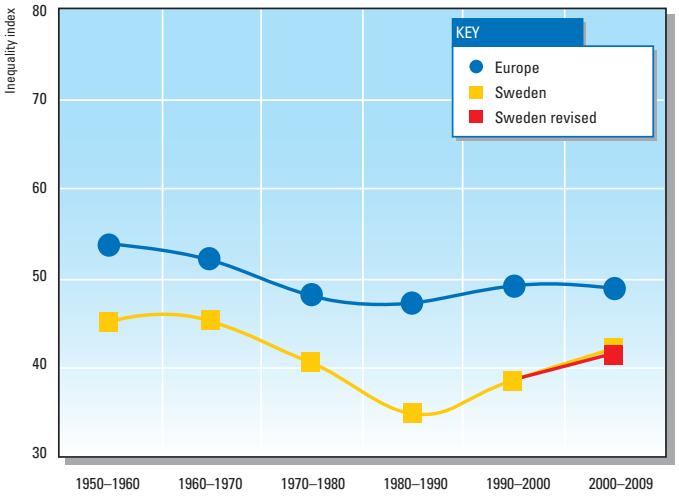
Typology of family background factors
Spain 1950–2009



Sweden SE

Tertiary education. In the ESS-1 and ESS-2 data sets for Sweden tertiary education is defined by two categories—*Universitet/Högskola/kortare än 3 år/med examen and Universitet/Högskola/3 år eller längre/med examen*. In the ESS-3 and ESS-4 data the current categories were extended by a category *Forskarutbildning*.

Inequality index
Sweden 1950–2009



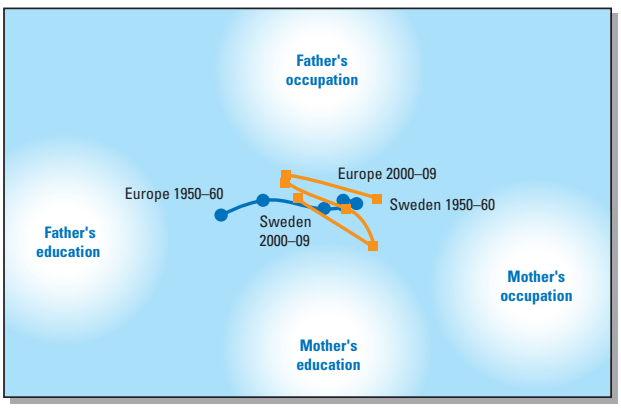
The proportion of adults with higher qualifications in the Swedish population confirms that Swedish tertiary education entered the mass stage in the 1970s, and today it is universal. Participation in tertiary education and consequently also the proportion of graduates in the relevant age group is growing and in all historical periods it has been higher than the European average.

Inequality index. The development of the index since the 1950s shows that inequalities in access to tertiary education have been below the average in all historical periods, belonging to the lowest ones in Europe, and without more pronounced changes. At present inequalities in Sweden have become closest to the European average, which has predominantly been the result of their increasing in the so-called long programmes. Whereas in the period after 2000 the level of the European average of the Inequality index has decreased, inequalities in Sweden have slightly increased.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	968	1 636	2 186	2 245	2 259	1 681
Tertiary education graduates	120	318	594	687	750	552
Graduation rate (in %)	**12**	**19**	**27**	**31**	**33**	**33 / 44***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	3.4	4.5	2.7	2.0	1.9	2.4
Mother's occupation Q1/Q4	1.5	1.3	1.6	1.8	2.1	2.1
Father's education Q1/Q4	3.1	2.6	2.3	1.9	1.7	1.6
Mother's education Q1/Q4	2.0	1.6	1.6	1.7	2.0	1.7
Inequality index (0–100)	**45**	**45**	**40**	**35**	**39**	**42 / 41***

*) revised

Typology of family background factors
Sweden 1950–2009



Family background factors. The analysis of the entire Swedish sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that all the four family background factors examined have an impact, in the long term, on the attainment of tertiary education in Sweden: father's occupation, mother's occupation, father's education and mother's education.

The effect of ***father's occupation*** has been dominant throughout but for the 1990s. Its peak value was reached in the 1960s, when children of fathers with the highest occupational status had four and half times higher chances of achieving tertiary education as compared to children of fathers with the lowest occupational status. The effect of this factor decreased in following decades, and in the 1990s it was even surpassed by mother's occupation. Today the chances of children from families benefiting from this advantage are again nearly two and half times higher.

The second important factor in Sweden is ***father's education***. In the 1950s children of fathers with the highest level of educational attainment had more than three times higher chances of achieving tertiary education as compared to children with the lowest level of educational attainment. In following decades the effect of father's education gradually decreased to half, but it remained important even today.

Another factor important in the long term for the attainment of tertiary education in Sweden is ***mother's education***. Its effect has been almost even throughout, when children of mothers with the highest level of educational attainment had more than one and half to two times higher chances of achieving tertiary education as compared to children of mothers with the lowest level of educational attainment.

The effect of the remaining family background factor—***mother's occupation***—was comparatively weak in the two first decades, but has been important since. In the 1990s it surpassed all other factors reaching its peak value, when chances of attaining tertiary education were more than two times higher for children of mothers with the highest occupational status as compared to children whose mothers had the lowest occupational status.

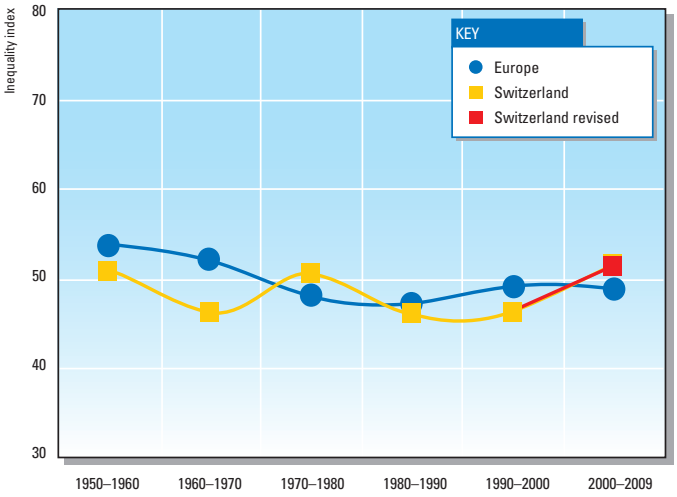
The most important family background ***factor*** in access of young people to tertiary education in Sweden today is fathers' occupation. The effect of the other factors is also important, and differences between them are relatively small.

In the first four periods predominantly father's characteristics decided whether or not a child would attain tertiary education. Although during the 1990s the effect of mother's characteristics was felt strongly, in the last period the differences in the effect of the four factors almost evened up.

Switzerland CH

Tertiary education. In the data set for Switzerland tertiary education is defined by categories *Technical or vocational high school (2 yrs full/ 3 yrs part time), Technical or vocational high school (specialized), University (3years, short bachelor's degree), University (4years and more, bachelor's degree)* and *University (masters, post-grade)* in the ESS-1 and ESS-2 data, and by categories *Higher vocational training, Pedagogical and applied university, University diploma and post-graduate (including technical)* and *University doctorate* in the ESS-3 data. In the ESS-4 data there are five different categories for tertiary education—*Higher vocational training, University of applied science and pedagogical university (Bachelor), University of applied science and pedagogical university (Master), University diploma and post-graduate (including technical)* and *University doctorate*.

Inequality index
Switzerland 1950–2009



The proportion of adults with tertiary qualifications in the Swiss population confirms that Swiss tertiary education has entered the mass stage in the 1970s. Participation in tertiary education and consequently also the proportion of graduates in the relevant age group is growing; nevertheless, it still hovers below the European average.

Inequality index. The development of the index shows that inequalities in access to tertiary education in Switzerland till the 1990s nearly copied the European average being slightly below it with the exception of the 1970s, and at the same time they were not subjected to any noticeable changes. A fluctuation has occurred only at present when inequalities have slightly decreased in Europe while they have significantly increased in Switzerland. Their growth has been caused by increases not only in so-called long but also in short university programmes.

Family background factors. The analysis of the entire Swiss sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that all four considered family background factors have a long-term impact on the attainment of tertiary education in Switzerland: father's occupation, mother's occupation, father's education and mother's education.

Both ***father's characteristics*** have been important throughout and alternated in domination. Their peak values were almost the same: children of fathers with the highest occupational status or educational attainment had about four and half times higher chances of achieving tertiary education as compared to children of fathers with the lowest occupational status or educational attainment. Also today both father's characteristics have reached the same value: the chances of children from families benefiting from this advantage are nearly three and half times higher.

Mother's education is the third important factor in Switzerland. Whereas in the 1950s its effect was still quite unimportant, it reached its peak values in the 1970 and again in the 1990, when children of mothers with the highest level of educational attainment had about two and half times higher chances of achieving tertiary education as compared to children of mothers with the lowest level of educational attainment. Also the remaining family background factor—***mother's occupation***—started to be important in the 1960s. It has reached its maximum in the last period, when the chances of achieving tertiary education were two times higher for children of mothers with the highest occupational status as compared to children whose mothers had the lowest occupational status.

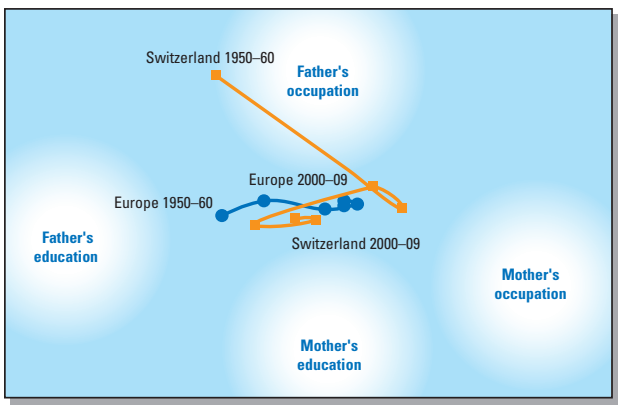
The most important family background ***factor*** in terms of access of young people to tertiary education in Switzerland today are both fathers' characteristics, the least important factor is their mothers' education. In addition, the effects of all four factors are important, showing markedly smaller differences than earlier.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	1 001	1 558	1 858	2 101	2 326	1 367
Tertiary education graduates	129	268	390	555	689	365
Graduation rate (in %)	**13**	**17**	**21**	**26**	**30**	**27 / 40***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	3.7	2.9	4.6	2.9	2.6	3.4
Mother's occupation Q1/Q4	1.3	1.8	1.9	1.3	1.6	2.0
Father's education Q1/Q4	4.5	3.9	2.3	3.0	2.4	3.4
Mother's education Q1/Q4	1.2	1.7	2.5	1.9	2.6	1.6
Inequality index (0–100)	**50**	**46**	**50**	**46**	**46**	**51 / 51***

*) revised

In the 1950s it were solely father's characteristics that were the decisive factor in whether or not a child would attain tertiary education. A greater change in the effect of individual factors occurred as early as the 1960s when both mother's characteristics began to be important and their total effect was strengthened. In the following decades the effect of family background factors did not dramatically change, the effect of father's characteristics still prevailing up to the present.

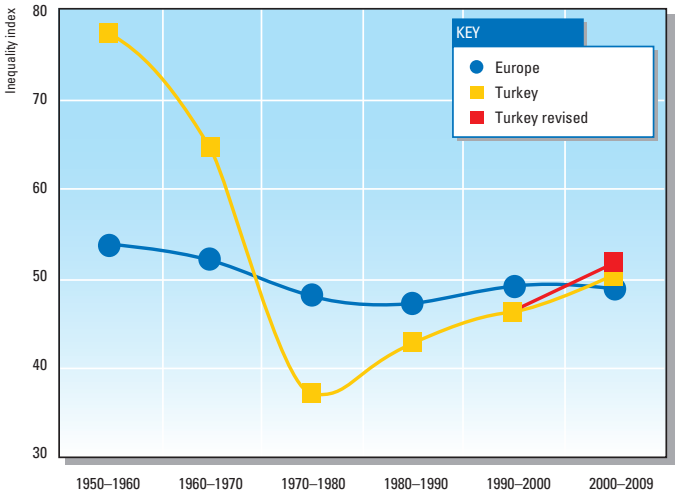
Typology of family background factors
Switzerland 1950–2009



Turkey TU

Tertiary education. In the data set for Turkey tertiary education is defined by two categories of the simplified international version of classification of the highest level of education attainment—*First stage of tertiary* and *Second stage of tertiary* in the ESS-2 data and by categories *Universite veya yüksekokul mezunu* and *Master derecesi sahibi* in the ESS-4 data. Turkey did not participate in the ESS-1 and ESS-3 rounds of the ESS survey.

Inequality index
Turkey 1950–2009



The proportion of adults with tertiary qualifications in the Turkish population confirms that Turkish tertiary education has remained very elitist also in the period after 2000. Although participation in tertiary education, and consequently the proportion of graduates in the relevant age group, is growing, it remains deep below the European average, and the tertiary sector in Turkey is the smallest one among countries examined.

Inequality index. The development of the index since the 1950s shows that inequalities in access to tertiary education in Turkey decreased dramatically in the 1960s and particularly in the 1970s. Whereas in the 1950s inequalities were between the highest among countries examined, they were deep below the European average in the 1970s. From the 1980s inequalities have started increasing again and in the period after 2000 they have been slightly above the European average.

Family background factors. The analysis of the entire Turkish sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that three factors have had a long term impact on the attainment of tertiary education: father's education, mother's education and (to a lesser extent) father's occupation.

The effect of ***father's education***, was not important only in the 1950s. Since then, it has become important, and in the two last periods even the strongest one, reaching its peak value in the last period: at present children of fathers with the highest educational status have six times higher chances of achieving tertiary education as compared to children of fathers with the lowest educational status.

Another factor important throughout for the attainment of tertiary education in Turkey is ***mother's education***. In the first two periods its effect was very strong, almost as strong as that of father's occupation, afterwards it considerably decreased and has remained at a constant low level. At present children of mothers with the highest level of educational attainment have more than two times higher chances of achieving tertiary education as compared to children of mothers with the lowest level of educational attainment.

Father's occupation was the strongest in the first two periods. Then its effect decreased so considerably that it became not important but for the last period. But even then it has remained weak, as children of fathers with the highest level of occupational attainment have less than two times higher chances of achieving tertiary education as compared to children of fathers with the lowest level of occupational attainment. On the other hand, the effect of ***mother's occupation*** has been not important throughout.

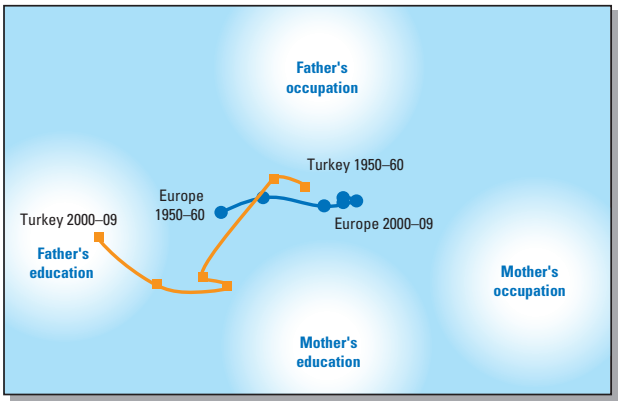
The most important family background ***factor*** in access of young people to tertiary education in Turkey today is fathers' education. The effect of the other educational factor is also important but difference between them is quite large.

In the first two periods the effect of two factors—father's occupation and mother's education—was dominant, but later the effect of father's occupation almost waned. In the 1970s and the 1980s the impact of mother's education was strongly felt, afterwards giving way to the increasing effect of father's education. Today it is predominantly father's education that decides whether or not a child would attain tertiary education.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	241	440	669	968	1 275	1 246
Tertiary education graduates	6	17	48	61	105	146
Graduation rate (in %)	**2**	**4**	**7**	**6**	**8**	12 / **18***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	**13.4**	**12.8**	1.6	1.5	0.7	**1.9**
Mother's occupation Q1/Q4	0.5	0.1	0.3	0.7	0.3	1.0
Father's education Q1/Q4	1.5	**3.4**	**2.8**	**2.2**	**5.0**	**6.0**
Mother's education Q1/Q4	**12.9**	**9.1**	**2.5**	**2.7**	**2.5**	**2.3**
Inequality index (0–100)	**77**	**64**	**37**	**43**	**46**	50 / **52***

*) revised

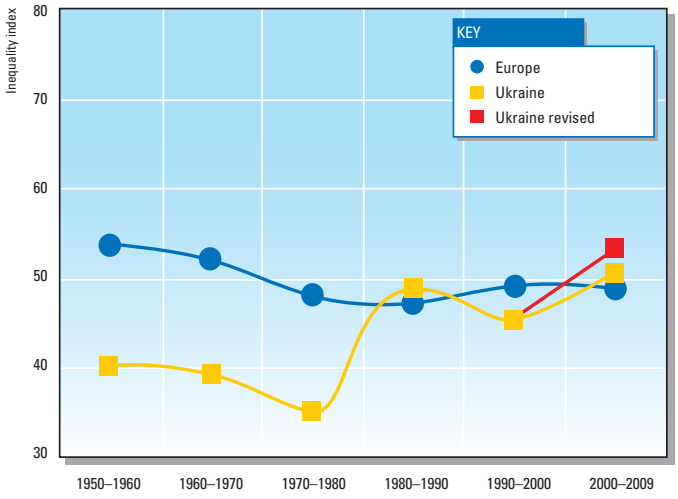
Typology of family background factors
Turkey 1950–2009



Ukraine UA

Tertiary education. In the data set for Ukraine tertiary education is defined by two categories—*First stage of high education (bachelor)* and *Completed high education (specialist, master, post-graduate)* in the ESS-2 and ESS-3 data and by three categories—*Basic high education (bachelor degree), Completed high education (specialist degree, master degree)* and *Postgraduate studies/scientific degree* in the ESS-4 data. Ukraine did not participate in the first round of the survey ESS-1.

Inequality index
Ukraine 1950–2009



The proportion of adults with tertiary qualifications in the Ukrainian population confirms that the Ukrainian tertiary education has entered the universal stage in the recent years. Participation in tertiary education, and consequently also the proportion of graduates in the relevant age group, is growing now, being slightly above the European average.

Inequality index. The development of the index since the 1950s confirms that inequalities in access to tertiary education in Ukraine followed a course different from the European one. The Inequality index, at first well under the European average, was increasing in the 1970s so steeply that in the 1980s it overtook the European average. Although it decreased again in the next decade, after 2000, the Inequality index has grown again which has been due to increasing inequalities in long university programmes.

Family background factors. The analysis of the entire Ukrainian sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that there are two major factors that have a long-term impact on the attainment of tertiary education in Ukraine: father's education and mother's education. On the other hand, the remaining family background factors were important only in some periods.

In the first four historical periods (from the 1950s to the 1970s) especially ***father's education*** was decisive. Children of fathers with the highest level of educational attainment had even more than three times higher chances of achieving tertiary education at the time as compared to children of fathers with the lowest level of educational attainment. In the two following decades the effect of father's education decreased and was exceeded by the second important factor, in the long term—the effect of mother's education. At present both education factors are at the same level and the chances of children from families benefiting from this advantage are more than two times higher.

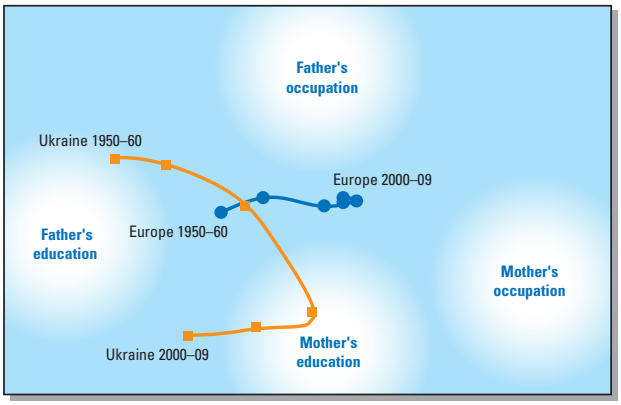
The effect of ***mother's education*** was the second strongest but for the 1990s, when children of mothers with the highest level of educational attainment had almost times higher chances of achieving tertiary education at the time as compared to children of mothers with the lowest level of educational attainment.

The two remaining family background factors were important only in some periods and it is not therefore possible to speak about their long-term impact. The effect of ***mother's occupation*** has become since the 1970s, and at present the chances of achieving tertiary education are about two times higher for children benefiting from this factor. The effect of ***father's occupation*** proved to be important in the 1980s, when it was relatively strong, since the chances of achieving tertiary education were almost two times higher for children of fathers with the highest occupational status as compared to children of fathers with the lowest occupational status.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	957	1 332	1 428	1 390	1 211	1 099
Tertiary education graduates	139	302	425	479	421	432
Graduation rate (in %)	**15**	**23**	**30**	**34**	**35**	39 / **47***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation Q1/Q4	1.5	1.3	1.2	**1.8**	1.4	1.4
Mother's occupation Q1/Q4	1.2	1.1	**1.5**	**2.3**	**2.0**	**2.1**
Father's education Q1/Q4	**3.1**	**3.3**	**2.4**	**3.3**	**2.7**	**2.3**
Mother's education Q1/Q4	**2.2**	1.0	**1.8**	**2.2**	**2.8**	**2.3**
Inequality index (0–100)	**40**	**39**	**35**	**49**	**45**	51 / **53***

*) revised

Typology of family background factors
Ukraine 1950–2009



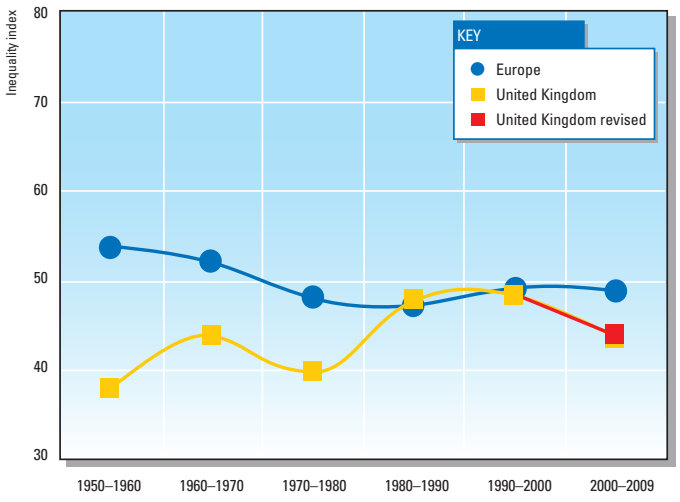
At present, ***the most important*** family background ***factor*** in terms of access of young people to tertiary education in Ukraine ate both education factors while the occupation of both parents proves to be unimportant in this respect. At the same time, differences in effect between all four factors have not increased over time.

Over the last fifty years the weight of individual factors relatively strongly tilted in favour of both parents' education. From the 1950s to the 1970s it was predominantly father's education and from the 1980s also mother's education that was the decisive factor in whether or not a child would attain tertiary education. A slight change in effect of individual factors occurred only in the 1980s when the effect of father's occupation also became important; nevertheless, the effect of parents' education unambiguously prevailed even in this period.

United Kingdom GB

Tertiary education. In the data set for the United Kingdom tertiary education is defined by two categories—*Degree/HNC/teacher training/nursing or equivalent* and *PhD/DPhil or equivalent* in all four ESS 1–4 data.

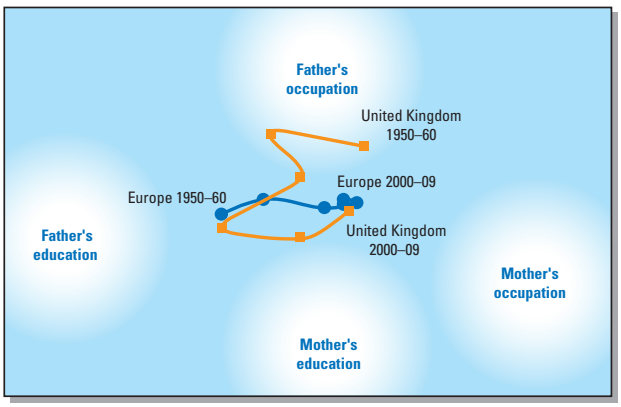
Inequality index
United Kingdom 1950–2009



The proportion of adults with tertiary qualifications in the population confirms that the tertiary education in the United Kingdom has entered the universal stage in the recent years. Moreover, participation in tertiary education and consequently also the proportion of graduates in the relevant age group is growing, hovering above the European average in all historical periods.

Inequality index. The development of the index shows that inequalities in access to tertiary education in the United Kingdom were lower than the European average at first, and nearly copied it later. At the same time, they were affected by significant fluctuations. The Inequality index was markedly below the average especially in the 1950s when it belonged to the lowest ones in Europe. In the following decades inequalities oscillated still below the European average, reaching its level as late as the 1980s. The decline of the Inequality index level from the 1990s to the present has been caused by evening up chances in long university programmes.

Typology of family background factors
United Kingdom 1950–2009



Family background factors. The analysis of the entire sample, covering all age cohorts according to the characteristics of the respondents' family background when they were at the age of fourteen, reveals that all four family background factors have a long-term impact on the attainment of tertiary education in the United Kingdom: father's occupation, mother's occupation, father's education and mother's education.

Predominantly ***father's occupation*** proves to be decisive in the first three historical periods (from the 1950s to the 1970s), being the only one important family background factor in the 1950s. Its effect was strongest in the 1960s when children of fathers with the highest occupational status had even more than four times higher chances of achieving tertiary education as compared to children of fathers with the lowest occupational status. Since the 1980s the relative effect of father's occupation has been decreasing, and but even today it has reached the lowest level of all.

Father's education is, in the long term, another important factor in the attainment of tertiary education in the United Kingdom. Whereas as late as the 1950s its impact was quite unimportant, as early as the 1960s children of fathers with the highest level of educational attainment had almost three times higher chances of achieving tertiary education as compared to children of fathers with the lowest level of educational attainment. In the 1980s the effect of father's education surpassed the effects of other family background factors and became the strongest factor. Although it has decreased in the following years, it is still the strongest one.

The two remaining family background factors, mother's education and mother's occupation, started to be important in the United Kingdom as late as the 1960s or rather 1970s when they did not yet reached the importance of father's characteristics. The effect of ***mother's education*** increased, however, from that time and it reached its climax in the 1990s when children of mothers with the highest level of educational attainment had about three times higher chances as compared to children of mothers with the lowest level of educational attainment. The effect of ***mother's occupation***, the weakest till the 1990s, has reached its climax as late as the present when children of mothers with the highest occupational status have about two times higher chances of achieving tertiary education as compared to children of mothers with the lowest occupational status.

Period of graduation	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2009
Number of respondents	1 407	1 811	1 834	2 198	1 936	980
Tertiary education graduates	236	411	563	741	738	286
Graduation rate (in %)	**17**	**23**	**31**	**34**	**38**	**29 / 51***
Odds ratio on tertiary education attainment for childrens from families with different socio-economic status						
Father's occupation O1/O4	3.8	4.2	2.7	2.7	2.3	1.6
Mother's occupation O1/O4	1.7	1.7	1.8	1.4	1.7	2.0
Father's education O1/O4	1.6	2.1	2.6	4.0	3.2	2.5
Mother's education O1/O4	1.5	1.6	1.5	2.1	2.9	1.9
Inequality index (0–100)	**38**	**44**	**40**	**48**	**48**	**44 / 44***

*) revised

In conclusion, ***the most important*** family background ***factor*** in access of young people to tertiary education in the United Kingdom today is their fathers' occupation; the least important one is mother's education. At the same time, the effects of all four factors are important, showing smaller differences than earlier.

Over the last fifty years the weight of individual factors tilted at first in favour of father's characteristics—from the 1950s to the 1970s it was predominantly father's occupation and during the next years to the present also father's education that was the decisive factor in whether or not a child achieved tertiary education. During the 1990s the effect of mother's education even surpassed the effect of father's characteristics. At present the effect of mother's occupation has increased as well; however, the effect of father's characteristics has still prevailed.

Who gets a degree? Access to tertiary education in Europe 1950–2009

Education Policy Centre, Prague 2010
Authors: Jan Koucký, Aleš Bartušek and Jan Kovařovic
Translation: Hana Čechová, Anna Koucká and Jan Kovařovic
Graphic design: Marek Nepožitek

Faculty of Education, Charles University in Prague
M.D. Rettigové 4, 116 39 Prague 1, Czech Republic

Kdo získává diplom? Přístup k terciárnímu vzdělání v Evropě 1950–2009

Středisko vzdělávací politiky, Praha 2010
Autoři: Jan Koucký, Aleš Bartušek a Jan Kovařovic
Překlad: Hana Čechová, Anna Koucká a Jan Kovařovic
Design: Marek Nepožitek

Pedagogická fakulta, Univerzita Karlova v Praze
M. D. Rettigové 4, 116 39 Praha 1, Česká republika

Náklad 600 výtisků
Rozsah 200 normostran

ISBN 978-80-7290-441-9

Education Policy Centre

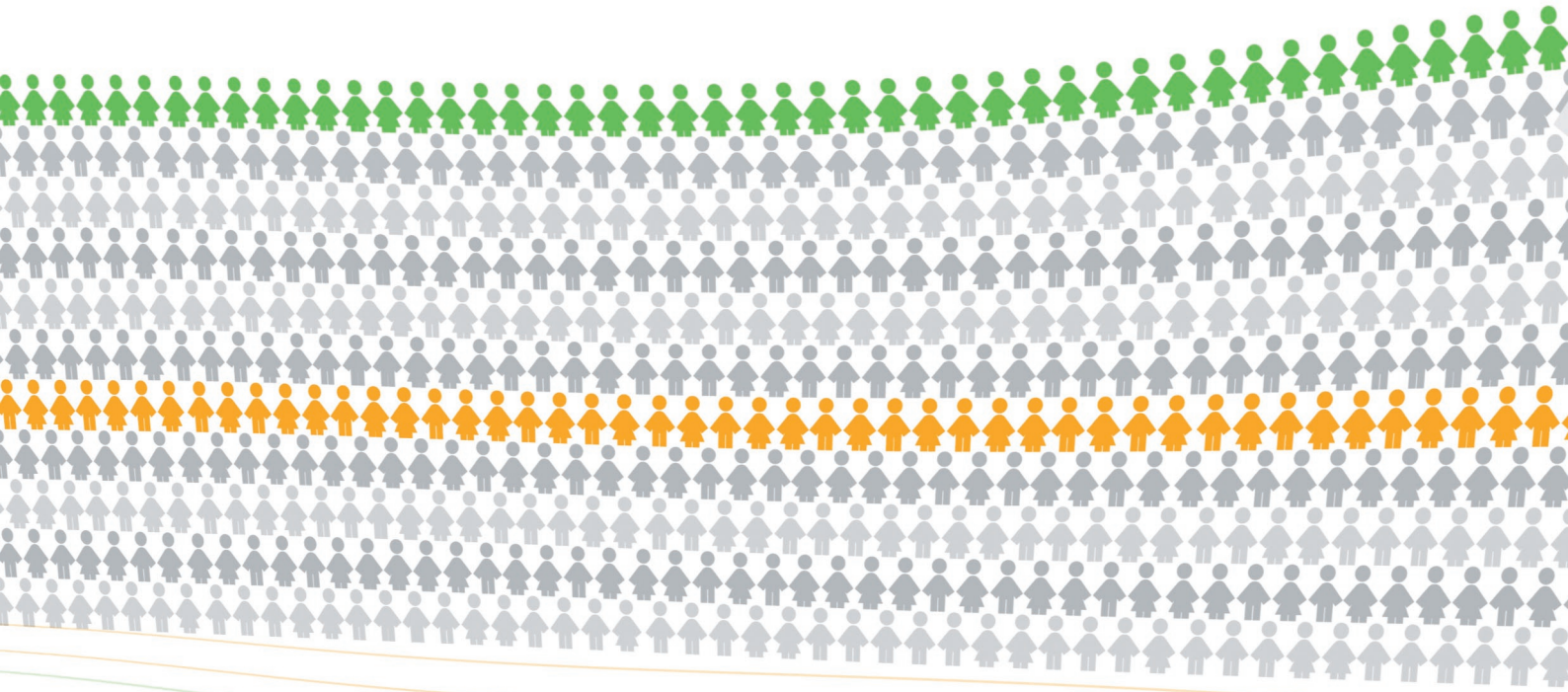
Faculty of Education, Charles University in Prague

The Education Policy Centre (EPC) was set up in 1994 as a research and advisory unit within the Faculty of Education of Charles University in Prague. Since the establishment, its main tasks have included **analysing and evaluating the development of the Czech education system**, setting it in a wider social and economic context and in an international perspective, identifying new requirements on education and human resource development and formulating its aims and objectives, as well as carrying out research in specific areas.

Thus the EPC has been engaged in **comprehensive studies** focusing on the relationship between the overall development of society and corresponding transformation of education systems, stressing the interdependence of individual aspects and measures of education policy. At the same time, the EPC has been carrying research focusing on **selected themes of special interest**, such as level, sources and effects of inequality in education (particularly in access to tertiary education), evaluation and monitoring of schools and education systems, higher education financing and typology, the transition from school to work and the position of graduates on the labour market, and anticipation and forecasting of qualification requirements.

The EPC has also participated in major **international comparative projects**, such as both European surveys of the role of higher education graduates on the labour market—the survey *Higher Education and Graduate Employment in Europe* (CHEERS), conducted in 13 countries in 1998–2000, and the survey *The Flexible Professional in the Knowledge Society–New Demands on Higher Education in Europe* (REFLEX), conducted in 15 countries in 2005–2007. EPC is also participating in the VW project *Educational Systems and Labour Markets in CEE*, to be carried out in 2007–2009. Currently, the EPC is participating in the European project *Forecasting skill supply and demand in Europe*, to be carried out in 2009–2012.

Education Policy Centre, Faculty of Education, Charles University
Malátova 17, 150 00 Prague 5, Czech Republic
tel.: +420 221 900 513
e-mail: jan.koucky@pedf.cuni.cz



ISBN 978-80-7290-441-9