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European Centre for the Development
of Vocational Training

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REFERENCE SERIES

Modernising vocational education and training

Fourth report on vocational training
research in Europe: background report

Volume 1



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in Europe: background report

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Foreword

The skill levels of the European Union's (EU) workforce must be raised to improve competitiveness, growth rates, job prospects, and promote social inclusion. At the Lisbon Council in 2000 the EU institutions, Member States and social partners made a commitment to devise policies to modernise their education and training systems to make them the best in the world by 2010. The EU and the Member States launched the Copenhagen process in 2002, specifically to strengthen European cooperation in improving VET policy. As part of the process, the Member States agreed to work closer together on several priorities. They agreed to look at ways to improve VET's status and quality to attract more people into it: to make VET more responsive to the needs of a labour market with an ageing workforce and many who find it hard to get a job. They also agreed to encourage more employers to offer training places, and adapt training to meet better new demands at the workplace. Cedefop, as the EU's agency supporting vocational education and training (VET) policy development, is actively involved in this process.

Cedefop's strategic objective is to contribute to achieving the Lisbon goal to modernise VET. To serve its strategic objective, Cedefop supports evidence-based policy-making through research findings and policy analyses. Research and policy-making often seem to have different agendas. Researchers' interests may not match those of policy-makers who, in turn, can be too busy to take into account what researchers are saying. Consequently, basing policy decisions on firm research evidence can be difficult to achieve. Cedefop's fourth research report addresses this issue. It brings together experts from the world of research to discuss policy matters for VET in the EU. The common VET policy priorities agreed between EU ministers for education in the Copenhagen process constituted the backdrop to select the issues discussed in the report.

The report provides a thorough review of research into the major aspects of EU VET policy priorities. It forms a valuable body of knowledge to inform European VET policy-making.

Aviana Bulgarelli
Director of Cedefop

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Cedefop would like to thank Pascaline Descy, Guy Tchibozo and Manfred Tessaring, project managers in Cedefop and editors of the contributions gathered in this book. It would also like to thank all the authors of the articles for their valuable input. A special thanks also to Roula Panagiotou, secretary to the project.

Other volumes of the background report

The background report to the fourth research report is composed of two other volumes published separately, the content of which is detailed below.

Volume 2

Introduction: modernising vocational education and training – a fourth Cedefop report on VET research

Pascaline Descy, Guy Tchibozo, Manfred Tessaring

New and emerging issues in vocational education and training research beyond 2010

Catherine Béduwé, Jean-François Germe, Tom Leney, Jordi Planas, Marianne Poumay, Russel Armstrong

The training and development of VET teachers and trainers in Europe

David Parsons, Jacqui Hughes, Chris Allison, Kenneth Walsh

Learning at the workplace

Elke Gruber, Irene Mandl, Thomas Oberholzner

The learning society as a greying society: perspectives of older workers and lifelong learning

Tarja Tikkanen

‘Through the looking-glass’: diversification and differentiation in vocational education and training and higher education

Torsten Dunkel, Isabelle Le Mouillour, Ulrich Teichler

Policy learning – applying the changing learning paradigm for policy advice on VET reforms in transition countries

Peter Grootings, Sören Nielsen

Volume 3

Introduction: modernising vocational education and training – a fourth Cedefop report on VET research

Pascaline Descy, Guy Tchibozo, Manfred Tessaring

Improving the attractiveness and image of VET

Johanna Lasonen, Jean Gordon

Legibility of qualifications: an issue as long-standing as Europe

Annie Boudier, Françoise Dauty, Jean-Louis Kirsch, Philippe Lemistre

The role of national qualifications systems in helping to modernise vocational education and training systems

Mike Coles, Patrick Werquin

European strategies and priorities for modernising vocational education and training

Sandra Bohlinger, Dieter Münk

Towards knowledge-based societies: indicators of European competitiveness

Manfred Tessaring

Introduction: modernising vocational education and training – a fourth Cedefop report on VET research

Pascaline Descy, Guy Tchibozo, Manfred Tessaring

The series of reports on vocational education and training (VET) research have been published by Cedefop since 1998⁽¹⁾. The reports give a comprehensive review of current socioeconomic research related and relevant to VET and skill development in Europe, its results and implications for policy and future research. Research reports are a tool for evidence-based policy making. Attention is always paid to the theoretical and methodological foundations of research.

Each research report consists of a background report of several volumes with contributions from renowned researchers of which this is one and a synthesis report written by Cedefop experts.

Fourth research report: modernising vocational education and training

Modernising VET is the overarching theme of the fourth research report. It aims to provide and discuss the evidence-base for the process of enhanced cooperation in VET which sets priorities for reforming VET to contribute to the Lisbon process⁽²⁾.

This fourth research report aims to document, discuss and analyse the socioeconomic context, and process of reforming VET, based on latest research evidence. The report intends to inform and improve policy-making and develop the VET research agenda.

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- (1) Cedefop. *Vocational education and training – the European research field: background report*. Volumes I and II. Luxembourg: Publications Office, 1998 (Cedefop Reference document, 3002).
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Cedefop; Descy, P.; Tessaring, M. (eds). *Evaluation of systems and programmes: third report on vocational training research in Europe: background report*. Luxembourg: Publications Office, 2004 (Cedefop Reference series, 57).
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Cedefop; Descy, P.; Tessaring, M. *The value of learning – evaluation and impact of education and training: third report on vocational training research in Europe: synthesis report*. Luxembourg: Publications Office, 2005 (Cedefop Reference series, 61).
- (2) http://ec.europa.eu/education/copenhagen/index_en.html.

Enhanced European cooperation in vocational education and training

In 2002, the ministers for vocational education and training of 31 European countries and the European Commission adopted the Copenhagen declaration⁽³⁾. It underlines the contribution of VET to achieving the Lisbon goals and sets priorities for VET reforms systems to be implemented through enhanced cooperation. Every two years, the Member States' progress in modernising VET is reviewed and priorities for reforms are refined.

The first review was in Maastricht in December 2004. The Maastricht communiqué noted progress and refined the VET priorities. It identified reforms to be made and action to be taken at national and European levels. The communiqué focused particularly on:

- (a) the image and attractiveness of the vocational route for employers and individuals, to increase participation in VET;
- (b) achieving high levels of quality and innovation in VET systems to benefit all learners and make European VET globally competitive;
- (c) linking VET with the labour-market requirements of the knowledge economy for a highly skilled workforce, and especially, due to the strong impact of demographic change, the upgrading and competence development of older workers;
- (d) the needs of low-skilled and disadvantaged groups for the purpose of achieving social cohesion and increasing labour-market participation.

The second review of the Copenhagen process by the European ministers for vocational education and training, European social partners and European Commission was in December 2006, in Helsinki. The Helsinki communiqué reaffirmed the need to invest in human capital and skills but proposed a more focused approach with a limited number of priority areas and clear targets. While the Copenhagen and Maastricht priorities remain

valid, the process needed strengthening, until work focuses on the following priorities:

- (a) the image, status and attractiveness of VET, placing emphasis on good governance of VET systems, institutions and/or providers;
- (b) further development, testing and implementation of common European tools, which should be in place by 2010;
- (c) strengthen mutual learning and improve the scope, comparability and reliability of VET statistics by 2008;
- (d) active involvement of all stakeholders, as the Copenhagen process moves towards an implementation phase.

The background report – Volume 1

As in the previous editions, the background report collects contributions from renowned experts and researchers. Contributions have been regrouped into three separate volumes. The present volume addresses the socio-economic context which influences VET modernisation and reform.

Terry Ward's contribution on geographical mobility considers first the drivers which seem responsible for encouraging people to move from one part of the EU to another, to study or work, as well as the various obstacles which impede movement. Second, he examines the extent of movement both across the EU and into the EU from outside. In addition, he considers the scale of people living in one region or country and commuting to work in another, an alternative form of labour mobility. Third, the analysis examines implications of the relatively small scale of geographical movement within Europe and considers the obstacles to mobility which might explain this. In so doing, it assesses the extent to which they are open to policy influence. Finally, he reviews existing policy in the EU to increase geographical mobility, focusing on measures relating to education and VET in particular. He examines efforts to reduce barriers to labour movement

(3) Declaration of the ministers for education and the European Commission convened in Copenhagen in November 2002.

as well as the accompanying policies which seem necessary to tackle the potential adverse effects which increased migration flows across Europe might have.

Giorgos Tsakarissianos examines if, and how, education, including VET, can overcome rather than reinforce social class status, barriers and inequalities. Starting with a review of basic concepts and definitions related to social mobility, he examines social mobility trends in Europe based on empirical data and findings from comparative research. Then the mediating role of education between class origin and destination is discussed, in particular the effect of social inheritance on educational attainment. The impact of certain educational reforms on social fluidity, especially those that promote convergence between general and vocational education, is examined to evaluate which policies and measures could reverse or attenuate inequalities rooted in education systems. Finally, he addresses effects of emerging labour market requirements and recruitment criteria – which emphasise ‘soft skills’ – on redefining social class inequalities.

Social inclusion and social cohesion are important policy objectives with regard to the Lisbon goals. In their contribution, John Preston and Andy Green explore relationships between cohesion, exclusion and VET with particular reference to new exploratory research using the latest sweeps of the European and world values survey. In their introduction they chart the historical and contemporary ways in which societies have attempted to reconcile cohesion and inclusion through various forms of VET and socialisation. The authors believe there has been a movement away from socialisation in VET towards an emphasis on narrow forms of inclusion, through employability, rather than social inclusion and cohesion. Their empirical analysis points at the multidimensional aspects of social exclusion, and its different meanings across countries. Combining empirical and policy analysis, they suggest that targeting VET towards specific client groups is not necessarily the optimal policy choice. The second part of the paper argues that cohesion is compatible with, and indeed conducive to, economic growth under certain circumstances.

Their empirical analysis tends to show that VET may also have a role to play in reducing educational inequalities and in value formation, both conducive to social cohesion. The authors conclude by developing a conceptual model of social cohesion regimes, indicating the difficulties of policy borrowing while pointing to possibilities to develop progressive VET systems in national polities.

Olga Strietska-Ilina reviews selected literature on skill shortages to identify main skills and occupations in which shortages are reported, putting together results from statistics, irregular surveys and analyses mostly at European level and as far as possible in Member States. Their contribution reveals that skill shortages have adverse effects at a company, regional, national and eventually European level. Mostly they affect technology- and knowledge-intensive industries having the highest growth potential and positive spin-offs for the whole economy and employment. The main reasons identified for skill shortages are labour-market tightness – small labour reserves; economic, social and institutional conditions; skills mismatch; and deficiency in recruitment practices, work organisation, wage policies and working conditions. The analysis shows that skill shortages are expected in high-skill intensive and elementary occupations. At the same time an increasing demand for higher skilled people is expected across all occupations due to technological change and innovation. The author emphasises the importance of recognising skill/labour shortages as a European-wide problem needing European-level policy measures and makes several suggestions on how to improve the knowledge base on skill shortages in Europe.

In designing policies to stimulate private investment in initial and continuing vocational training it is essential to know who will benefit from training investment in: the employer, individual or society as a whole. If any party, employer or individual, not sharing the benefits of training may hamper a training programme’s success. Wendy Smits’ contribution develops a theoretical framework to characterise vocational training. She identifies four factors that determine to what extent different parties will share in the

returns from training, namely: the degree of firm-specificity of the training; the degree of imperfect competition on the market for trained workers; the retention rate of trained workers and their bargaining power. This framework is used to review the empirical literature on private benefits from training for employers and individuals. Special attention is paid to empirical evidence on the four factors determining the division of the returns to training.

Lex Borghans and Bart Golsteyn's contribution provides a framework for thinking about the effect of information, advice and guidance (IAG) on the efficiency of VET. They review literature and empirical research for the US and European countries, with a special focus on the

Netherlands. The authors' theoretical point of departure is that there are optimal investments in human capital and an optimal timing of these investments. Uncertainty about labour-market developments and about individual capabilities and preferences increases the probability of 'wrong' or sub-optimal education and training decisions. This lowers the efficiency or productivity of the acquired human capital and makes some people reinvest in education or training to repair earlier investments. With this background, the paper discusses the effect of IAG on initial education and training choices, on continuing training and on informal learning, before concluding on the implications for research, policy, and practice.

Geographical mobility

Terry Ward

Abstract

The analysis begins by considering the drivers which seem to be responsible for encouraging people to move from one part of the EU to another either to study or work. This includes consideration of both push factors which persuade people to move out of a particular country or region and the pull factors which attract them to set up home and take up employment somewhere else. The effect of both factors, however, is tempered by the transactions costs involved in moving from one area to another but help explain why the scale of movement is not larger than it is. These take various forms, including breaking the social ties which bind someone to a particular locality as well as the tangible costs of moving and setting up home elsewhere. It also examines the empirical evidence available to throw light on the relative importance of these different factors as well as of the various obstacles which impede movement.

Second, it examines the extent of movement both across the EU and into the EU from outside, or more precisely, it reviews the various sources of data available at EU level which throw light on this, all of which are incomplete or have serious limitations. In particular, it considers data from administrative sources, household surveys, population estimates and censuses.

In addition, it considers the scale of commuting, of people living in one region or country and working in another, which is an alternative form of labour mobility, and how this varies across countries as well as in relation to migration as such.

Third, the analysis examines the implications of the relatively small scale of geographical movement within Europe indicated by the available data and considers the obstacles to mobility which might explain this. In so doing, it assesses the extent to which people are open to policy influence and the potential importance of increasing mobility between both regions and countries across Europe for economic development and for achieving a better balance of supply and demand in labour markets and, in particular, for alleviating skill shortages. It also draws attention, however, to the possible downside of increased movement of labour in terms of exacerbating regional disparities and imbalances in the spatial distribution of population given the characteristics of the people who tend to move. The 'brain drain' phenomenon is considered an important aspect of this and the evidence on its scale and consequences for various parts of Europe is examined.

Finally, it reviews existing policy in the EU towards geographical mobility, focusing on measures relating to education and vocational training, in particular, and examines the effort currently being made to reduce barriers to labour movement as well as the accompanying policies which seem to be called for to tackle the potential adverse effects which increased migration flows across Europe might have. It considers, in addition, other aspects of labour mobility and of employment policy in general which could contribute to achieving a better balance of supply and demand on the labour market in the context of prospective decline in the population of working age and in the number of young people entering the labour market each year.

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Introduction

The ability of people to move freely between countries and regions is one of the fundamental principles of the EU, enshrined in the Treaty of Rome (1957). This freedom applies equally to employment – that all EU citizens should have the right to work where they wish, or where they are best able to find a job or set up in business ⁽¹⁾. The underlying rationale is that such a freedom is not only beneficial in itself but that it is a key means of furthering economic growth and prosperity, a high level of employment, more balanced development and greater convergence of social and living conditions. Securing a higher degree of geographical mobility of the workforce is, therefore, an integral part of economic and employment policy in the EU, important for improving the balance of supply and demand in the market for labour skills and facilitating the adaptation of workers, businesses and regions alike to changing economic circumstances. While this is in line with conventional economic theory, which emphasises the importance of free movement of labour as a means of

helping to ensure that the demand for labour skills is matched by supply, the theory tends to assume away the possibility of large disparities between regions in both economic prosperity and employment opportunities. These can lead to labour movement being predominantly in the same direction, from the less to the more prosperous regions or countries, which, though it might help to alleviate excess demand for workers in the latter and reduce unemployment in the former, might have adverse effects on the regional balance of economic development as well as on the spatial distribution of population.

The risk of this occurring depends on the strength of the forces, or drivers, persuading people to move and their response to them, as well as on the factors giving rise to economic development. These drivers are considered below, along with the scale of geographical mobility of labour, its implications and the policies which have been implemented, or which could potentially be implemented, to increase it.

(1) Although this freedom is a fundamental principle of the EU, temporary restrictions have nevertheless been imposed in 12 of the EU-15 countries on the ability of citizens from the new Member States to take up employment within their borders. These are discussed in this paper.

1. Drivers underlying geographical mobility

Economic theories of migration generally focus on the differences in income levels, employment opportunities, living conditions and other features that exist between regions which induce people to move from one location to another⁽²⁾. In most cases, differentials in income and labour-market conditions are regarded as the most important factors inducing labour movement, though there is some dispute about the relative importance of the two⁽³⁾. According to the simpler forms of such theories, market forces will induce movement from one region to the other to occur until this eliminates the differences concerned, so removing any incentive for people to move. In particular, in the labour market, the influx of people attracted by job opportunities and higher wages will lead to a reduction in both and, accordingly, a tendency for the balance between demand for and supply of labour in different regions and earnings levels to be equalised, though it might take a long time for full equalisation to be accomplished.

More sophisticated theories recognise that there is both uncertainty and transaction costs involved in the process of moving⁽⁴⁾. To move between locations is not costless either in monetary or social terms, nor are the returns or the costs entailed certain or easy to estimate. Account needs to be taken not only of the costs of the move itself in terms of the need to buy or rent accommodation and to cover the costs of transport, but also of the social consequences of moving away from family and friends and having to live in a different and unfamiliar place as well as often having to communicate in a different language. These costs, which are not just one-off but which are likely to persist for

some time, can if they are large enough outweigh the effects of differences in income levels and employment opportunities between regions or countries in inducing movement. Indeed, they are a reason why significant differences of this kind can persist without giving rise to large-scale movement and why eliminating barriers to movement might not necessarily result in any marked increase in migration flows.

The transaction cost theory, which takes account of the costs of integrating into a new society, forging new relations and forming new friendships as well as the costs of perhaps relinquishing much of the social capital built up over the years (e.g. in the form of contacts and social networks) serves to explain why most people prefer not to move away from the place they grew up in, at least on a permanent basis. On the basis of this theory, it would be expected that there would be a greater tendency for the more highly educated and more skilled to move than those with lower education and skill levels. These, therefore, are more likely to be able to overcome language difficulties and the cultural and other problems associated with assimilating into another country. They are also likely to have greater earnings potential and, accordingly, more able to compensate for the various costs incurred in moving, as well as perhaps – though as noted below not for sure – having more chance of finding a job.

On the same argument, wide dispersion of wages – i.e. high rates of pay for the more highly skilled workers relative to lower skilled ones – would tend to increase labour movement insofar as it makes it more worthwhile for people to move. This, more generally, has been put forward as part of the explanation of the

(2) For theories of migration see Massey et al., 1993, 1998.

(3) In general most weight seems to be attached to income differences but several studies have put more emphasis on labour-market considerations (e.g. Alecke et al., 2001).

(4) The fact that market transactions are not costless was first pointed out by Robert Coase in 1937 when explaining, and justifying, the existence of firms (Coase, 1937). The importance of transaction costs has since been emphasised not only in relation to organisations (Williamson, 1994) but also in many other areas.

higher migration rates in the US, where the distribution of wages is more unequal, than in Europe (Bertola and Ichino, 1996; Bertola and Rogerson, 1997).

The scale of these transaction costs, widely defined as above, is important in determining not only the size of migration flows which can be expected but also the extent of labour-market imbalances which is likely to induce movement and, therefore, the strength of geographical mobility as an adjustment factor tending to eliminate, or at least limit, interregional differences in labour-market conditions. If transaction costs are small, then migration becomes a potentially powerful force for correcting differences in unemployment rates and earnings differentials between regions, if they are large, then significant differences in these could persist between regions for long periods of time.

The latter might be the case even if the more artificial elements of transaction costs, such as those stemming from administrative arrangements or customary procedures, such as the non-transferability of pension rights or the incomplete recognition of qualifications obtained elsewhere, are eliminated by policy action or by more enlightened behaviour on the part of employers. It might equally be the case if labour-market regulations, which are emphasised by many as an obstacle to labour mobility since they tend to encourage workers not to change jobs, are relaxed and levels of unemployment compensation are reduced so increasing the incentive to look for work ⁽⁵⁾.

So far as individuals are concerned, the reasons for deciding to move from one place to another can be broadly divided into push and pull factors ⁽⁶⁾. Push factors are essentially those motivating someone to move away from the town, region or country in which they are living. These might be related to the prevailing social and/or political climate which might make for difficulty or hardship in remaining in the place concerned (such as in the case of very low-income countries or those with an oppressive

regime in power). More usually, however, they tend to be related to educational or economic circumstances, to a lack of opportunity in the local area to pursue educational studies or vocational training of the kind and at the level desired or to find a job, or set up a business. In the latter case, the opportunities on offer may be too limited or not in line with the qualifications or aspirations of the person concerned. Indeed, they might be so limited that there is little chance of someone finding employment at all or, if they do, of earning enough to support themselves and their families.

Pull factors are those which relate to the attractiveness of a place in terms of the aspects noted above – the availability of education and training opportunities, job or business openings, the possibility of earning a higher income than elsewhere and a favourable social and political climate.

A key question concerns the strength of these two sets of factors both in absolute and relative terms since this determines the likely extent of movement under specific circumstances and, therefore, the importance of mobility as a potential mechanism for correcting labour-market imbalances across regions. It is equally relevant for assessing the likely extent of future movement between particular places on alternative assumptions about relative conditions in the two, as well as for indicating both the scale of policy measures and the broad aspects on which they should be focused in order either to encourage movement or, as discussed below, to reduce it.

It is, therefore, important to know how bad things need to be in a particular place to induce people to leave and which specific factors are likely to weigh most with them in this respect. By the same token, it is equally important to know how much better things need to be in particular place to persuade people to not to move away. If pull factors predominate, then it may not matter too much how bad the situation is in a particular location if the situation elsewhere,

(5) On this, see David et al. (2006) who emphasise the importance of accumulated social capital as a deterrent to movement. On the effect of unemployment benefits and other factors on the incentive to move in search of employment see Hassler et al. (2001, 2005), Ljungqvist and Sargent (1998, 2002).

(6) In addition to the references cited above see Akkoyunlu and Vickerman (2000).

is significantly better in terms of the various opportunities available. Alternatively, if push factors predominate, the fact that differences exist between two locations might in itself not induce much movement from one to the other if circumstances in the less favourable place are tolerable.

Although theories of migration have tended to focus on movements of labour, the same factors are also likely to influence the decision of young people of whether or not to move to other countries or regions to study or train. In this case, a key consideration is likely to be how far they can gain in terms of their future career prospects and earnings potential from studying abroad, as well as in terms of their more general personal development. Since in most cases, students or trainees are likely to be abroad for only a relatively short time, such decisions are akin to those facing people who move to another country to work for a temporary period, who, as indicated below, tend to face lower transaction costs than those moving for longer periods and are, therefore, likely to be more influenced by smaller differences in income and labour-market conditions than longer-term migrants.

A major difference between students and workers, however, is that whereas the wages the latter can earn are largely observable and immediate, the gains from studying abroad, at least in terms of income, are uncertain and accrue only at some time in the future (there are other, more immediate, gains, of course, for example, in terms of the opportunity to learn another language). It is arguable, therefore, that they need to be relatively large and, accordingly relatively visible, to induce young people to move or alternatively, studying abroad needs to be relatively easy and not very costly both financially and in terms of any adverse effect on future career prospects to make it a low risk strategy ⁽⁷⁾.

1.1. The empirical evidence on drivers

It is difficult empirically to disentangle the relative importance of push and pull factors inducing labour movement since they both generally operate in tandem. Indeed, trying to do so is akin, in some respects, to trying to assess the relative strength of the forces of demand and supply in determining market prices. This, however, has not prevented some from making the effort. Zimmerman (1995), for example, has argued that demand pull factors predominated in Europe in the 1960s, when people were attracted to western Europe by abundant job opportunities, especially from the southern countries, like Spain and Portugal, while supply push factors have tended to dominate, such as in the case of migration from Turkey and the former Yugoslavia.

In practice, there is some evidence that pull factors alone are unlikely to induce movement on a significant scale without push factors also being at work, in the sense that a lack of employment opportunities, low income levels and poor living conditions need to be present to persuade people to move. Once people have made the decision to move away from a particular place, then pull factors tend to come into play in deciding the country or region which they move to. These factors include not only economic considerations, such as the availability of jobs and the level of income that they might have access to, but also social considerations, such as the existence of support to help find accommodation and a job as well to provide longer-term assistance if required. Such support can either come from the State or more usually in the case of migrants from outside the EU, in particular, from networks of compatriots already established in the country concerned. This helps to explain the concentration of

(7) This is the rationale for the EU programmes providing financial support for students studying abroad described below.

migrants – often second generation as well as first generation – in particular locations within countries, most usually in inner city areas or other centres of economic activity.

The importance of push factors in inducing migration flows together with the significance of transaction costs in deterring movement – and accordingly the substantial differences in economic prospects which need to exist to give rise to large-scale flows – is supported by two broad pieces of evidence. First, major differences in labour-market conditions and wage levels have persisted for long periods of time in particular parts of the EU, even in the same country where obstacles to movement are much less significant than between countries. This is the case, in particular, between the south and the north of Italy and the eastern and western parts of Germany. In the latter, therefore, rates of unemployment have consistently been substantially higher in the new *Länder* than in the old over the decade and half since unification – rates in 2005 were still over 20 % in all of the new *Länder*, over twice as high as in the rest of the country – while wage rates remain markedly lower⁽⁸⁾.

Second, the surveys carried out in the central and eastern European countries before enlargement in May 2004 indicated the relatively small numbers who were considering moving to the EU to work after entry or more precisely once they were able to do so, despite the major differences in levels of GDP per head and labour-market conditions⁽⁹⁾. In particular, the International Organisation for Migration (IOM) survey conducted in 1999 found that relatively few people in most of the countries which subsequently entered the EU wished to migrate on a long-term basis (only around 10 % or so – the main exception being Poland, where the figure was 14 %) and most of those that did preferred to go to Australia, Canada or the US than western Europe (Wallace, 1999).

Countries with the greatest migration potential were those with a high level of discontent where incomes were particularly low and where there was significant political instability such as those in the former Yugoslavia and the Ukraine as well as Romania. In addition, problems of ethnic discrimination were an important factor in the former Yugoslavia, Croatia and Slovakia as well as, to a lesser degree, in Romania, while in Poland as well as in these countries, high rates of unemployment were also important. The same study also found that the main reason for not moving were family and community ties.

A subsequent Eurobarometer, conducted in many of the same countries in 2002, came to a similar conclusion in relation to the scale of intended migration. Only an average of 1 % of those surveyed in the countries entering the EU in 2004 expressed a firm intention to migrate after entry and less than 4 % were generally inclined to do so. The figures, however, were slightly higher than average in Poland and more so in Bulgaria and Romania, where economic conditions were even less favourable (Krieger, Eurofound, 2004).

Other informed studies undertaken on the prospects for migration before the entry of the new Member States also estimated that migration flows from these countries to other parts of the EU were likely to be modest for much the same reasons – i.e. the transaction costs involved and the innate reluctance of people to move from places where they have family and social ties allied without a compelling need (see in particular Boeri and Brücker et al., 2000). As indicated below, these forecasts have in the event turned out to be valid in the sense that there does not seem to have been a massive exodus from the countries concerned since entry, even to those Member States – Ireland, Sweden and the UK in particular – which have

(8) This observation is also made by Boeri and Brücker (2001).

(9) In 2001, GDP per head in terms of purchasing power standards ranged from around two-thirds of the EU-15 average in Slovenia to a third of the average in Latvia, while in Bulgaria and Romania, it was only around a quarter of the EU-15 average, while employment rates were significantly lower than in the EU in most countries.

refrained from imposing temporary restrictions on the ability of people from the new entrants to take up employment there (see the section below).

From the Eurobarometer survey, an insight can be gained into the typical characteristics of the people most likely to migrate, which are in line with the empirical evidence on those who actually move between countries, as described below. The typical migrant, therefore, tends to be relatively young, single and well-educated. Those with these characteristics are, accordingly, significantly more likely to move between countries – or indeed regions – than others, which has implications for policy as well as economic development. In particular, the exodus of such people from places with low income levels and a lack of job opportunities, while it might help to reduce excess labour supply, and consequently unemployment, in the short-term is only likely to damage prospects for economic development in the longer run. In combination with the effect of their entry on the more prosperous locations, the outcome is likely to be a widening of economic disparities and a more unbalanced pattern of spatial growth.

While pull factors may, therefore, be insufficient on their own to induce large-scale movement of labour, in the case of the young and well-educated who have access to good jobs and relatively high earnings and for whom the transaction costs involved are likely to be less than for others, they can potentially exert a significant influence. The so-called brain-drain phenomenon, and its implications for the locations which the people concerned move away from, has accordingly given rise to a good deal of concern. This issue is explored further below after examining the scale and nature of mobility as indicated by the data available.

1.2. Short and long-term mobility

A further important issue to emphasise before examining the empirical evidence on geographical mobility is that this concept is not confined to migration as such, especially as indicated by permanent or at least long-term movement on which the above discussion has focused almost exclusively. There are, in practice, several dimensions of geographical mobility regarding those in employment or those in education or training, ranging from commuting, where a person lives in one place and works or studies in another, through short-term or temporary stays in particular locations to a permanent move from one country or region to another. The factors inducing people to migrate discussed above are still likely to be relevant in relation to commuting or short-term moves but transaction costs will tend to be lower, especially in terms of social considerations since such movement involves less disruption of social ties and ways of life. The differences in income levels and employment opportunities between locations required to induce a significant number of people to move from one to the other would, therefore, be expected to be smaller than in the case of long-term migration. This is all the more so given the likely greater possibility of earning income in one place and spending it another where costs are lower – of, for example, working in Austria while living in Slovakia.

In consequence, the surveys of migration intentions conducted in the new Member States before their entry to the EU, which were referred to above, found that many more people in these countries expressed a wish to work in the EU-15 for short periods of time than were intending to migrate. As indicated below, however, it is more difficult to identify such short-term movement than longer-term migration, which itself is already problematic.

2. The scale of geographical mobility in Europe

The concern here is with the scale of movement between countries and regions within Europe and with the characteristics of those that move, focusing, as far as possible, on both movements of labour and those of students and trainees. Use is made of a variety of data sources – virtually all those which it is possible to use for this purpose – to throw light on these issues. Nevertheless, the analysis is severely constrained by the nature of the data available or, more precisely, by the lack of satisfactory statistics for most of the aspects which are relevant. This inevitably affects the conclusions that can be drawn.

The section examines:

- (a) the relative number of students moving between European countries to pursue their studies, focusing on those undertaking programmes at university or equivalent level (i.e. ISCED 5 and 6), largely because these data are available for these at EU level but not for other students or trainees;
- (b) the influx of people in general into European countries both from other parts of Europe and from outside and their division between men and women as well as between age groups;
- (c) the number of non-nationals living in Member States and the relative numbers who come, on the one hand, from other European countries and, on the other, from outside Europe;
- (d) the education levels of the people concerned and the jobs that they do;
- (e) the scale of movement between regions within Europe (defined at the NUTS 2 level) as well as the direction and how far, therefore, such movement is both affected by differences in labour-market conditions and helps to narrow these;
- (f) the extent of commuting between both regions and countries in the EU.

2.1. The sources of data

There are several data sources which can be used to throw light on the scale of geographical mobility in Europe, none of them satisfactory. They consist of administrative sources, household surveys, censuses of population and demographic statistics.

There are, therefore, administrative data on inflows of migrants into Member States from other parts of the EU and from non-EU countries, movements of people between regions and students moving between European countries to pursue their studies. These data are collected in the process of enforcing border controls or from records of residence or enrolment in tertiary education programmes. They are not necessarily comparable between countries because of differences in regulations and in the recording procedures followed as well as in classification conventions.

Moreover, the data compiled on inflows of migrants and movements between regions at the EU level at least are incomplete in that they are not available for all countries (France being a notable example), are rarely up to date (for several countries, there are no data on inflows after 2001 at the time of writing), and cover only those migrants who are officially registered on entry. Illegal immigrants are, of course, not recorded or even, in most cases, estimated and the indications are that these have increased in number in many European countries over recent years. This, in practice, is more of a problem regarding measuring inflows of migrants into European countries from outside than of movements between Member States as such. It can still be significant, however, in respect of flows from the new Member States into the EU-15, most of which have imposed temporary restrictions (i.e. for up to seven years from their entry into the EU) on the right of citizens of the former the right to take up paid employment.

Household survey data can, in principle, also be used to measure flows of people between both countries and regions, through questions on where people lived or worked in the year prior to the survey. This applies in particular to data from the labour force survey (LFS), which is conducted quarterly in all Member States. In practice, however, such data are likely to underestimate the numbers involved, possibly substantially, since the sample on which the survey is based, because it is derived from housing registers, will almost certainly under-represent people who have recently arrived in the country or region. The fact that many migrants may not be registered at all because they are not officially resident in the country exacerbates the problem.

Household survey data can be used in addition to give an estimate of the stock of migrants through questions on the nationality of respondents and this has the advantage of being affected less by the non-registration of recent arrivals. The link between nationality and migration, however, holds only insofar as those moving into a country retain their nationality. This, in practice, is not so for many permanent migrants who to a major extent tend to adopt the nationality of their new country of residence if at all possible. In general, therefore, a large proportion of migrants who have lived in a country for some time are likely to have become nationals of the country concerned and will no longer be recorded as non-nationals. This is not so much of a problem if the time taken to acquire nationality is fixed, and therefore knowable, but in fact it differs between different people as well as between countries.

Estimates of mobility based on nationality data, therefore, give an imprecise indication of the scale of movement and one which is not readily comparable across countries. To give just one example, in Germany, the millions of people of German origin who have returned to the country over recent decades will in most

cases be recorded as German nationals rather than as non-nationals and, accordingly will not be counted in the estimates of migration based on such data. In consequence, data on non-nationals tend to under-estimate the stock of migrants to varying extents⁽¹⁰⁾. Nevertheless, data on non-nationals are commonly used to give an indication of the extent of migration in the EU, largely because of the absence of an alternative data source which is both satisfactory and timely.

Censuses of population conducted every 10 years or so in most countries represent a further source of data on nationality and one which ought to give a more reliable estimate of non-nationals than the LFS given their complete coverage of households. The data, however, are not so timely since the last census in most Member States was for 2001.

Estimates of population made each year, in combination with data on births and deaths, represent a further source of evidence, though only of net (inflows less outflows) rather than gross movements⁽¹¹⁾.

An additional source of data which is of a more ad hoc kind are the periodic surveys of people's circumstances and experience conducted across the EU in the form of the Eurobarometer. A survey conducted in 2005, therefore, collected information on the number of people who have moved between regions and countries at some stage in their lives, as well as between jobs, their experience and the factors which motivated them to move.

Finally, household survey data in the shape of the LFS also give an insight into the extent of commuting, or more precisely of the people who live in one country or (NUTS 2) region and work in another.

These various sources of data are used below to give an indication of the scale of geographical mobility across the EU and the characteristics of the people concerned.

(10) In Germany, the practice of recording ethnic Germans as nationals is offset in some degree by the long time it takes many non-nationals to acquire nationality.

(11) In brief, estimates of net migration can be derived by comparing the actual population in any year with that estimated from the population one year before plus the number of births minus the number of deaths.

Table 1: **Students at tertiary level studying in another EU, EEA or candidate country, 1998-2003**

	% studying in another country						Student inflows as % students in country					
	1998	1999	2000	2001	2002	2003	1998	1999	2000	2001	2002	2003
EU-25	2.0	2.2	2.2	2.2	2.1	2.2	2.3	2.5	2.5	2.6	2.6	2.7
EU-15	2.1	2.3	2.4	2.3	2.2	2.2	2.6	3.0	3.0	3.0	3.0	3.2
BE	:	2.5	2.7	2.7	2.7	3.0	:	6.2	6.6	6.6	6.8	6.2
CZ	1.0	1.2	1.3	1.5	1.6	1.9	1.0	1.0	1.2	1.9	2.1	2.8
DK	2.6	2.8	2.8	2.7	2.7	2.8	2.5	2.7	2.6	2.8	3.0	3.5
DE	1.6	1.9	1.9	2.0	2.1	2.1	4.6	4.8	5.1	5.3	5.5	5.6
EE	2.3	2.4	2.6	3.2	3.0	3.2	1.3	1.4	1.3	0.9	0.5	1.3
GR	13.8	14.1	12.4	10.9	8.7	8.0	:	:	:	:	1.4	1.9
ES	1.0	1.1	1.2	1.2	1.2	1.2	1.0	1.1	1.3	1.4	1.5	1.6
FR	1.3	1.9	2.0	2.0	2.1	2.1	1.9	1.9	2.0	2.0	2.0	2.4
IE	11.7	11.1	9.6	8.1	7.5	7.7	2.5	2.3	2.4	2.6	2.4	2.4
IT	1.4	1.8	1.9	1.9	1.8	1.8	0.8	0.7	0.7	0.8	0.7	0.8
CY	:	32.7	46.5	44.4	52.3	53.6	:	3.1	4.0	3.9	3.9	3.7
LV	1.0	1.2	1.3	1.4	1.3	1.7	0.2	0.2	0.4	0.6	0.5	0.6
LT	1.5	1.5	1.8	2.1	2.2	2.4	0.1	0.1	0.1	0.1	0.1	0.1
LU	71.8	71.4	74.5	68.7	66.0	66.7	27.0	21.9	24.5	:	:	:
HU	1.8	1.8	1.8	1.8	1.8	1.7	1.5	1.5	:	2.2	2.1	2.0
MT	:	8.3	8.2	7.0	12.4	5.9	:	1.9	1.6	1.5	3.0	1.4
NL	1.5	2.2	2.1	1.9	1.8	1.9	:	1.6	1.6	1.9	2.2	2.3
AT	4.0	4.2	4.0	4.0	4.9	5.0	8.6	8.9	9.1	9.4	10.2	10.7
PL	0.9	0.9	0.9	0.9	1.0	1.1	0.1	0.1	0.1	0.1	0.1	0.1
PT	2.3	2.6	2.4	2.5	2.4	2.6	:	:	0.6	0.7	:	0.7
SI	1.9	1.7	1.8	1.8	1.8	2.0	0.4	0.4	0.5	0.5	0.5	0.5
SK	2.6	3.0	3.0	5.5	6.5	8.0	:	:	0.6	0.5	0.5	0.4
FI	2.9	3.3	3.3	3.1	3.2	3.2	0.7	0.7	0.8	0.9	0.9	1.0
SE	2.7	2.7	2.8	2.8	2.5	2.4	2.8	4.1	4.2	4.3	4.3	4.3
UK	0.7	0.7	0.8	0.7	0.6	0.6	5.8	6.1	5.9	5.7	4.9	4.8
BG	1.9	2.6	3.2	4.3	6.0	7.4	2.2	2.0	1.9	1.8	2.0	1.4
HR	:	:	:	:	:	6.8	:	:	:	:	:	0.1
RO	1.5	1.7	1.5	2.1	2.1	2.2	1.5	1.2	1.0	0.6	0.5	0.3
TR	:	2.4	3.3	2.1	2.1	1.8	:	0.2	0.5	0.3	0.2	0.1
IS	18.3	18.5	17.0	16.4	15.4	15.9	1.8	1.9	3.2	3.2	3.1	3.2
LI	:	:	22.1	:	:	28.3	:	:	:	:	:	:
NO	4.4	5.1	4.7	5.0	4.7	4.6	1.6	1.7	2.0	2.2	2.2	2.2

Note: Data on foreign students refer to citizenship. This means that permanent residents in a country with citizenship of another country are counted and reported as foreign students.

At that time, Candidate countries were Bulgaria, Croatia, Romania and Turkey.

Source: Eurostat, NewCronos.

2.2. Mobility of students

Data are compiled by Eurostat on the number of students in Europe who move to study in another Member State, candidate country or European Economic Area (EEA) country – or, more precisely, students enrolled in tertiary education programmes who are nationals of another country, which is not quite the same since they are likely to include some who are already resident in the country concerned. Leaving this problem aside, the importance of which is unknowable given the information available, the data give some indication of the scale of mobility among students, even if only for those studying at ISCED 5 or 6 level (i.e. as undergraduate or post-graduate students in universities or equivalent institutions) and not for those undertaking vocational training programmes at ISCED level 3 or 4. They reveal that just over 2 % of students in the EU-25 in 2003 seem to have spent time in another EEA country (including the EU) or in a candidate country (Bulgaria, Croatia, Romania and Turkey) to pursue their studies. They also reveal that some 2.7 % of students studying at this level in the EU-25 came from EEA and candidate countries (Table 1).

Both these proportions have tended to increase in recent years, but more in the case of those from outside Europe than for those moving between Member States to study. In the five years 1998 to 2003, the relative number of students in the EU-25 travelling to other parts of Europe to study (i.e. the countries denoted above) increased by around 10 % (from 2.0 % to 2.2 %), while those coming into the EU from these other parts of Europe rose by 15 % or so (from 2.3 % to 2.7 %). There is little sign as yet, therefore, of the increasing policy emphasis in the EU on young people studying abroad to widen their understanding of different cultures leading to any marked expansion of the numbers doing so.

The relative numbers involved, however, vary markedly between countries. As might be expected, the proportion of students moving to other parts of Europe to study are in the main larger in smaller countries, especially the very small, than in larger ones, though the difference in most cases is relatively small and there are some exceptions. The outflow, therefore, is largest from Luxembourg, where there is no university (some two-thirds of students at ISCED 5 and 6 level moving elsewhere in Europe to study), and smallest from the UK (at under 1 % of total students). At the same time, the outflow from the Netherlands is smaller than from Germany or France. Moreover, the scale of movement differs between several similar sized countries, such as Greece (8 %) and Portugal (2.6 %) or Austria (5 %) and Sweden (2.4 %).

In addition, it was for the most part smaller in the new Member States – Slovakia being the main exception ⁽¹²⁾ – than in the EU-15, though this might have changed since their entry into the EU. The number students travelling abroad was also relatively large in Bulgaria and Croatia.

These differences between countries indicate that population size in itself is only one factor underlying the number of students who choose to study abroad. In some countries, young people seem significantly more inclined to move than in others, which may not necessarily reflect differences in attitudes to movement as much as the options open to them in universities and similar institutions in their own countries as well as the ease or difficulty of moving. In both Ireland and Greece, therefore, the scale of outflows has tended to decline in recent years, perhaps as a result of more options opening up domestically, while in Slovakia and Bulgaria, it has risen markedly. Accordingly, just as the extent of movement differs across countries so too does the direction of change.

The scale of inflow of students into European countries from other parts of Europe also varies

(12) This almost certainly reflects the agreement between the Czech Republic and Slovakia that young people have the right to study in either country.

between them, although the pattern is largely the reverse of outflows with the larger countries tending to experience more students coming to study in relative as well as absolute terms, but again there are exceptions. Whereas in Germany, students from other parts of Europe make up just under 6 % of the total enrolled and in the UK, almost 5 %, in France, it is half the latter and in Italy under 1 %. At the same time, students from other parts of Europe comprise over 6 % of the total in Belgium and over 10 % in Austria, in the latter case, perhaps reflecting its location. Moreover, hardly any students from other European countries go to Poland to study.

In sum, the proportion of students who study in another European country is at present very small. Although the proportion has shown some tendency to rise in recent years, it still falls considerably short of that recommended by the high level task force on skills and mobility, which in 2001 suggested that Member States should 'set a benchmark so that one third of the educational requirements could be fulfilled by studying abroad in another country' (European Commission, 2001a, p. 31).

2.3. Flows of migrants

The administrative data which are available at European level indicate that inflows of migrants into the EU-15 amounted on average to just less than 1 % (0.8 %) of resident population at the beginning of the present century. Inflows into the new Member States and candidate countries were substantially less, reflecting in large degree the lack of employment opportunities and low income levels as compared with the EU-15. Inflows into the EU-15 were slightly below the peak reached around 1990 (when inflows were 0.9 % of resident population), but above the figure in the mid-1990s (0.6 % – Table 2) ⁽¹³⁾.

(13) These figures relate only to countries for which migration data are available for most of the 15 years preceding 2001. They, therefore, exclude France for which there are no complete set of data for any recent year as well as Ireland, Greece, Austria and Portugal. They are, however, indicative of the scale of movement into the EU, at least so far as official migrants are concerned.

Table 2: Annual inflows of migrants by nationality,

	% population			
	Total			
	1985	1990	1995	2001
EU-15	0.4	0.9	0.6	0.8
BE	0.5	0.6	0.8	0.8
CZ	:	:	:	:
DK	0.7	0.7	1.2	1.0
DE	0.7	2.1	1.2	1.1
EE	:	:	:	:
GR	0.3	0.4	0.3	:
ES	0.1	0.1	0.1	1.0
FR	:	:	:	:
IE	0.5	0.9	0.9	1.2
IT	0.1	0.3	0.2	0.4
CY	:	:	0.9	2.5
LV	:	:	0.1	0.1
LT	:	:	0.1	0.1
LU	1.8	2.7	2.5	2.7
HU	:	:	:	:
MT	:	:	0.2	0.1
NL	0.5	0.8	0.6	0.8
AT	:	:	0.9	1.1
PL	:	:	:	:
PT	:	:	0.1	0.2
SI	:	:	0.4	0.4
SK	:	:	:	0.0
FI	0.2	0.3	0.2	0.4
SE	0.4	0.7	0.5	0.7
UK	0.4	0.5	0.4	0.6
BG	:	:	:	:
HR	:	:	:	0.5
RO	:	:	:	0.0
IS	0.8	1.2	1.1	:
LI	:	:	:	8.3
NO	0.5	0.6	0.6	0.8
CH	1.5	2.3	1.6	1.7

EU-15 excludes FR, EL, IE, AT and PT

Total inflow: DE, NO 1995: 1996; EL 1995: 1993; IE 1985: 1987; IT 2001: 2000; CY, LV, LT,

Source: Eurostat, NewCronos.

1985, 1990, 1995, 2001

% total immigrants

Nationals				Nationals from other Members States				Nationals from non-Member States			
1985	1990	1995	2001	1985	1990	1995	2001	1985	1990	1995	2001
32.1	44.8	29.2	20.4	14.7	9.3	16.4	14.5	52.6	45.9	54.4	65.1
20.2	19.5	15.6	15.0	38.7	39.2	42.2	38.3	41.1	41.3	42.2	46.8
:	:	:	:	:	:	:	:	:	:	:	:
44.2	42.7	38.0	39.9	10.4	9.5	10.3	13.2	45.4	47.8	51.7	46.9
16.1	49.0	:	22.1	16.6	7.2	:	13.7	67.2	43.8	:	64.2
:	:	:	:	:	:	:	:	:	:	:	:
19.1	40.6	:	:	28.7	12.4	:	:	52.1	47.0	:	:
69.3	59.6	45.9	5.0	13.4	15.7	15.4	12.1	17.4	24.7	38.7	82.9
:	:	:	:	:	:	:	:	:	:	:	:
:	:	56.4	39.6	:	:	:	27.8	:	:	:	32.6
75.1	42.0	29.4	:	8.2	4.6	11.7	:	16.7	53.4	58.9	:
:	:	:	20.7	:	:	:	39.5	:	:	:	39.8
:	:	:	21.0	:	:	:	4.8	:	:	:	:
:	:	:	15.2	:	:	:	10.0	:	:	:	74.8
:	9.4	7.1	8.9	:	73.6	71.3	71.3	:	17.0	21.6	19.8
:	:	:	:	:	:	:	:	:	:	:	:
:	:	:	0.0	:	:	:	37.7	:	:	:	62.3
41.8	30.8	30.3	29.2	17.4	14.4	15.4	16.8	40.7	54.9	54.3	54.0
:	:	:	16.8	:	:	:	18.4	:	:	:	64.8
:	:	:	:	:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	26.8	:	:	:	73.2
:	:	:	13.2	:	:	:	4.2	:	:	:	82.6
:	:	:	73.8	:	:	:	3.4	:	:	:	22.9
75.3	52.1	39.9	41.8	4.6	4.8	:	9.5	20.2	43.1	:	48.7
15.8	11.2	21.4	27.4	10.5	9.9	17.1	19.6	73.7	78.9	61.5	53.0
47.4	39.7	37.1	:	9.1	13.1	16.7	:	43.5	47.2	46.1	:
:	:	:	:	:	:	:	:	:	:	:	:
:	:	:	91.2	:	:	:	0.4	:	:	:	8.4
:	:	:	0.0	:	:	:	5.4	:	:	:	94.6
70.3	64.9	67.3	:	14.8	13.3	14.1	:	14.9	21.8	18.6	:
:	:	:	:	:	:	:	:	:	:	:	:
31.8	38.4	:	25.8	27.6	13.5	:	28.0	40.6	48.1	:	46.1
26.8	20.4	20.2	19.9	43.2	40.1	36.0	34.6	30.0	39.5	43.8	45.5

Of those moving into Member States, some 20 % were nationals of the country in question returning after a period abroad, 15 % were nationals of other EU-15 Member States, while the remainder – some 65 % – were people from non-EU countries. This differs from the composition of migrants 10 years earlier at the beginning of the 1990s when around 45 % were returning nationals, many of them coming from countries in central and eastern Europe where travel abroad had previously been restricted. The decline in the relative number of returning nationals has been associated with a rise in the number of immigrants from outside the EU, while the number of people from other Member States has tended to fall.

Accordingly, there is little sign of any significant growth in movement between the EU-15 Member States up to 2001 at least, when less than 3 people in every 1 000 moved from one Member State to another. It remains an open question, however, how far such administrative data give an accurate indication of the scale of movement between countries where border controls are non-existent or minimal. This is even more the case for people moving for short periods of time to work, study or train, many of whom are unlikely to be captured by administrative data.

Nevertheless, the data give a reasonable indication of the gender and age composition of migrants. First, they are relatively evenly divided between men and women, with a slight bias in favour of the former, except in Germany (where men make up almost 60 % of immigrants) and the new Member States (where the proportion is also around 60 %). Second, they are predominantly composed of people of working age with a disproportionate number between 15 and 29. Inflows of young people aged 15-24, therefore, amounted on average to around 1.6 % of resident population of this age in 2000 in the EU-15 for which data are available, while inflows of those aged 25-29 amounted to 1.9 %. Since most of these (around two-thirds) came from outside the EU, they represent a potentially important addition to the workforce in the context of a natural

decline in the resident population of this age. A significant number, however, may be students or trainees rather than those coming to work as such.

At the same time, inflows of migrants which add to the potential workforce are offset in large measure by outward migration from Member States. In 2001, this amounted on average to around 0.5 % of resident population for Member States for which data are available (the 10 for which there are data on immigration, less Spain). Again, young people accounted for a disproportionate number of those emigrating, if less so than for immigrants because of the relative importance of non-EU nationals in their 30s and 40s returning to their countries of origin. Indeed, the relatively large number of people who return after working or studying in the EU for a time tends to be forgotten in the popular debate over immigration and its effects.

The relative scale of inward movement is far from uniform across the EU-15. In Denmark, Germany, Spain, Ireland and Austria, inflows amounted to 1 % or more of resident population in 2001 (in Spain, to 1.6 % in 2003), with inflows of those aged 15 to 29 amounting to 2-3 % of resident population in this age group. In Italy, on the other hand, according to the official statistics at least, the figure was only around 0.4 % and in Portugal and Finland, even less than this, while in most of the new Member States, Cyprus and Slovenia apart, inflows on the latest data available amount to only 0.1-0.2 % of resident population.

The composition of migrants also varies across countries. In Belgium, Denmark, the Netherlands, Finland and, most especially, Ireland, returning nationals and people from other Member States made up over half of immigrants. In Spain and Portugal as well as the new Member States, people from countries outside the EU-15 made up well over 70 % of those moving in. Significant movement between Member States, therefore, seems to be limited to a relatively small number of countries, though the potentially large under-estimation of flows, noted above, needs to be kept firmly in mind.

2.4. Inflows of labour

The administrative data described above provide no information on the characteristics of those moving between countries other than their age and gender. Their potential contribution to the workforce in their countries of destination, therefore, can only be guessed at. The LFS, however, gives some insight into the kinds of job which migrants take up and into their education attainment level.

As indicated above, because of the way the sample surveyed is selected, the LFS tends to under-estimate the number of people moving between Member States or into Member States from outside. The scale of this under-estimation is indicated by the data for the years 2001-05, which show that the relative number

of people who were resident in another country a year before the survey was half or less of the number recorded by administrative data (Table 3). Nevertheless, the relative scale of migration into the different countries is broadly in line with that shown by the administrative data – it is relatively large in Denmark, Germany and Spain and relatively low in Italy and Finland as well as in most of the new Member States⁽¹⁴⁾.

The composition of migrants shown by the LFS is also similar to that indicated by administrative statistics. On average, around 65 % of inflows into Member States seem to comprise people from non-EU countries and only around 35 % consist of those from other parts of the EU. Movements between Member States, therefore, again appear to be very small.

Table 3: **The number of people aged 15+ who lived in another country one year before, 2001-05**

	2001-05	2001	2002	2003	2004	2005
BE	0.20	0.12	0.16	0.24	0.30	:
CZ	0.13	:	0.08	0.16	0.13	0.14
DK	0.34	0.37	0.35	0.22	0.30	0.45
DE	0.34	0.35	0.34	0.33	0.29	0.38
EE	0.06	0.07	0.05	0.02	0.09	0.06
EL	0.13	0.15	0.12	0.10	0.14	0.15
ES	0.41	0.37	0.37	0.37	0.45	0.47
FR	0.40	0.39	0.41	:	:	:
IE	:	:	:	:	:	:
IT	0.09	0.12	0.11	0.12	0.07	0.06
CY	2.57	2.62	2.19	2.83	2.67	2.54
LV	0.17	:	0.19	0.20	0.12	0.16
LT	0.51	0.41	0.39	0.63	0.55	0.55
LU	0.40	0.67	0.52	0.11	0.28	:
HU	0.07	0.08	0.09	0.06	0.09	0.04
MT	0.14	0.24	0.20	0.28	:	:
NL	:	:	:	:	:	:
AT	0.62	0.47	0.44	0.38	1.18	0.60
PL	0.09	0.10	0.10	0.08	0.09	0.10
PT	0.28	0.22	0.48	0.26	0.21	0.22
SI	:	:	:	:	:	:
SK	0.07	:	:	0.08	0.07	0.07
FI	0.11	0.11	0.11	0.09	0.09	0.17
SE	:	:	:	:	:	:
UK	0.14	0.11	0.13	0.13	0.16	0.16

Source: EU labour force survey.

(14) For France, for which no administrative data are available, the LFS suggests that inflows are comparatively large and similar to those for Spain, whereas for Greece, it suggests that they are relatively small and only slightly larger than for Italy.

2.4.1. Education levels of migrants

The main added value of the LFS data, apart from their timeliness, is that they contain details of the employment and other characteristics of those moving, though the partial nature of the data, which implies that they may not necessarily cover a representative sample of migrants, needs to be kept in mind.

The data indicate, first, that those moving into Member States over the period 2001 to 2005 (the data have been aggregated in order to increase the sample size) include a disproportionate number of the more highly educated (i.e. those with tertiary level qualifications) in relation to the resident population, especially in the age

group 25-39. This is the case for all Member States, apart from Finland, and applies to both migrants from other Member States and those from countries outside the EU, apart from Spain as well as Finland (Table 4). The same is also the case in the new Member States, though the numbers involved are very small. Inward migration into the EU, therefore, tends to increase the education levels of working-age population (i.e. the potential workforce). Moreover the evidence supports the a priori notion that the more highly educated are more likely to move between countries than those with low education.

Table 4: **Division of people aged 25-39 by educational attainment level and by migration status, average 2001-05**

	Resident population			Migrants from EU-15			Migrants from outside EU		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
BE	25.0	38.7	36.3	21.2	29.8	49.1	23.7	26.3	50.1
CZ	7.3	79.8	12.9	2.2	75.2	22.6	2.4	58.9	38.7
DK	14.5	51.5	34.0	9.5	31.0	59.5	10.2	34.0	55.7
DE	14.3	62.5	23.2	15.3	36.5	48.2	27.5	40.8	31.6
EE	:	:	:	:	:	:	:	:	:
EL	30.6	45.3	24.1	16.6	38.3	45.0	44.2	39.6	16.2
ES	42.6	22.5	34.8	18.4	14.4	67.2	39.9	25.8	34.3
FR	55.2	15.0	29.8	28.5	12.9	58.6	38.0	15.9	46.1
IE	:	:	:	:	:	:	:	:	:
IT	44.1	42.9	13.0	38.5	28.5	33.0	51.2	28.5	20.3
CY	19.7	42.9	37.4	14.6	20.7	64.7	31.6	34.7	33.7
LV	23.8	56.2	20.0	22.9	54.5	22.6	:	49.1	50.9
LT	12.5	59.8	27.7	15.6	53.0	31.4	4.4	60.8	34.7
LU	35.9	42.0	22.1	30.7	21.2	48.1	25.1	25.0	49.9
HU	17.8	65.7	16.5	1.6	68.4	29.9	23.5	57.1	19.4
MT	:	:	:	:	:	:	:	:	:
NL	:	:	:	:	:	:	:	:	:
AT	15.6	66.3	18.1	13.4	60.5	26.2	23.0	49.2	27.8
PL	39.1	43.0	17.9	39.0	39.8	21.2	19.3	45.2	35.6
PT	66.6	18.4	15.0	77.2	2.7	20.0	48.8	29.8	21.4
SI	:	:	:	:	:	:	:	:	:
SK	31.4	55.1	13.5	15.2	52.9	31.9	46.8	35.6	17.7
FI	12.4	48.9	38.7	12.3	54.1	33.6	17.0	51.9	31.1
SE	:	:	:	:	:	:	:	:	:
UK	29.1	39.2	31.7	16.7	42.1	41.2	20.9	42.7	36.4
EU-25	32.7	44.5	22.8	22.6	33.9	43.4	34.5	30.4	35.1

Source: EU labour force survey.

These general conclusions, however, need to be treated with some caution given the nature of the data, which could mean that those included in the sample of the population surveyed by the LFS are not representative of all migrants but are biased towards the better educated. It is difficult to check this possibility, but data on the education levels of all non-nationals living in the country rather than simply those who arrived over the previous year and who ought to be more represented in the sample selected for survey, might throw some light on this. These data are examined below.

2.5. Non-nationals living in Member States

Data from the LFS on the nationality of those living and working in the EU provide an additional and possibly more reliable insight into the extent of geographical mobility, even though the data may tend to under-estimate the number of migrants and not be entirely comparable between countries, as described above.

In 2005, only just under 2 % of people of working age living in the EU-15 were nationals of another Member State (for EU-25, the average is 1.5 %), highlighting the relatively small scale of inter-country movement⁽¹⁵⁾. Leaving aside Luxembourg (where the proportion reaches 38 %), the proportion is largest in Belgium, at just over 6 % (partly reflecting the number working in European institutions and international organisations in Brussels), and next largest in Ireland and Germany, at around 3 %, but in all other EU-15 Member States, apart from Sweden, is under 2 % (in Sweden, it is only slight larger than 2 %). In Greece, the proportion is only 0.3 %, while in all the new Member States, with the exception of Cyprus, it is even smaller. Even taking a long-term view, therefore, the scale of movement of working-age population between Member States seems small throughout the EU, though as emphasised above, the extent of short-term movement might be much greater.

People with nationality of a country outside the EU are much more numerous, making up an average of 5.6 % of those of working-age in the EU-15 (though only 4.6 % in the case of EU-25

countries, emphasising the much lower rate of inward migration into the new Member States). In this case, the proportion in the EU-15 varies from just under 9 % in Spain and Austria and just over 7 % in Germany to only slightly above 1 % in Finland. In the new Member States, the figure is over 17 % in Estonia (most of those concerned being Russians) but under 1 % in all the other countries apart from Cyprus and Malta (Table 5).

Table 5: **Division of working-age population by nationality, 2005**

	Nationals	EU-15 non-nationals	Other non-nationals
BE	91.4	5.7	2.9
CZ	99.3	0.0	0.7
DK	96.0	1.1	3.0
DE	89.5	2.8	7.7
EE	81.3	0.1	18.6
EL	93.9	0.3	5.8
ES	90.2	1.2	8.6
FR	94.4	1.9	3.7
IE	92.3	3.0	4.7
IT	:	:	:
CY	86.5	5.8	7.7
LV	99.3	0.0	0.7
LT	99.4	0.0	0.6
LU	57.9	37.6	4.5
HU	99.3	0.1	0.6
MT	96.9	1.3	1.8
NL	95.7	1.5	2.9
AT	89.2	1.9	8.9
PL	99.8	0.0	0.1
PT	96.8	0.5	2.7
SI	99.6	0.0	0.4
SK	99.8	0.0	0.1
FI	98.4	0.4	1.2
SE	94.3	2.3	3.5
UK	93.7	1.8	4.5
EU-25	93.7	1.7	4.7
EU-15	92.4	2.0	5.6

Source: EU labour force survey.

(15) The data here relate to nationals of the EU-15 living in another Member State and exclude nationals of the new Member States who might also live elsewhere in the EU. These are considered separately below because of the restrictions imposed against them in 12 of the EU-15 Member States.

2.5.1. Education levels of non-nationals

The analysis of inward movement of working-age population above suggested that the education level of those concerned is higher than that of the resident population of Member

States, implying that the more highly educated were more inclined to move. This is not entirely supported by examination of the data on non-nationals – i.e. on the stock of migrants. In 2005, therefore, some 28 % of women aged 25-64

Table 6: Division of people aged 25-64 by nationality status and educational attainment level, 2005

		BE	CZ	DK	DE	EE	EL	ES	FR	IE	IT	CY	LV	LT
Women														
Nationals	Low	35.1	13.8	19.8	16.7	8.8	42.4	52.8	33.8	33.4	:	36.6	13.9	12.1
	Medium	33.1	74.6	44.9	62.8	48.7	38.0	18.9	39.6	37.5	:	37.4	61.1	58.9
	High	31.8	11.6	35.3	20.4	42.5	19.6	28.3	26.6	29.1	:	25.9	25.0	29.0
EU-15 non-nationals	Low	43.5	:	9.0	41.5	:	18.6	24.4	53.6	22.2	:	32.8	:	:
	Medium	28.4	17.6	29.1	40.6	:	47.3	27.6	23.2	31.9	:	25.4	:	:
	High	28.1	82.4	61.9	17.9	:	34.1	48.1	23.3	45.9	:	41.9	:	:
Other non-nationals	Low	54.1	17.0	33.9	54.2	10.1	41.4	42.6	64.4	13.7	:	40.4	6.6	4.7
	Medium	23.0	61.9	37.3	31.0	58.9	42.1	32.4	19.8	32.6	:	33.9	69.6	67.4
	High	23.0	21.1	28.7	14.7	31.0	16.6	25.0	15.7	53.8	:	25.7	23.8	27.9
Men														
Nationals	Low	23.7	4.9	10.7	8.6	3.4	31.2	44.1	26.6	20.5	:	5.4	:	:
	Medium	24.8	60.6	32.1	51.3	14.8	25.3	16.2	40.6	17.5	:	6.8	:	:
	High	20.5	11.0	18.4	25.8	6.4	16.0	24.0	21.3	13.5	:	4.8	:	:
EU-15 non-nationals	Low	43.7	:	13.1	36.7	:	14.6	27.0	53.7	23.6	:	40.9	:	:
	Medium	28.3	44.9	29.2	43.8	14.9	62.7	25.7	25.8	27.5	:	23.4	:	:
	High	28.0	55.1	57.6	19.5	85.1	22.6	47.3	20.5	48.8	:	35.8	:	:
Other non-nationals	Low	49.0	11.6	27.7	40.9	9.7	53.4	48.6	58.3	19.8	:	36.0	:	12.3
	Medium	27.8	57.7	31.2	42.9	64.9	35.8	30.1	24.3	38.6	:	33.7	64.4	60.9
	High	23.2	30.7	41.0	16.1	25.4	10.8	21.4	17.5	41.6	:	30.3	35.6	26.8
Total														
Nationals	Low	34.7	10.1	18.6	13.4	11.2	42.7	52.6	32.0	36.6	:	34.2	16.5	12.9
	Medium	34.5	76.9	48.8	61.3	54.0	36.5	19.0	42.7	35.7	:	38.8	62.1	60.6
	High	30.8	13.0	32.6	25.3	34.9	20.8	28.4	25.4	27.7	:	27.1	21.4	26.5
EU-15 non-nationals	Low	43.6	:	11.4	38.8	:	17.5	25.6	53.6	22.9	:	36.9	:	:
	Medium	28.4	36.8	29.2	42.4	14.9	51.7	26.7	24.5	29.7	:	24.3	:	:
	High	28.1	63.2	59.4	18.8	85.1	30.8	47.7	21.9	47.4	:	38.7	:	:
Other non-nationals	Low	51.5	14.1	31.5	47.5	9.9	47.7	45.6	61.3	17.1	:	38.9	2.9	8.7
	Medium	25.4	59.6	35.0	37.0	61.9	38.8	31.2	22.1	36.0	:	33.9	66.7	64.0
	High	23.1	26.3	33.5	15.4	28.2	13.5	23.2	16.6	46.9	:	27.2	30.4	27.3

Source: EU labour force survey.

from EU-15 living in another Member State had tertiary level education (i.e. a university degree or equivalent), around 2 percentage points more than for nationals, while for men, the proportion (just under 27 %) was slightly less than for nationals (Table 6).

At the same time, the proportion of both men and women from another EU country with only basic schooling was larger than in the case of nationals, especially for men (almost 7 percentage points larger).

LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	EU-25	EU-15
39.6	27.8	80.7	31.6	27.8	16.5	72.2	21.9	15.5	18.7	14.1	34.1	29.6	32.6
45.2	54.1	9.8	40.6	57.4	65.3	13.0	55.1	71.1	41.6	52.0	36.5	46.3	41.8
15.2	18.1	9.4	27.9	14.8	18.2	14.8	23.0	13.4	39.7	33.9	29.4	24.1	25.6
48.0	9.0	71.9	12.1	20.7	:	37.1	:	:	22.5	17.0	17.7	35.4	35.5
27.4	69.0	7.0	52.3	51.1	100.0	37.1	:	:	37.8	47.3	49.4	36.7	36.7
24.5	22.0	21.1	35.6	28.2	:	25.7	:	:	39.7	35.7	32.9	27.9	27.8
29.9	15.7	56.9	45.2	49.0	16.2	59.0	36.8	10.0	31.3	26.4	22.5	45.5	46.5
41.3	66.0	13.6	37.7	36.6	54.6	28.1	39.9	66.1	44.7	36.6	51.7	34.5	33.8
28.8	18.2	29.5	17.0	14.4	29.1	12.9	23.2	23.9	24.0	37.1	25.8	20.0	19.7
2.0	15.0	7.7	19.8	9.3	13.1	56.6	7.4	6.0	14.0	12.6	22.0	23.5	25.6
4.0	48.0	2.1	33.7	41.6	65.1	9.8	28.5	49.9	29.2	39.7	40.1	45.8	40.4
1.8	11.9	1.6	26.6	13.5	13.4	7.6	7.4	9.4	18.3	17.1	26.6	23.3	25.1
45.6	3.3	51.6	12.8	5.9	6.4	44.4	100.0	:	21.6	20.3	18.6	34.6	34.7
24.3	32.5	4.7	51.8	49.2	51.8	23.5	:	100.0	51.9	49.3	52.7	38.6	38.7
30.1	64.2	43.6	35.4	44.9	41.8	32.1	:	:	26.4	30.4	28.8	26.8	26.6
24.6	7.4	61.7	37.6	37.1	8.7	63.1	13.9	:	28.9	27.1	20.4	41.3	42.2
37.8	77.9	27.4	43.2	51.0	32.9	23.2	77.2	47.6	49.3	38.9	55.4	39.4	38.8
37.6	14.7	10.9	19.2	11.9	58.4	13.7	8.9	52.4	21.8	34.0	24.2	19.3	19.0
32.5	24.0	74.2	28.1	21.2	15.4	74.3	19.5	12.4	20.8	16.1	29.4	27.5	30.3
48.3	58.9	14.1	41.3	60.9	68.1	13.1	60.5	73.7	44.6	54.7	40.9	47.8	43.1
19.2	17.0	11.7	30.6	17.9	16.5	12.6	20.0	13.9	34.6	29.2	29.7	24.7	26.6
46.8	5.9	64.5	12.5	13.3	4.2	41.0	100.0	:	21.9	18.7	18.1	35.0	35.1
25.9	49.1	6.2	52.0	50.2	68.2	29.9	:	100.0	47.1	48.3	51.0	37.7	37.7
27.3	45.0	29.4	35.5	36.5	27.6	29.1	:	:	31.0	33.0	30.9	27.3	27.2
27.6	11.9	58.9	41.6	43.0	12.9	61.0	26.1	6.1	30.3	26.7	21.5	43.4	44.3
39.8	71.6	19.3	40.3	43.8	45.0	25.6	57.3	58.8	46.7	37.6	53.5	37.0	36.3
32.7	16.6	21.8	18.1	13.1	42.1	13.3	16.5	35.1	23.0	35.7	25.1	19.6	19.4

There are, however, marked differences in this across the EU. While in Belgium, France, Finland and Germany, especially the last, those from other Member States had lower levels of education than nationals, in most other countries, they had higher levels. This suggests, therefore, that the nature of movement from the rest of the EU into these countries is somewhat different from that into other Member States.

By contrast, those from countries outside the EU generally have lower education levels than nationals. In 2005, around 19-20 % of both men and women aged 25-64 living in the EU who were nationals of non-EU countries had tertiary education, some 7-8 percentage points less than in the case of nationals. The situation was also similar in individual Member States, the only exceptions where the relative number of university graduates among non-EU nationals was higher than among nationals being Denmark, Ireland and Sweden.

This evidence, therefore, seems not to support the hypothesis that the more highly educated people tend to move more than those with lower education levels, at least within the EU. It also suggests that those moving into the EU from outside on average have lower levels of education than the resident population. This, however, does not necessarily signify that it is the less well educated who are more likely to migrate. On the contrary given the much lower levels of education in the countries from which migrants from outside the EU predominantly come (from North Africa, the Middle East and Asia), the evidence is entirely consistent with the better educated in these countries making up a disproportionate number of those migrating.

2.5.2. The activities in which non-nationals are employed

In view of the average education level of those moving into the EU from non-EU countries, it would be expected that they would be employed disproportionately in relatively low skilled activities. This indeed seems to be the case. In the EU-15, nationals of countries outside the EU accounted for 25 % of total employment in private households (working as domestic servants and so on), for around 13 % of employment in hotels and restaurants and

for 8 % of employment in construction (Table 7). In Spain, almost half of those employed in private households were non-EU nationals and in Greece, just over 60 %, while in the former as well as in Austria, non-EU nationals made up around 20 % of employment in hotels and restaurants.

More surprisingly given their similar education levels to nationals, migrants from other EU-15 Member States living in Member States are also employed disproportionately in hotels and restaurants and private households (around 4 % on average in both cases – Table 8). At the same time, slightly more than in proportion are employed in business activities (accounting on average for 2.5 % of employment in this sector in the EU-15).

These findings are broadly confirmed by Census data, which ought to be based on a more complete coverage of non-nationals than the LFS (Table 9). Though they relate to an earlier year (2001 rather than 2005), they indicate a similar proportion of people from other parts of the EU working in Member States (making up 1.8 % of the total in employment), as well as a similar proportion of people from non-EU countries (4.3 %). They also show that a relatively larger proportion of both were employed in hotels and restaurants (non-EU nationals making up around 4 % of the workforce in this sector in the EU-15 on average and those from non-EU countries, almost 10 %) and private households (where the figures were just under 4 % and 20 %, respectively).

2.5.3. The jobs performed by non-nationals by education level

Perhaps a more relevant question from the perspective of both migrants and policy-makers is not so much whether people from other countries are employed disproportionately in low-skill jobs *per se*, but whether the jobs concerned are in line with their abilities, as indicated in particular by their educational attainment levels. This can be examined by considering the occupations which non-nationals with particular education levels perform and how far they differ from those performed by nationals. Most interesting in this regard is in people with relatively high education levels and

Table 7: Employment of non-nationals from outside the EU by NACE sector, EU-25, 2005

	Total	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
BE	1.7	1.7	0.0	0.0	1.7	0.2	2.7	1.6	6.6	1.2	0.5	2.5	1.0	0.8	1.0	1.7	10.1	9.1
CZ	0.8	0.3	0.0	0.0	0.7	0.0	1.3	1.2	1.7	0.6	1.0	1.6	0.1	0.4	0.4	0.6	0.0	0.0
DK	2.0	1.3	0.0	0.0	2.0	2.6	1.2	1.7	9.4	1.7	0.0	2.5	0.5	1.0	2.9	0.8	0.0	52.2
DE	5.5	2.9	0.0	6.6	6.5	1.1	6.6	5.9	16.1	5.8	1.5	6.2	1.2	3.6	3.9	4.8	12.1	7.2
EE	17.3	2.1	25.8	26.2	26.9	28.3	24.5	15.4	19.6	20.1	0.0	19.6	0.7	8.9	11.4	7.7	0.0	0.0
EL	6.2	4.1	2.0	3.7	6.4	0.0	26.0	3.1	8.7	1.9	0.6	3.2	0.0	0.3	1.6	4.1	61.9	39.0
ES	9.6	13.3	1.6	11.8	7.0	1.5	17.0	5.9	20.4	5.7	1.3	6.7	0.7	1.4	3.4	5.5	49.1	64.4
FR	2.6	2.3	0.0	0.0	2.2	0.8	5.8	2.2	7.9	2.2	0.6	4.6	0.3	2.0	1.4	2.3	6.6	43.1
IE	4.8	3.0	0.0	4.0	6.2	1.3	6.7	4.3	15.2	2.5	1.5	4.6	0.3	1.7	4.5	2.3	13.3	5.1
IT*	2.7	3.1		1.5	3.7		4.4	1.8	4.6	2.0	0.5	1.2	0.4	0.8	1.4	2.6	24.9	11.0
CY	8.3	10.2	0.0	0.0	5.9	0.0	6.9	4.1	6.7	2.3	2.0	8.8	0.0	0.7	2.4	1.8	96.9	2.6
LV	0.7	0.3	0.0	0.0	1.5	0.0	1.9	0.5	1.4	0.0	0.0	1.0	0.0	0.0	1.4	0.0	0.0	0.0
LT	0.7	0.4	10.7	0.0	0.6	0.9	0.5	1.1	4.0	0.0	0.0	0.0	0.5	0.1	0.3	2.9	0.0	0.0
LU	4	3	-	-	5	-	6	5	12	3	2	6	1	1	2	6	7	2
HU	0.7	0.4	0.0	1.6	0.6	0.3	1.6	1.0	2.0	0.2	0.1	0.3	0.0	0.4	0.9	0.7	0.0	0.0
MT	2.1	7.7	0.0	0.0	0.8	2.7	1.9	1.3	4.3	1.8	6.0	1.5	2.1	2.0	1.3	3.5	59.0	0.0
NL	1.6	2.1	0.0	0.9	2.3	1.9	1.4	1.4	4.0	1.4	0.9	2.3	0.6	0.6	1.1	1.5	9.7	0.0
AT	7.8	1.7	0.0	7.1	9.6	0.6	14.1	7.0	18.8	6.7	3.0	10.6	1.9	2.8	5.0	5.7	11.0	28.6
PL	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.1	0.0	0.0	0.2	0.1	0.2	0.2	0.0	0.0
PT	2.7	0.4	0.0	0.0	1.3	1.5	6.7	2.3	5.5	1.2	0.7	4.3	0.8	1.4	2.2	3.5	11.8	2.4
SI	0.3	0.4	0.0	0.0	0.1	0.0	2.2	0.1	0.3	0.4	0.4	0.0	0.0	0.1	0.3	0.7	0.0	0.0
SK	0.1	0.0	0.0	0.0	0.2	0.6	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.2	0.3	0.0	2.6	
FI	0.8	0.3	0.0	0.0	0.7	0.0	0.4	0.9	2.9	0.9	0.5	1.4	0.0	0.6	0.7	0.8	1.3	22.1
SE	2.1	1.6	0.0	3.2	1.9	0.2	1.1	1.4	8.5	1.6	0.3	2.9	0.7	2.1	2.4	1.9	0.0	0.0
UK	3.7	1.8	0.0	3.2	3.0	1.6	2.4	3.2	9.3	3.7	3.5	4.3	2.2	2.3	5.5	3.8	6.7	24.6
EU25	4.0	2.7	1.5	3.0	3.8	1.0	6.9	3.4	11.5	3.2	1.6	4.5	0.9	1.8	2.9	3.3	25.0	17.3
EU15	4.7	4.3	0.9	5.1	4.7	1.2	8.1	4.0	12.9	3.8	1.8	5.0	1.0	2.2	3.3	3.8	25.0	20.6
NM10	0.9	0.3	4.6	0.4	1.0	0.8	1.5	1.0	2.6	0.9	0.4	1.3	0.3	0.5	0.7	0.9	25.7	6.1

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 K = Real estate, renting and business activities
 L = Public administration
 M = Education
 N = Health and social work
 O = Other community, social and personal services
 P = Activities of private households
 Q = Extra-territorial organisations and bodies

* IT: Data from the Census of population, 2001.

Note: Outside the EU-15 excludes those coming from central and eastern countries, including the new Member States.

Source: EU labour force survey.

Table 8: Employment of EU-15 non-nationals by NACE sector, EU-25, 2005

	<i>% total employed in sector</i>																	
	Total	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
BE	5.4	1.6	0.0	7.8	5.9	4.1	6.5	6.2	11.7	3.9	3.8	8.1	4.6	2.7	3.2	5.1	11.7	46.4
CZ	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0
DK	1.0	0.9	0.0	0.0	0.9	0.0	0.4	0.5	3.0	2.0	0.4	1.2	0.0	2.1	0.9	1.4	0.0	0.0
DE	2.9	1.2	0.0	1.6	3.6	1.9	1.9	3.2	10.3	2.7	2.0	3.0	0.8	2.3	1.6	3.0	3.7	14.2
EE	0.2	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
EL	0.2	0.0	0.6	0.0	0.3	1.3	0.1	0.3	0.6	0.3	0.2	0.4	0.2	0.2	0.1	0.1	0.2	0.0
ES	1.2	0.6	0.0	0.0	0.8	0.0	0.9	1.1	2.8	1.8	0.5	2.2	0.1	2.6	0.4	2.0	0.5	0.0
FR	2.0	2.6	0.0	3.3	1.9	1.7	6.3	1.3	2.9	1.5	0.5	2.8	0.3	1.1	0.7	1.6	8.8	22.6
IE	3.0	1.2	0.0	1.5	2.7	3.8	2.3	2.4	4.5	3.2	3.9	4.8	0.9	3.6	3.1	4.3	11.9	3.9
IT*	0.3	0.2		0.2	0.2		0.1	0.3	0.5	0.2	0.2	0.4	0.1	0.5	0.3	0.5	0.4	
CY	5.3	0.0	0.0	0.0	4.0	0.0	12.6	5.4	12.1	5.0	2.3	5.9	0.6	3.2	1.9	4.0	0.5	8.4
LV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LU	39.9	16.3	0.0	87.4	39.5	18.4	71.2	40.7	64.6	22.8	43.4	53.0	7.8	11.6	32.6	34.0	82.4	85.5
HU	0.1	0.1	0.0	0.5	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2	0.1	0.0	0.0	0.0
MT	0.9	0.0	0.0	8.1	0.6	0.0	1.6	0.0	1.5	1.4	0.0	4.7	0.0	1.5	0.4	1.0	0.0	0.0
NL	1.5	0.4	0.0	1.5	2.2	0.4	1.0	1.3	2.2	1.7	1.2	2.0	0.7	1.5	1.4	1.7	0.0	56.1
AT	2.0	1.0	0.0	5.8	2.0	1.0	1.0	1.9	3.2	1.2	0.6	2.6	0.6	2.8	2.4	3.3	4.3	11.3
PL	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
PT	0.4	0.1	0.0	0.0	0.5	0.0	0.2	0.5	0.9	0.4	0.4	0.7	0.4	0.6	0.7	0.3	0.0	18.5
SI	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
FI	0.4	0.0	0.0	0.0	0.3	0.0	0.4	0.6	0.5	0.1	0.0	0.6	0.1	0.7	0.3	0.3	0.5	0.0
SE	2.3	0.9	0.0	0.0	2.0	2.4	1.7	1.7	3.4	2.6	1.0	3.0	1.6	2.9	2.5	2.1	0.0	0.0
UK	1.7	0.8	4.4	0.5	1.3	0.3	1.2	1.1	3.3	1.7	2.5	2.4	0.9	2.1	2.1	1.6	4.2	0.0
EU25	1.7	0.6	0.4	0.8	1.8	0.9	1.9	1.5	4.1	1.6	1.6	2.4	0.6	1.6	1.4	1.9	4.0	20.5
EU15	1.9	1.0	0.5	1.2	2.1	1.2	1.9	1.7	4.3	1.8	1.5	2.5	0.6	1.9	1.4	2.1	3.9	11.7
NM10	1.0	0.2	0.0	0.2	0.7	0.3	1.5	1.0	2.4	0.7	1.9	2.0	0.9	0.5	0.9	1.0	7.6	50.7

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- O = Other community, social and personal services
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- Q = Extra-territorial organisations and bodies

* IT: Data from the Census of population, 2001.

Source: EU labour force survey.

Table 9: **Employment of non-nationals by NACE sector, EU-25, 2001 – Census data**

		<i>% total employed in sector</i>															
		Total	A+B	C+E	D	F	G	H	I	J	K	L	M	N	O	P	Q
BE	EU-15 non-nationals	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Other non-nationals	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
CZ	EU-15 non-nationals	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.0	0.2	0.1	0.2	:	:
	Other non-nationals	1.4	0.9	1.0	1.5	1.4	3.2	1.4	0.5	0.7	1.2	0.1	0.6	0.9	1.5	:	:
DK	EU-15 non-nationals	1.1	1.4	0.5	0.9	0.7	0.9	2.7	1.1	0.6	1.5	0.3	1.4	0.9	1.3	0.9	27.5
	Other non-nationals	2.2	1.8	0.5	2.7	0.8	1.9	8.0	2.1	0.5	3.9	0.6	1.8	1.6	1.7	2.4	14.4
DE	EU-15 non-nationals	2.7	1.1	0.0	3.5	2.6	2.3	10.8	2.6	1.5	2.8	0.7	1.5	1.6	2.7	:	:
	Other non-nationals	5.2	2.4	3.2	7.2	5.8	4.8	15.5	5.4	1.7	5.9	1.1	2.3	3.8	4.9	10.3	:
EE	EU-15 non-nationals	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.0	0.2	0.0	0.2	0.0	4.8
	Other non-nationals	18.5	6.1	38.7	27.1	23.5	15.9	17.0	25.2	4.3	15.2	4.6	12.8	12.8	11.1	11.9	12.7
EL	EU-15 non-nationals	0.4	0.1	0.1	0.3	0.2	0.4	0.9	0.6	0.3	0.6	0.1	0.9	0.3	0.6	0.2	9.4
	Other non-nationals	9.2	11.5	2.4	9.6	27.2	4.8	12.1	3.4	1.1	5.5	1.0	1.4	2.5	4.7	75.6	22.6
ES	EU-15 non-nationals	0.8	0.4	0.8	0.6	0.7	0.8	2.2	0.9	0.7	1.3	0.3	1.3	0.6	1.1	0.7	10.7
	Other non-nationals	3.8	8.0	1.8	2.5	6.2	2.6	7.5	2.2	1.0	2.8	0.7	1.1	1.9	3.0	25.6	15.9
FR	EU-15 non-nationals	2.4	1.9	1.1	2.5	7.6	2.1	3.0	1.4	1.2	3.4	0.5	1.1	1.2	2.4	15.1	24.3
	Other non-nationals	2.8	2.2	1.1	2.9	5.5	2.6	7.0	2.0	0.9	4.3	1.0	1.5	1.8	3.1	7.5	25.8
IE	EU-15 non-nationals	4.2	1.5	2.4	4.4	3.5	3.7	7.9	4.1	4.0	6.6	1.4	3.9	3.9	5.0	7.9	26.5
	Other non-nationals	3.5	2.0	1.1	2.9	1.8	2.2	8.5	1.8	2.0	3.7	0.8	1.4	4.4	2.4	8.6	24.8
IT	EU-15 non-nationals	0.3	0.2	0.2	0.2	0.1	0.3	0.5	0.2	0.2	0.4	0.1	0.5	0.3	0.5	0.4	9.7
	Other non-nationals	2.7	3.1	1.5	3.7	4.4	1.8	4.6	2.0	0.5	1.2	0.4	0.8	1.4	2.6	24.9	11.0
CY	EU-15 on-nationals	4.6	0.7	1.2	3.2	8.7	3.9	9.1	5.0	1.9	5.2	2.7	3.9	2.5	4.3	1.2	18.1
	Other non-nationals	6.8	12.9	0.6	4.4	4.7	3.9	6.2	4.3	1.3	5.5	0.1	1.1	3.6	4.1	91.3	6.7
LV	EU-15 non-nationals	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	Other non-nationals	1.8	1.4	1.3	2.1	2.6	1.9	1.9	1.9	1.0	2.0	1.0	1.1	1.0	1.5	2.0	4.3
LT	EU-15 non-nationals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	2.7
	Other non-nationals	0.6	0.2	1.2	0.6	0.7	0.6	0.6	0.6	0.1	0.6	0.1	0.4	0.4	0.6	0.5	7.1
LU	EU-15 non-nationals	38.3	16.5	13.4	34.2	67.0	37.8	60.1	22.9	43.8	52.2	5.0	13.0	28.1	33.7	76.5	82.1
	Other non-nationals	4.2	2.3	0.5	3.5	6.4	3.9	14.0	3.6	3.0	6.2	0.5	1.7	2.9	4.9	5.9	2.4
HU	EU-15 non-nationals	0.1	0.1	1.1	0.1	0.2	0.1	0.2	0.1	0.7	0.1	0.1	0.1	0.1	0.1	0.8	0.3
	Other non-nationals	1.0	0.6	0.4	1.0	1.2	1.8	1.5	0.4	0.5	1.0	0.2	0.8	0.9	1.2	2.0	3.8
MT	EU-15 non-nationals	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	Other non-nationals	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
NL	EU-15 non-nationals	1.3	0.5	1.2	1.6	0.8	1.2	2.6	1.4	0.9	1.9	0.4	1.2	0.8	1.5	:	:
	Other non-nationals	1.6	2.0	0.7	1.9	0.7	1.4	3.8	1.0	0.7	3.5	0.3	0.8	0.6	1.2	:	:
AT	EU-15 non-nationals	1.5	0.4	0.5	1.4	1.0	1.5	2.9	1.3	1.3	2.3	0.4	1.8	1.7	2.5	1.7	8.3
	Other non-nationals	8.2	3.7	3.1	10.5	14.0	7.3	18.8	7.4	2.6	11.0	0.3	2.5	5.2	8.2	14.1	22.4
PL	EU-15 non-nationals	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	:	:	
	Other non-nationals	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.4	1.0
PT	EU-15 non-nationals	0.5	0.3	0.3	0.4	0.3	0.5	0.8	0.5	0.3	0.7	0.2	0.6	0.7	1.0	0.2	5.5
	Other non-nationals	2.3	0.9	1.7	1.3	7.1	1.5	4.2	1.1	0.6	3.1	0.6	0.8	1.5	3.1	5.0	6.3
SI	EU-15 non-nationals	0.1	0.0	0.0	0.0	:	0.0	:	0.0	0.0	0.0	:	0.0	0.0	0.0	:	:
	Other non-nationals	2.6	0.5	0.5	1.1	14.9	1.0	1.8	1.1	0.0	2.0	0.0	0.2	0.4	1.2	2.7	:
SK	EU-15 non-nationals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	:	0.6
	Other non-nationals	1.0	1.0	1.0	1.0	1.0	1.2	1.3	0.9	0.9	1.1	0.8	1.0	1.0	1.2	0.3	3.5
FI	EU-15 non-nationals	0.3	0.1	0.1	0.3	0.3	0.3	0.6	0.3	0.2	0.5	0.1	0.8	0.2	0.4	:	10.2
	Other non-nationals	0.9	0.3	0.1	0.8	0.7	0.9	3.0	0.8	0.2	1.5	0.3	1.2	0.5	0.9	:	4.2
SE	EU-15 non-nationals	2.1	0.9	0.9	2.6	1.6	1.8	3.4	1.9	1.5	2.5	0.9	2.2	2.1	2.1	16.7	29.4
	Other non-nationals	2.0	0.7	0.5	2.3	0.7	1.7	7.7	1.7	0.8	2.8	0.7	1.7	1.9	1.7	:	16.8
UK	EU-15 non-nationals	2.3	1.2	1.6	1.7	2.1	1.7	4.1	2.2	2.7	2.7	1.6	2.7	2.7	2.4	5.6	7.4
	Other non-nationals	6.6	1.9	3.9	5.2	2.9	6.1	12.0	7.3	7.2	8.2	5.1	6.2	8.3	6.1	16.8	61.6
EU-25	EU-15 non-nationals	1.5	0.5	0.5	1.6	1.9	1.3	3.8	1.4	1.4	2.2	0.5	1.3	1.3	1.8	3.6	15.5
	Other non-nationals	3.8	2.9	2.0	4.1	5.1	3.4	8.9	3.4	2.4	4.7	1.2	2.2	3.2	3.8	20.5	17.3

Source: Census of Population, latest year available (typically 2001).

how far they tend to be employed in jobs which either accord with or fall short of their apparent capabilities (i.e. as reflected in their educational attainment). Accordingly, the focus here is on those with tertiary level qualifications.

In practice, the breakdown of occupations performed by people from other parts of the EU with such qualification working in the EU-15 is very similar to the breakdown for nationals. Indeed, slightly more of them were employed in the higher level occupations in 2005 than nationals. On average, therefore, around 21 % of men aged 25-64 of EU nationality working in another Member State were employed as managers and some 45 % as professionals (i.e. in ISCO-88 divisions 1 and 2), slightly more than for nationals (16 % and 44 %, respectively). At the same time, only just over 1 % were employed in elementary occupations, slightly less than for nationals (2 % – Table 10).

Much the same is the case for women with the same qualifications, 10 % of those from other EU-15 Member States on average being employed as managers as against 8 %

for nationals and 44 % as professionals, the same as for nationals, though slightly more of the former worked in elementary occupations (3 % as against 1 % – Table 11). The pattern is similar in the EU-15 Member States considered individually.

For migrants from outside the EU, however, the position is markedly different, a significant proportion of those with tertiary education occupying jobs which seemingly do not match their qualifications⁽¹⁶⁾. Under 10 % of men aged 25-64 of non-EU nationality and with tertiary education were employed in managerial positions, under two-thirds the proportion of nationals with this education level, while some 32 % were employed as professionals, three-quarters of the proportion of nationals. Again, much the same is also true of women, fewer of those from outside the EU with tertiary education being employed in higher level occupations. In particular, the proportion working as professionals was only just over half the proportion of nationals.

Table 10: **Division of men with tertiary education between broad occupations by nationality, 2005**

	Nationals		EU non-nationals		non-EU nationals	
	EU-25	EU-15	EU-25	EU-15	EU-25	EU-15
Armed forces	1.2	1.0	0.2	0.2	0.1	0.1
Managers	17.2	16.3	21.4	21.2	10.6	9.7
Professionals	44.1	43.5	45.1	45.3	32.4	32.3
Technicians	18.6	19.2	16.8	16.9	13.6	13.8
Office staff	4.1	4.2	3.0	3.0	4.1	4.0
Sales + service	3.3	3.2	3.3	3.3	6.4	6.5
Agricultural	1.2	1.3	1.2	1.2	0.7	0.7
Craft + related	6.7	7.3	5.6	5.6	14.5	14.8
Machine operators	2.4	2.5	2.1	2.1	5.2	5.3
Elementary	1.3	1.4	1.3	1.2	12.4	12.8

Source: EU labour force survey

(16) It should be noted in this regard that educational qualifications of a given level obtained in countries outside the EU may not be directly comparable with those obtained in the EU, so there is a need for caution when interpreting the results presented here.

Table 11: **Division of women with tertiary education between broad occupations by nationality, 2005**

	Nationals		EU non-nationals		non-EU nationals	
	EU-25	EU-15	EU-25	EU-15	EU-25	EU-15
Armed forces	0.1	0.1	0.0	0.0	0.0	0.0
Managers	8.6	8.3	9.8	9.9	6.9	6.8
Professionals	45.7	42.8	42.8	43.1	24.5	23.8
Technicians	26.1	27.9	22.8	22.7	22.8	23.2
Office staff	10.5	11.3	9.7	9.6	9.7	9.8
Sales + service	6.2	6.7	9.6	9.6	16.7	17.2
Agricultural	0.5	0.4	0.9	0.9	0.2	0.1
Craft + related	0.7	0.7	1.0	1.0	1.7	1.4
Machine operators	0.4	0.5	0.1	0.1	1.0	1.0
Elementary	1.1	1.2	3.3	3.1	16.6	16.7

Source: EU labour force survey

Conversely, a much larger proportion of both men and women from outside the EU with this level of education were employed in elementary occupations than nationals – an average of 13 % of men and almost 17 % of women as opposed to only just over 1 % in the case of nationals. Equally, the proportion of non-EU nationals with tertiary education employed in sales and service jobs (e.g. as shop assistants) in the EU-15 was almost three times as large as for nationals in the case of women and twice as large in the case of men. Over a third of women from outside the EU with university degrees or the equivalent and almost 20 % of men, therefore, worked in relatively low skill manual or non-manual jobs. These figures are over four times as high as for nationals.

2.5.4. Migration from the new Member States to the EU-15

As indicated above, there was widespread concern before EU enlargement in 2004 about a possible large-scale migration of labour from the central and eastern European countries concerned to the existing Member States. This prompted many of the latter to insist on imposing restrictions on the right of people from these countries to take up employment in

the Member States in question for up to seven years after their entry into the EU. Only three of the EU-15 Member States – Ireland, Sweden and the UK – were prepared to allow more or less free entry immediately (though in the UK, a system of registration was implemented).

Estimates by the European Commission some two years after enlargement, based on work permits issued, suggest that the number migrating in the intervening period was relatively modest (European Commission, 2006a). Although they amounted to around 1 % of working-age population in Germany and Austria, most of the permits were for relatively short periods of time. The number of permits, however, was significantly larger in Ireland, where they amounted to almost 4 % of working-age population in 2005.

In the UK, the number of work permits – data on which appeared after the publication of the Commission report – seem to have been nearly as large in relation to working-age population as in Ireland and considerably greater than the forecasts made before the entry into the EU of the new Member States. The latest official statistics (published in August 2006), show that some 427 000 people from these countries were granted permits in the two years

after enlargement, with most of them coming from Poland. Including estimates of the self-employed, this implies a total number of migrant workers of around 600 000 over these two years, which compares with prior estimates of just 13 000 a year moving from these countries into the UK ⁽¹⁷⁾. Although the latter related to those who would remain in the country in the longer-term, it is evident that the difference between the forecasts and outcome is considerable.

Data from the LFS, referred to in the Commission report, suggest a much smaller number of nationals living in the EU-15 – amounting to only around 2 % of working-age population in Ireland in 2005 and to just 0.4 % in the UK. However, although these figures implicitly take account of those returning to their own countries and, accordingly, will tend to be lower than indicated by work permits, they, nevertheless, tend to be depressed by the likelihood that the sample on which the LFS data are based under-represent new arrivals, possibly considerably, as noted above.

At the same time, the Commission report less questionably notes that the arrival of migrants from the new Member States, despite the possible scale, seem to have had no noticeable disruptive effect on the labour market in either Ireland and the UK.

2.6. Regional mobility

The data available on movements of people between regions in the EU are even more incomplete and dated than those on migration between countries. At the time of writing, data on regional migration compiled at EU level are not available for any EU-15 Member States after 1999, and for a number of them several years before then, while for the new Member States the data stop in 2000. These indicate that the average rate of movement between regions (defining these at the NUTS 2 level) in EU-15 Member States for which there are data (excluding France in particular) was around

1.5 % of resident population a year during the 1990s ⁽¹⁸⁾. The rate, however, varied from under 1 % in the southern Member States to around 2 % in Germany, the Netherlands and Sweden and 2.5 % in the UK. In the new Member States and accession countries, the rate of movement is much lower than in the EU-15, according to the latest data available (for 2000), exceeding 0.5 % only in Hungary (where it was just under 1.5 %) and Bulgaria. These low figures emphasise the very limited extent of regional mobility in the countries concerned, reflecting partly the nature of the housing market and partly custom and attitudes, as well as a lack of employment opportunities in most regions at the time.

2.6.1. EU-US comparison

Much has been made in the economic literature about the much lower rate of geographical mobility in Europe than in the US and the implications of this for labour-market balance. As noted above, therefore, higher unemployment rates in Europe than in the US, and the greater regional dispersion of rates, have been attributed to a lack of movement of labour from high unemployment regions to those where jobs are more available, even within the same country where difference in language is not an issue. In practice, however, although flows of labour between geographical areas in the US are undoubtedly larger than in most parts of Europe (around 3 % between States in the mid-1990s) – though not so much larger than in the UK – the data on which this conclusion is based merits careful scrutiny.

First, there is sometimes a tendency to compare movements of people of working age between States in the US with those between countries in Europe, despite the much smaller size of US States, in population terms at least. It is, therefore, more meaningful to compare movement between Member States in the EU with movement between the nine broad geographical regions in the US (the North-East, Mid-West and so on), since the population size

(17) See Wheeler, 2006. The statistics reported there are in line with the estimates reported in Newsweek, 24 July 2006 (Underhill, 2006) which from survey evidence put the number of Poles in the UK at around 500 000.

(18) Estimates from Alphametrics (2002; 2004). See also EC (1997) on the same theme.

is more comparable. While it is still the case that the rate of movement is larger in the US, some 1.5 % of people moving each year as against under 0.5 % in the EU, the difference is reduced (from European Commission, 1997).

Second, if regional migration in the US is adjusted to exclude movements between broad regions to make it more comparable to regional migration in EU Member States (and only movements between States within regions are taken into account), the rate falls in the mid-1990s to around 1.5 % a year. This is not much higher than in the EU-15, even if flows between NUTS 1 regions (of which there are around 70 in total with an average population size similar to the 50 US States) instead of between NUTS 2 regions are taken as the basis of comparison.

The difference between Europe and the US in the scale of labour mobility between geographical areas, therefore, lies largely in the low rate of movement across national borders in the former, which has to do with such factors as language and institutional differences which do not exist in the US (or at least to the same extent) and, accordingly, the much larger numbers in the latter who migrate over long distances.

2.6.2. Net regional migration and its direction

Although reliable and up-to-date estimates of the extent of migration flows across both national and regional borders are difficult to obtain, it is possible to derive reasonable estimates of net migration (i.e. inflows into a region less outflows) from demographic statistics. Specifically, net migration can be calculated by comparing population at two points in time and adjusting for births (not important if the focus is on working-age population) and deaths – i.e. from the fact that population in a given year must be equal to population the year before plus births (if relevant) minus deaths plus net inward migration. Since data on population by detailed age group and the number of deaths in each are available at EU level for all Member States and for NUTS 2 regions within these

and, moreover, are reasonably up-to-date, these provide a viable means of estimating both national and regional net migration.

The estimates show, first, net inward migration of working-age population into Member States over the five years 2000-05 ranging from 1.6 % a year in Spain and Cyprus – some five times larger than in the preceding five years in Spain, as a result of a large-scale influx of migrants from North Africa in particular, to under 0.1 % a year in Finland and to a net outflow from each of the three Baltic States, Poland and Slovakia, as well as the UK (Table 12).

Second, they show marked variations in the scale of net migration between regions, ranging from net inflows averaging 2-3 % of resident working-age population between 2000 and 2005 in some Spanish regions (Madrid, Valencia, Balearic islands) to outflows of almost 1 % a year from the new German *Länder* and several Polish regions.

Third, they show in general a positive relationship within countries over this period with both GDP per head and the employment rate, in the sense that net inward migration tends to be larger in regions with relatively high levels of GDP per head and employment ⁽¹⁹⁾. The closeness of the relationship, however, and the implied effect of relative levels of prosperity and employment vary significantly across countries, as does the apparent relative importance of the two in affecting net migration.

Both relationships, therefore, are very close for Hungary and Finland, reflecting the pull of the capital city region in attracting migrants, though in both cases, especially the latter the number of regions involved is small. They are also relatively close in Germany and Italy, reflecting in the former, the flow of migrants from the less prosperous, high unemployment *Länder* in the east to those in the west of the country, and in the latter, the ongoing movement of people from the south to the north for similar reasons, if on a smaller scale than in the 1950s and 1960s (Table 13). The two relationships are also relatively close in Poland, where the

(19) As measured by the employment rates – the proportion of working-age population, 15-64, in paid work. The employment rate tends to represent a better indicator of labour-market conditions than the unemployment rate to the extent that it also takes implicit account of those withdrawing from the workforce because they are unable to find employment.

Table 12: **Net migration of people aged 15-64 at national level in the EU, 1995-2000 and 2000-05**

Net inflows over the period as % of resident population, 15-64

	1995-2000	2000-05
BE	0.63	1.90
CZ	0.53	0.31
DK	1.56	0.83
DE	1.36	1.37
EE	-5.06	-0.19
EL	3.93	2.41
ES	1.72	8.08
FR	-0.17	1.05
IE		4.80
IT	0.13	3.49
CY	4.18	7.87
LV	-1.95	-0.83
LT	-3.94	-1.32
LU	5.93	4.91
HU	0.64	0.66
MT	-0.52	4.96
NL	0.97	1.00
AT	0.31	2.90
PL		-1.72
PT	1.64	3.56
SI	-0.09	0.74
SK	-0.34	-0.20
FI	0.35	0.40
SE	0.74	1.94
UK	1.83	-0.91
BG	0.30	-2.98
RO	-0.35	-0.13

Data for EE and FR relate to 1994-99; for IE to 1999-2004; for IT to 1994-1999 and 2000-05; for SK to 1998-2003 and 2000-05 and for the UK to 1994-99 and 1998-2003.

capital city region, Mazowieckie, was the only one to experience significant net inward migration over this period (there was small net inward migration in Malopolskie in the south of the country bordering Slovakia).

By contrast, the relationships are negative rather than positive in Slovakia as the result

of the net movement out of Bratislava (though there are only four NUTS 2 regions in this country). Equally, little relationship at all between either variable and net migration is evident in France, where the region with by far the highest level of GDP per head, Ile de France, has experienced a net outflow of people of working age over recent years, while regions in the south with among the lowest employment rates – Provence-Alpes-Côte d’Azur and Languedoc-Roussillon – have experienced a significant net inflow. In addition, in the Netherlands, where regional differences in both income and employment levels are generally comparatively small, the differences which do exist seem to have little influence on net migration. Greece is similar in this regard, though here the differences in income and employment are wider.

The evidence for these four countries suggests that there are other factors involved in determining migration flows apart from income or employment levels. This is also indicated by the relationships for the Czech Republic, Spain, Portugal, Sweden and the UK, where although there is evidence of some association between the two variables in question and net migration, it is not particularly close. While, therefore, the prevailing movement in these countries on average is from regions with relatively low levels of income and employment to those with higher levels, there are regions which do not conform to this trend.

In the two other countries, Belgium and Austria, GDP per head, or income, seems to have a positive effect on net migration but not employment rates, in both cases, reflecting the significant net inward movement of people of working-age into the capital city regions where income levels are relatively high but employment rates are not.

2.7. Regional mobility – further evidence

A Eurobarometer survey carried out in 2005 provides an additional source of evidence on the extent of geographical mobility across

Table 13: **Correlation between net migration of those aged 15-64, GDP per head and employment by region**

<i>Correlation coefficients</i>		
	Net migration and GDP per head	Net migration and employment rate
BE	0.84	-0.28
CZ	0.26	0.41
DE	0.73	0.67
EL	-0.14	0.43
ES	0.43	0.65
FR	-0.17	-0.16
IT	0.76	0.89
HU	0.91	0.97
NL	-0.13	0.29
AT	0.78	-0.52
PL	0.60	0.70
PT	0.22	0.36
SK	-0.88	-0.61
FI	0.91	0.92
SE	0.54	0.33
UK	0.42	0.18
BG	0.61	0.89
RO	0.29	0.58

Note: Net migration is measured over the period 2000-05; GDP per head relates to 2003, employment rates to 2005

the EU⁽²⁰⁾. According to this, some 31 % of Europeans had moved from one region to another at least once during their lives, most of them (24 % of those surveyed) to another region in the same country and relatively few to another Member State (only 4 %, with the remaining 3 % having moved to a country outside the EU). Most of those who had moved, however (some two-thirds), had remained in the place that they had moved to rather than

moving again. In addition, 12 % of those surveyed stated that they had participated in a training or education programme in another Member State at some stage in the past.

The survey suggests that there is little difference between men and women in the trend to move, but those with higher levels of education are more likely to move than those with lower levels. Just over 7 % of those with tertiary education, therefore, stated that they had moved to another Member State and some 37 % had moved to another region. This compares with around 5 % of those with only basic schooling who had moved between countries (about the same as for those with upper secondary education) and almost 20 % who had moved between regions (as against 25 % of those with upper secondary education).

The survey also throws some light on the factors underlying movement, the main reasons cited for inducing people to move to another country being better working conditions and higher income levels. Conversely, the major reasons cited for not moving were the likelihood of losing direct contact with family and friends as well as support in terms of childcare and care for the elderly.

2.8. The extent of commuting in the EU

As indicated above, migration, in the sense of people moving from one place to another either permanently or at least for a lengthy period of time is only one dimension of geographical mobility. Many people move between both countries and regions to study or work for a temporary period, which may be a matter of a few months or few years. Such short-term, seasonal or contract movement is not necessarily picked up in migration statistics.

(20) Eurobarometer 64.1 on geographic and labour-market mobility, carried out in September 2005.

Similarly, people can move between locations for temporary periods as a result of the job that they do, particularly if they work in multinational, or multi-regional, companies which have a policy of moving people around the various sites they operate ⁽²¹⁾.

While geographical movement of this kind is difficult to identify and assess in terms of its scale, a further aspect of mobility and one which does not involve relocation as such,

namely commuting, can be measured if only in an approximate way. The main comparable source of data on this comes from the LFS, which records both the country and (NUTS 2) region of residence of people and the country and region in which they work. Those working in different regions, or countries, from where they live, therefore, give an indication of the number commuting to work, in the sense of travelling relatively long distances. Although this may

Table 14: **Extent of commuting between countries and regions in the EU, 2005**

	Numbers (000)		% of total employed	
	Same country/ other region	Other country	Same country/ other region	Other country
BE	774	86	18.7	2.1
CZ	212	20	4.5	0.4
DK		4		0.2
DE	3 726	150	10.3	0.4
EE		5		0.8
GR	43		1.0	0.0
ES	348	40	1.8	0.2
FR	1 265	230	5.2	0.9
IE	39	8	2.0	0.4
IT	488	88	2.3	0.4
CY				
LV		8		0.8
LT		25		1.7
LU		2		0.9
HU	145	22	3.7	0.6
MT	0	1		0.6
NL	895	29	12.1	0.4
AT	406	46	10.8	1.2
PL	192	46	1.4	0.3
PT	181		3.5	0.0
SI		8		0.9
SK	86	120	3.9	5.5
FI	64	4	2.6	0.1
SE	195	32	4.5	0.7
UK	4 396	64	15.7	0.2
EU-15	12 820	783	7.8	0.5
EU-25	13 455	1 038	6.9	0.5

(21) See Akkoyunlu and Vickerman (2000); Althausser and Kalleberg (1990) who draw attention to the various dimensions of mobility.

Table 15: **Extent of commuting in the EU by gender and age group, 2005**

		Numbers (000)		% of total employed		
		Same country/ other region	Other country	Same country/ other region	Other country	
Men	EU-25	8 809	733	8.2	0.7	
	EU-15	8 358	550	9.1	0.6	
Women	EU-25	4 646	305	5.4	0.4	
	EU-15	4 462	233	6.1	0.3	
Age groups	EU-25	15-29	3 215	278	7.6	0.7
		30-39	3 881	297	7.4	0.6
		40+	6 359	462	6.4	0.5
	EU-15	15-29	2 994	173	8.4	0.5
		30-39	3 712	229	8.2	0.5
		40+	6 114	381	7.2	0.4

overstate the number concerned, insofar as some people might live close to their place of work but cross a regional boundary when they travel there, it may overstate it to the extent that people may live and work at different ends of the same region. The implicit assumption here is that these two possibilities offset each other, which may or may not be valid, but the data should, nevertheless, give an indication of the relative scale of commuting in different Member States. At the same time, it should be noted that the data include not only those commuting on a daily basis but also those doing so each week or even over longer periods.

They indicate, first, that the extent of commuting across national borders is relatively limited across the EU, averaging only 0.5 % of those employed in 2005 and exceeding 1 % only in Belgium, Lithuania, Austria and, most especially, in Slovakia, where the proportion was over 5 %, reflecting the significant numbers commuting to Austria to work (Table 14). For some Member States, such as the UK, the relatively small scale of inter-country commuting is explicable in terms of their geographic location, but for most others, this is a relatively minor consideration. What is not revealed by these figures is the large number commuting into Luxembourg from surrounding countries, who represent a relatively small proportion of the workforce in the countries concerned (Belgium and Germany in

particular) but who account for almost 40 % of total employment in Luxembourg.

Commuting across regional boundaries is more important. In the EU-25 as a whole, it amounted to around 7 % of employment in 2005. However, the scale varies markedly between Member States. In particular, it is relatively small in all the new Member States (under 5 % of employment in each case) and most especially in Poland (only just over 1 %). This in part reflects deficiencies in the transport system, which makes travelling long distances on a daily basis problematic, as well as the absence of a commuting tradition.

The extent of commuting is also limited in many of the EU-15 Member States, especially in the four southern Member States (under 4 % of employment in each case) as well as Finland and Sweden, in the latter two, reflecting the typically large geographical size of regions as well as the concentration of employment in one or two of them. By contrast, commuting is much more prevalent in Belgium (almost 19 % of employment in 2005, largely because of the many people travelling to work in the Brussels region each day), the UK, the Netherlands, Germany and Austria.

This latter group of countries, it should be noted, are also in the main those in which regional migration also seems to be comparatively large, as indicated above (Belgium, where regional

migration seems to be around the EU average, is the main exception), while in the former group it tends to be small (Sweden, where migration is above average, is the main exception). In consequence, the evidence strongly suggests that commuting is not a substitute for migration and that countries can, accordingly, be largely divided into those in which labour mobility is low, such as the southern countries and new Member States, and those where it is high, such as the UK or Germany.

The evidence on commuting is also similar to that on migration insofar as it indicates that young people are more likely to commute than older people. On the other hand, it also indicates that men are more likely to commute than women, whereas the migration data show similar rates for the two (Table 15).

The evidence, in addition, shows a positive relationship between commuting and education level. Those with tertiary education, therefore, are more likely to commute than those with lower education levels, an average of just over 9 % of university graduates in the EU crossing regional boundaries to work in 2005 as against under 7 % of those with upper secondary education and under 5 % of those with only basic schooling (Table 16). This pattern is evident in nearly all Member States, if more so in most EU-15 Member States than in the new ones. The exception in the latter case is Slovakia, where those with tertiary qualifications are most likely to commute between regions but least likely to commute to another country (mainly to Austria), reflecting perhaps the nature of the work involved.

Table 16: **Commuting of those aged 25-64 by education level, 2005**

% of employed with each level of education

	Basic schooling		Upper secondary education		Tertiary education	
	Same country/ other region	Other country	Same country/ other region	Other country	Same country/ other region	Other country
BE	14.0	1.4	16.5	2.0	24.8	2.7
CZ	8.5	0.1	8.6	0.4	8.2	0.4
DE	7.9	0.3	9.8	0.4	12.2	0.6
GR	0.2	0.0	0.1	0.0	0.1	0.0
ES	1.7	0.1	1.7	0.2	2.2	0.3
FR	4.8	1.0	5.0	1.1	6.2	0.8
IE	2.4	0.3	2.1	0.3	1.6	0.5
IT	1.7	0.4	2.1	0.3	3.7	0.6
HU	3.9	0.2	3.5	0.6	3.4	0.6
NL	7.1	0.2	11.2	0.7	16.8	0.5
AT	7.6	1.0	11.2	1.1	12.2	2.1
PL	0.6	0.2	1.4	0.4	1.7	0.3
PT	2.8	0.0	3.9	0.0	6.3	0.0
SK	1.6	5.2	3.4	4.7	5.7	2.6
FI	1.6	0.2	2.6	0.2	2.4	0.1
SE	3.2	0.6	4.2	0.6	5.1	0.8
UK	11.4	0.1	14.9	0.3	20.6	0.3
EU-15	4.7	0.4	7.8	0.5	10.3	0.6
EU-25	4.6	0.4	6.7	0.6	9.4	0.6

* Sum of commuting across regional and national borders

3. The implications of the evidence on mobility

The evidence presented above suggests that the extent of geographical mobility of both labour and students or trainees is limited across most of the EU. This raises the obvious, but no less important, question for policy-makers as to the main underlying reasons why this is the case and, more particularly, how far such reasons are amenable to policy action. As noted above, transaction costs, in the form of both the financial expenses of moving and the social consequences of losing direct contact with families and friends and, accordingly, with the support that these can provide, represent a compelling reason for people being reluctant to move unless the potential gains from so doing are substantial. Such costs, particularly the social ones, cannot easily be eliminated through policy action, though they might be capable of being reduced, for example, through the provision of more support facilities for those migrating into a country or assistance with finding a job and accommodation.

Other factors hindering movement, however, stem from less fundamental sources and in many cases are a result of deliberate policies introduced over the years. These and the evidence for them are considered below.

3.1. Obstacles to free movement

In practice, the ability of people to move freely around the EU to take up employment is hindered by a range of obstacles in addition to the constraints stemming from social and cultural factors as well as from the direct financial costs involved in moving. These

obstacles include, in particular, administrative barriers emanating from rules and regulations designed to ensure that certain requirements are met. Important examples are qualifications imposed to restrict entry to a profession or vocation with the aim of trying to ensure that those participating have the requisite skills for performing the tasks involved. While there may be sound reasons for these, they tend to be specific to a particular country – or to countries with similar education and training systems – and may exclude competent people who happen not to have the particular qualifications which are recognised ⁽²²⁾.

Although a good deal of effort has been devoted to establishing arrangements for the mutual recognition of competences, difficulties remain, reflecting the deeply entrenched attachment to systems of vocational training in different countries and the central role of qualifications in defining social position. These difficulties are compounded by the general limited extent of arrangements for the recognition of informal qualifications, especially those acquired in another country, and of the experience gained from pursuing a particular profession or from undertaking a particular job ⁽²³⁾.

Equally important barriers stem from the operation of social security systems and, in particular, from the frequent non-transferability of entitlement to benefits, such as in respect of unemployment, and perhaps, more importantly, to pensions, especially supplementary pensions linked to a person's employment record.

More general administrative barriers consist of the requirement in some Member States for permits for both residence and work even for nationals from other Member States – even leaving aside the temporary restrictions

(22) The constraints on movement which stem from the non-recognition of qualifications were emphasised in the Kok report on the EU's employment policy sponsored by the European Commission (Kok, 2004).

(23) These efforts in the recent past have taken the form of the establishment of a Community framework for the transparency of qualifications and competences which are discussed further in this paper.

imposed on workers from the new Member States – and, in several cases, of a denial of the right to residence or employment for spouses from countries outside the EU.

Other administrative barriers operate more indirectly but are liable to have no less important an effect. These relate, in particular, to the regulations surrounding employment in several countries which tend to discourage people from changing job and, therefore, from moving to another location as part of this decision. Such institutional obstacles also extend to housing, resulting from the way in which the housing market is organised in different countries and the effect of this not only on the ease or difficulty which people moving have in meeting their accommodation needs but equally on their willingness to move away from a particular area.

Several studies (referred to below) have been undertaken on the relative importance of these various factors, especially on the effect of labour-market regulations and housing which seem to indicate that the arrangements in place in several countries tend to reduce the scale of migration. Some of these studies, moreover, point to the interrelationship of the limited job mobility which results from employment protection legislation and the seemingly high social costs of moving. They argue, therefore, that if people do not expect to have to move for employment reasons then this encourages them to build up social capital in the locality, in the form of social ties and relationships of one kind or another, which in turn makes it difficult for them to move should the opportunity arise or should circumstances change⁽²⁴⁾. This contrasts with the position in the US where people expect to move more frequently and where, accordingly, the build up of social capital is less.

The evidence suggest that rates of job mobility are indeed relatively low in countries with relatively high levels of employment protection, as well as in the EU relative to the US, and that there seems to be a link between this

and relatively low rates of geographical mobility. According to LFS data, therefore, only just over 8 % of those employed in the EU moved to another job between 2002 and 2003 (data for other years shows a similar figure), though this varied from around 13 % in Denmark and the UK to around just 5 % in Greece. In consequence, the average duration of employment in the same job is 10.6 years in Europe against 6.7 years in the US (Turmann, 2004).

According to the Eurobarometer survey cited above, the workers interviewed had had, on average, four jobs in their working lives up to that point but that the number varies from around six in Denmark, Sweden and the UK, countries in which geographical mobility is relatively high, to under three in Italy, Malta, Austria, Portugal, Slovenia and Slovakia, countries in which it is relatively low. Moreover, whereas most people in Denmark and Sweden strongly believe that job mobility is good for those involved (72 % and 79 % respectively), in Belgium, Germany, Greece and Austria, countries where the rate of movement is below average, over two-thirds do not believe that mobility is beneficial.

The survey, together with other recent studies, suggests that mobility brings different kinds of benefit from stability. While, therefore, remaining with the same employer for a long time allows workers to gain company-specific skills and so increase their productivity – at least up to the point at which it discourages initiative – changing job tends to lead to the acquisition of different skills and, therefore, fosters adaptability (e.g. Auer et al., 2005). Accordingly, a judicious mix of the two is desirable – more specifically, mobility without excessive instability.

The evidence also suggests that housing arrangements can also discourage mobility. In particular, a recent study based on data from the European Community Household Panel found that home ownership and council housing tends to reduce the extent of labour movement between locations compared with private rentals (Barceló, 2006). Similar findings in the UK have

(24) See e.g. David et al. (2006); Wasmer (2006).

been used to explain the limited effect of labour-market conditions on regional migration (noted in the analysis above, though the studies cited here are based on earlier data) ⁽²⁵⁾.

Although differences in social security arrangements are equally a potential deterrent to movement, relatively few of the people questioned in the Eurobarometer survey cited above regarded lack of access to social protection or social services as an important barrier (under 15 %). Equally, fewer than 10 % considered that they would have difficulty in having their skills or qualifications recognised, despite this being widely seen as discouraging mobility. (However, a significant proportion of people – if still less than 20 % in each case – from the Czech Republic, Estonia, Poland, Slovenia and Slovakia, all of whom are subject to temporary restrictions on the ability to work in most EU-15 Member States, regarded obtaining a work permit as a major obstacle to movement).

The emphasis placed by policy-makers at EU level on the transferability of pension and other social security entitlements and on the mutual recognition of qualifications might not, therefore, on this evidence have a major effect on increasing mobility as compared with tackling other obstacles. In particular, around 30 % of respondents to the survey considered they would have difficulties finding a job if they did move, which suggests a need for more guidance and assistance in this respect, despite the efforts made to develop an EU-wide employment service (EURES, which links the public employment services in different Member States).

According to the survey, chief among the obstacles, despite the efforts made to improve the situation over recent years, is a lack of language skills, which around half of those questioned regarded as a principal barrier to moving to work or study in another European country ⁽²⁶⁾.

The policy response at EU level to the limited scale of geographical mobility and the constraints on movement is set out below.

3.2. The gains and risks of increased geographical mobility

Reducing barriers to labour movement between countries and regions is likely to contribute to correcting imbalances between supply and demand in labour markets across the EU, especially in relation to specific skills. This, indeed, is a major objective of EU policy efforts to eliminate administrative and institutional obstacles so far as possible and to make it easier for people to move to take up employment in different places. At the same time, similar efforts are being made to encourage more young people to study or train in other countries on the grounds that this is not only likely to broaden their education and increase their understanding of other languages and cultures but in so doing will also make them more ready to work abroad. These policy efforts are considered in more detail below.

The objective of increasing mobility is given added impetus by the decline in population of working age which several Member States are already experiencing and which will spread to most over the next 5-10 years. Equally significantly, this decline is accompanied by a larger reduction in the number of young people entering the labour market each year. This, in particular, increases the importance of ensuring that the young people concerned are educated and trained to meet prospective labour-market needs, that available labour skills are used effectively and that labour-market imbalances are minimised. Increased mobility can arguably contribute to achieving all three objectives.

In practice, the focus in the EU has been most especially on the potential contribution of migration in alleviating prospective shortages of skilled labour. Member States which have imposed restrictions on inward migration from outside the EU have, therefore, in many cases introduced concessions for workers

(25) Henley (1998); Hughes and McCormick (1981); McCormick (1997); Pissarides and Wadsworth (1989).

(26) Although the desire to improve language skills can also be a primary reason for students at least moving for a period to another country.

with particular skills or education levels ⁽²⁷⁾. Similar concessions, moreover, have been applied by many of the EU-15 Member States to people from the new Member States during the transitory period before the extension of the right to free movement to them. Highly qualified people from these countries, therefore, are typically exempt from the general restrictions imposed on access to employment in all but a few of the EU-15 Member States (specifically, all except Ireland, Sweden and the UK).

Such a policy gives rise to two major issues: first, whether confining the right of entry into the EU to the highly qualified is justified in terms of prospective labour-market needs and, second, how far a selective policy of this kind is likely to be detrimental to the countries from which the people concerned come.

Analysis of the composition of labour demand across the EU and, more specifically, of prospective skill needs indicates that requirements for highly educated workers are undoubtedly likely to increase in future years under virtually any scenario, especially relative to the demand for the less qualified. Indeed, most of the new jobs created are likely to be for such people. This, however, does not necessarily imply that there are more likely to be labour shortages for the highly qualified than for other workers. Any conclusion of this kind has to be based on relating the prospective demand for labour skills to prospective supply, which forecasts of skill requirement often do not do.

The number of highly educated people on the labour-market, therefore, is also likely to increase significantly in future years across the EU even in the absence of inward migration. This is in part because of a trend increase in education levels among young people, in part because those entering the labour market invariably have higher levels of educational attainment than those retiring.

Moreover, while the new jobs created in the coming years will predominantly be for those

with high education levels, and for those with tertiary education in particular, the jobs which need to be filled in the future are not confined to new jobs as such (in the sense of those which did not exist before) but include those becoming vacant as older people retire. Indeed, the latter are almost certain to outnumber new jobs unless employment growth is particularly rapid, since on average 2-3 % of the workforce are likely to retire each year. As the jobs freed up by those retiring will include a much larger proportion requiring relatively low skill levels than the new jobs created, any projections based simply on the latter will tend to grossly under-estimate the prospective demand for people with less than tertiary education and, most especially, for those with only basic schooling.

The number of such people of working age, however, is declining in virtually all Member States as education levels rise and as older people retire. Projections of skill demand, therefore, indicate that in most EU-15 Member States at least – though not in several new Member States where job losses in agriculture and basic industries will tend to release low skilled workers on to the labour market – demand is likely to outpace supply, so giving rise to possible shortages of labour at the bottom end of the skill range and not only at the top ⁽²⁸⁾.

Such potential shortages are compounded by the manifest reluctance of people in Member States to take up low skill, poor quality jobs with low wage levels, which in many cases need to be carried out despite economic advance and the general upgrading of jobs. These jobs in practice are increasingly being filled by migrants from non-EU countries, often entering the EU illegally and working in the informal economy. Indeed, the existence of such jobs and of employers looking to minimise the costs of performing them represent a major reason for the growth of illegal immigration

(27) See the study for the European Commission coordinated by MERIT e.g. of the selective nature of work permits granted in EU Member States over recent years (MERIT, 2003).

(28) These projections come from a study on the implications of demographic trends for employment and education undertaken by Alphametrics (2005) for DG Employment completed at the end of 2005. See also Cedefop, Bainbridge et al., 2004.

across the EU in recent years. This growth, it has been argued, is unlikely to subside almost irrespective of any tightening of border controls unless measures are taken to dampen the demand for such labour (Reyneri 2001, 2003; Arango and Baldwin-Edwards, 1999) and, to the extent that push as well as pull factors are at work, until economic and political conditions improve in the countries from which these migrants come.

The evident demand for migrant workers and the shortage of low-skill labour which it reflects tends, however, to be largely ignored by policy-makers across the EU whose attention is almost wholly confined to skill shortages at the top end of the labour market. While these may well be important, as most studies suggest ⁽²⁹⁾, a narrow focus of this kind is not only unbalanced in domestic terms but risks having detrimental consequences for the countries from which the migrants come. By taking the most highly qualified, therefore, such a policy is likely to damage the prospects for economic development of the countries concerned and give added impetus to the exodus of the less qualified, so creating increased pressure on the EU's external borders.

3.2.1. Brain drain

A policy of not only confining immigration to the most highly qualified people from outside the EU but actively encouraging these to come is liable to lead to a brain drain for the countries concerned, an outcome which Member States themselves have expressed fears about in relation to the outflow of scientists and engineers to the US over the years. Although, therefore, pull factors by themselves might not induce large-scale migration given transaction costs, the potential gains to the most highly qualified and the support available to them in the country to which they are moving can more than compensate for any costs involved in particular cases.

Nevertheless, despite the concerns of policy-makers in the EU – and increasingly in developing countries – there is little hard evidence on the scale of the brain drain either historically or contemporarily. What is clear, however, is that policies pursued at EU level, such as the creation of a European research area as well as the abolition of national borders themselves, have made it much easier for scientists and engineers to move between countries to pursue their research.

In practice, the evidence suggests that the migration of scientists and engineers from Europe to the US has slowed appreciably since the 1970s when five of the top 10 countries from which such people originated were Member States, with Germany the largest and Italy the second largest in this regard. By 1990, only three of the top 10 countries were in the EU, with none of the three in the top five. In 2001, only 50 000 of the 1 million migrants officially admitted to the US were from the EU, while 33 000 were from central and eastern European countries, with Poland and Bulgaria providing the largest numbers (MERIT, 2003).

The evidence also indicates that while some young people from Europe study for their doctorates in the US, the numbers involved are relatively small (under 1 500 students were awarded doctorates in the US in 2 000 out of just under 42 000 in total). Moreover, while a significant number of those receiving doctorates over the 10 years 1991 to 2000 inclusive (some 70 %) intended remaining in the US, this represents only just over 11 000 young people overall.

Migration of highly educated young people from the new Member States and accession countries is perhaps more of a potential problem for the countries concerned ⁽³⁰⁾. The exodus from Poland, the Baltic States, Bulgaria and Romania seems to have been particularly large since the transition began. In Bulgaria, for example, estimates suggest that some

(29) Including those cited above.

(30) In addition to the MERIT study, see Krieger, Eurofound, (2004); Carrington and Detragiache (1998).

55-60 000 of the most highly qualified left each year during the 1990s, while in Estonia, research personnel numbers are estimated to have declined by 30 % over these years (quoted in MERIT, 2003). In Poland, around 10 % of doctors are reported to have left the country since the transition began⁽³¹⁾. Moreover, according to UK Government statistics, at least 37 000 Slovaks have found jobs in the country since 2004, with more than a third taking administrative or management posts, while a recent survey in Hungary indicated that 60 % of medical students approaching graduation were intending to seek work abroad (Underhill, 2006).

Such disproportionate flows of the more highly educated from the less prosperous to the more prosperous countries tend also to extend to regional migration. Although, therefore, the movement of labour from regions of low employment to ones where the demand for workers is higher might help to correct labour-market imbalances in the short-term, to the extent that the regions losing labour also suffer a loss of their development potential because of the make-up of the people concerned, this is liable to be at the expense of longer-term balance⁽³²⁾.

The problem is alleviated in some degree by the remittances that those moving to other countries or regions send back home, which can in some cases add considerably to income⁽³³⁾. It is also alleviated if the qualified people migrating return before too long to their region or country of origin. Indeed, it is likely

to benefit the region concerned if they bring back with them the skills and know-how they acquired elsewhere. In practice, however, this may well not be the case in respect of many of the people concerned, but there is an acute lack of data to enable the number returning to be quantified⁽³⁴⁾.

At the same time, the evidence from Ireland over the past 10 years or so strongly suggests that migrants do return home in large numbers but only if economic conditions and job opportunities improve markedly. While this may at first sight be encouraging for countries – or regions – losing qualified people, it nevertheless suggests that the returnees concerned were not involved to a major extent in initiating accelerated economic development, though they may have helped to sustain it.

In practice, partly because of the risk of harming development prospects but more generally in order to secure a more balanced spatial pattern of economic development, EU policy in the shape of the Structural Funds, in particular, has sought to strengthen the growth potential of lagging regions – as well as outside the EU of developing countries – so as to encourage people to remain in these places. The aim of removing barriers to mobility in order to enable people to move freely around the EU to live, work and study has, therefore, been combined with measures to dampen push factors inducing people to move away from less prosperous and less economically dynamic areas.

(31) Reported in *Newsweek*, 24 July 2006 (Underhill, 2006).

(32) Attention to this danger was drawn first by Myrdal (1956). See also Olesen (2002).

(33) In the former Soviet Republic of Moldova neighbouring the EU, some 10-15 % of working-age population are estimated to work abroad and remittances account for 27 % of national income (Underhill, 2006).

(34) A survey conducted in 2006 of migrant farm-workers in eastern England found that over half intended to remain in the UK in the long term, though many initially planned to stay for only a year or two (Underhill, 2006).

4. EU policy on mobility

The ability of people to move freely within the EU and to live and work where they choose is a basic principle of the EU. This is seen not only as a fundamental right of EU citizens but as contributing to a major extent in achieving economic objectives, in reducing imbalances in employment and unemployment between different parts of the EU and in helping to attain the so-called Lisbon objective of making the EU 'the most dynamic, knowledge-based economy in the world'.

At the same time, the prospective decline in population of working age virtually throughout the EU and the implications of this for the size of the workforce and for the growth rate of the EU economy has led to a growing emphasis on the potential importance of increasing immigration into the EU, especially of skilled workers. According to the 2004 Green Paper on migration, for example, 'while immigration in itself is not a solution to demographic ageing, more sustained immigration flows could increasingly be required to meet the needs of the EU labour market and ensure Europe's prosperity' (European Commission, 2004a).

Accordingly, much effort has been made over recent years in particular to try to remove artificial barriers to mobility within the EU as well as harmonising Member State controls on migration. These efforts have extended increasingly to encouraging movement through the provision of information and support, such as through the creation and progressive improvement of the EURES European-wide employment service for centralising details of job opportunities across the EU. They have also extended to increasing the number of young people who study and train in other Member States in addition to their own in the belief that this not only brings awareness of different cultures and creates a greater feeling of 'Europeanness' but makes it more likely that those involved will be more mobile in their choice of where to work and will inform others of the opportunities available elsewhere.

Nevertheless, despite these efforts barriers to movement over and above those which stem from the natural reluctance of people to move away from the area they have grown up in, where they have families and have developed social relations still exist. As indicated above, the most important barrier by far at present are the limitations placed on the rights of citizens of the new Member States to free movement and their on their ability to work in 12 of the EU-15 Member States. Although this is intended as a temporary restriction, it can nevertheless remain in place for up to seven years in individual countries and means that for a substantial proportion of the population of the EU, one of its key principles does not apply. It seems, moreover, almost certain that similar restrictions will be imposed on the citizens of Bulgaria and Romania when these two countries enter the EU in 2007 and on any subsequent entrants.

Other direct limitations on movement include, in particular, restrictions in some Member States on the ability of third-country nationals who have lived in one Member State for some time to move to another to live and work. Such people were the subject of an EU Directive issued in 2003, obliging Member States to grant them the same rights as other EU citizens by 2006, though it remains to be seen how effective the Directive will prove (European Commission, 2003). Less direct but no less important restrictions include the non-transferability between countries of entitlement to social security, especially pensions, as well as restrictions which arise from employment protection legislation, a lack of recognition of qualifications gained elsewhere (see below) and the operation of the housing market.

EU-level efforts to address some of these restrictions have had variable success, not least because they are in some degree part of national culture and traditions. For example, Commission efforts to harmonise the controls on immigration from non-EU countries into the

EU have been met by resistance from Member States which have insisted on their right to determine who enters their country. This is despite the fact that the abolition of internal borders over much of the EU means that this right is already limited and that the decisions on entry made in one Member State inevitably affects the others. Such a failure to agree a common policy on immigration makes it difficult to remove internal borders fully or create a single labour market. Similarly, attempts to encourage countries to relax the job protection enjoyed by employees in many countries with the aim of improving the functioning of the labour market have been met by equal resistance.

The concern here is twofold. First, it is to outline the measures being taken at EU level to increase mobility, focusing in particular on those aimed at raising mobility within the education and training system and increasing the number of young people who study and train in other Member States. This, as noted above, is regarded a major step in increasing geographical mobility in general, especially of labour and eliminating the psychological barriers which still inhibit people from crossing national borders to live and work even if only for temporary periods of time.

The second concern is to review policy at EU level on vocational education and training specifically, which has increasingly involved greater cooperation between Member States and attempts to internationalise – or ‘Europeanise’ – the VET system in different countries, with the aim both of enhancing the quality of the system as such in terms of the skills and competences taught and to make it more possible for students and workers alike to move between different parts of the EU. As such the two strands of policy overlap and complement each other, having the common aim – among others – of facilitating and encouraging geographical movement, on the grounds that this is necessary for improving both the workings of the labour market and the output of VET systems and, accordingly, for strengthening EU competitiveness, which is ultimately dependent on the skills and know-how of its people.

It starts by outlining EU policy on mobility *per se* and, in particular, the *Action plan for skills*

and mobility adopted in 2002 and subsequent developments and considers the extent to which the proposals put forward in the action plan have been put into effect. It then considers the parallel process of the development of VET policy at EU level over recent years, and subsequent to Lisbon in particular, and the increased cooperation between Member States which has occurred, especially in relation to establishing systems for the greater transparency and transferability of qualifications and competences. It, finally, reviews the Community programmes in force for encouraging mobility among students and trainees.

4.1. The action plan for skills and mobility

Official concern with the low rate of geographical mobility within the EU around the turn of the present century (e.g. European Commission, 2001b) led to the establishment of high level task force on skills and mobility, which reported at the end of 2001 (European Commission, 2001a). According to the task force, although there were signs of an increase in temporary migration and long-distance commuting, the scale of movement was still low. This it attributed to ‘economic, social and cultural constraints and habits’ as well legal and administrative barriers. It recognised that geographical mobility was not an end in itself, but that it was likely to offer people more employment opportunities and, therefore, better career prospects. It also recognised that occupational mobility – the ability of people to change the job they do or to take up another career path – was in many cases a pre-condition for people being able to move between locations. Measures to increase geographical mobility, therefore, needed to be supported by action to reduce barriers to job movement.

At the same time, it acknowledged the risk noted above, that increased mobility could adversely affect less prosperous and lagging parts of the EU, and, accordingly, emphasised that action to eliminate obstacles to movement needed to be accompanied by

counterpart measures to support the economic development of the countries and regions concerned.

The task force made several recommendations for increasing mobility, which fed into the action plan for skills and mobility proposed to the Barcelona Council in 2002 (European Commission, 2002). This identified 11 areas for action in relation to geographical mobility, as well as a further 11 for improving occupational mobility and three for increasing information about employment opportunities. The 11 areas for action regarding geographical mobility are:

- (a) remove remaining administrative and legal barriers to movement across national borders, in particular those which restrict movement of labour;
- (b) simplify and modernise the coordination of social security arrangements between countries;
- (c) make progress on the portability of supplementary pension rights of migrant workers;
- (d) improve the existing Community system for recognition of regulated professions (i.e. those for which it is a statutory requirement to hold a diploma or other occupational qualification in order to pursue them) to make it easier to manage the system and easier for users, so widening employment opportunities;
- (e) strengthen the internal market for services, since restrictions on the ability of those from other countries to supply them imply parallel restrictions on the ability of those concerned to work in the country in question;
- (f) review the non-administrative barriers to mobility, such as the cost of moving, and where possible take suitable measures for reducing these;
- (g) encourage all children to learn at least two European languages in addition to their own so that language difficulties are no longer a problem to movement between countries;
- (h) «ensure all higher and further education courses include a European dimension which enables all students and trainees to be taught by teachers and to learn from

teaching material from other European countries, while increasing the opportunity for students and trainees to undertake a significant part of their education or training (e.g., a third) in another Member State;

- (i) develop a new approach for the recognition of qualifications in non-regulated professions within the EU;
- (j) remove any restrictions in the provisions in collective agreements relating to qualifications which limit them to particular local, regional or national qualifications;
- (k) develop an EU-wide immigration policy so as to make it easier for non-EU country nationals to move between Member States.

These recommendations were accompanied by proposals to provide more information about job vacancies in other Member States and to make people more aware of the opportunities which exist in these countries, which are no less important to increasing mobility. To this end, the European job mobility information portal was introduced in 2003 as an enhanced version of the EURES site with improved contents and functionality and integrating the PLOTEUS site, launched several months before, which gives details of education and training programmes across the EU.

Although the recommendations were made some years ago, they remain no less relevant today. Only limited progress, therefore, has been made in most of the areas. Social security rights, therefore, remain in many cases non-transferable between Member States, especially pension entitlements. A European health insurance card, however, was introduced in 2004 to facilitate access to health care to those moving across national borders.

Some progress has been made on the recognition of professional qualifications, but in several areas it remains difficult for people working in a particular job in one country to take up a similar one elsewhere. The EU is, therefore, currently working on a new directive to consolidate the existing 15 directives on the recognition of professional qualifications and to clarify the regulations relating to this, which should make it easier for such people as architects; dentists; doctors; lawyers; nurses, pharmacists and vets to pursue their professions

in other Member States (European Commission, 2004b). At the same time, little advance has been made in developing commonly agreed ICT and e-skill definitions. Moreover, the internal market for services is yet to be established.

On the other hand, a Community framework has been put in place – or more accurately, is in the process of being put in place – to make it easier for young people (and indeed older people) to study abroad and to increase the European dimension of education and training systems as well as to improve the transparency of qualifications and skills. The latter includes developing a European qualifications framework (EQF) and the European credit transfer system (ECVET), designed to facilitate, inter alia, the movement of students and trainees between countries, which are described in the next section. It also includes establishing the Europass system, devised to document in a clear and uniform way the credentials of individuals from different countries, with a common European CV and a common form of indicating academic records, professional or occupational qualifications, linguistic skills and experience of studying or training in other countries (European Parliament and Council, 2004).

Regarding migrants from non-EU countries, although a directive has been agreed, as noted above, on the right of those who have lived for a long time in one Member State to have unrestricted access to employment, education, health care and social security elsewhere in the EU, a harmonised system for managing migration into the EU seems some years away.

Some progress, if slow, has also been made on increasing mobility within the education and training system as described below. Such mobility is regarded, as noted above, as a key element in fostering greater movement of workers, in that it accustoms young people to living in other countries – or, indeed, regions – and increases their awareness of the potential advantages involved. Increasing the mobility of students and trainees has also been a priority objective of VET policy at EU level in recent years, as described below.

One potentially important obstacle to mobility, not mentioned explicitly in the action

plan, are the systems of employment protection legislation combined with the qualification requirements which are often applied to jobs and which vary considerably in their restrictive effect between countries. As mentioned above, the former can deter both employers from releasing labour and employees from seeking new jobs, so limiting the extent of mobility, while the latter add to the difficulties faced by those coming from other countries to find work. Although the detrimental effects of employment protection legislation have been the focus of increasing attention at EU level particularly by Economics Ministers and the European Central Bank, qualification requirements have attracted less interest, except in respect of establishing mutual recognition of qualifications obtained elsewhere. Such moves, however, while important, do not really address the issue of whether the qualifications required to be able to be considered for a particular job are justifiable or not.

This is equally a problem for occupational mobility, which can limit the extent of movement out of declining activities into expanding ones and is arguably at least as important to tackle as removing restrictions on geographical movement so far as alleviating labour-market imbalances and potential skill shortages are concerned.

4.2. VET policies at EU level and their implications for mobility

The adoption of the Lisbon objectives gave added impetus to greater cooperation between Member States on policies for education and training. But even before Lisbon, in 1999, Ministers for Education from the EU and other European countries had met in Bologna and signed a declaration, committing themselves to working towards establishing a common framework for higher education which would enable programmes and qualifications in different countries to be more easily compared (CEURC and CRE, 1999). The declaration called for action, among other things, to develop

a system for the accumulation and transfer of credits, to increase mobility of students and teachers and to cooperate over quality assurance as well as to enhance the European dimension of higher education.

Subsequent to Lisbon, this set of objectives was extended to vocational education and training by the European Council in Barcelona in 2002, which called for further action to introduce measures to ensure the transparency of diplomas and qualifications but adapted to vocational education and training. As in the Bologna process, this was to be based on voluntary cooperation between countries and on mutual trust to establish a system for the common recognition of skills and competences as well as formal qualifications so as to increase mobility and facilitate access to lifelong learning. In addition, a parallel concern was to strengthen the European dimension of vocational education and training so as to encourage the development of cooperation between VET institutions in different countries and transnational initiatives generally as well as to stimulate mobility.

This was followed at the end of 2004 by the Maastricht communiqué signed by VET Ministers from 32 European countries, as well as by the European social partners, which reaffirmed the commitment to cooperation to modernise education and training systems across Europe. It called for priority to be given at the European level to ‘the development of an open and flexible EQF, founded on transparency and mutual trust [...] will provide a common reference to facilitate the recognition and transferability of qualifications covering both VET and general [...] education, based mainly on competences and learning outcomes’ (European Commission, 2004e). It also called for this to be supported by ‘instruments agreed at European level, particularly quality assurance mechanisms to create the necessary mutual trust’ and by the development of the ECVET in order ‘to allow learners to build upon their achievements (i.e. on the knowledge and know-how acquired from their previous training) [...] when moving between learning systems’.

These recommendations have subsequently been endorsed by the Council and the European

Parliament and concrete steps have been taken to establish both a practical EQF (EP, 2006) and the ECVET (for details see European Commission, 2004c). Here is not the place for a detailed examination of these two systems. Both are highly dependent on agreement being reached across the EU about the practicalities of their operation – on, for example, the measurement of ‘learning outcomes’ in the case of the EQF or on the units attributed to particular training programmes, or components of them, in the case of ECVET – and on them being generally accepted not only within the VET community but also by employers. Quality assurance arguably has a key role to play in this regard to give confidence that the VET programmes on offer in different parts of Europe are capable of producing the skills and competences expected and required to perform particular jobs efficiently.

Both the EQF and ECVET are of major importance for achieving higher levels of mobility within Europe not only of students and trainees but also, partly through this, of workers. Both can obviously reduce barriers to movement for study and training purposes, which is likely in itself to enhance the learning experience by broadening and deepening the understanding of different European cultures and perspectives. This, as noted above, will tend equally to bring about greater labour mobility as those who have gone through this experience embark on their working careers. Increasing the European dimension of education and training programmes, quite apart from expanding the numbers who study abroad at least during part of their courses, has a potentially important role to play in this regard by reducing insularity and creating greater awareness of the possibilities of working in another country for a time, as well as providing better understanding of the countries concerned.

4.3. Mobility in education and vocational training

As noted above, increasing mobility of students and trainees is a key part not only of education policy in the EU but also of the

Lisbon strategy aimed at strengthening the economic competitiveness and raising the level of employment in the EU. According to the Lisbon Council, mobility is an important means of increasing the skills of the workforce and of promoting lifelong learning and 'a vital component in the establishment of a European area of knowledge and learning. Not only can the free movement of students and teachers support the dissemination of knowledge throughout Europe, but it can also enhance personal and professional skills and contribute to European cohesion' (Council of the EU, 2000).

Two Community programmes in particular were established some years ago to increase the number of young people undertaking at least some of their education and training in other Member States and these have been strengthened in the recent past to increase the number further. The Erasmus programme was introduced in 1987/88 to assist students to study in another European country during the course of their university degree programmes. Up to 2004, over 1.2 million students had taken part in the programme, the annual number rising progressively from 3 200 to over 135 000 during this period. In 2004, there were over 9 % more participants than the year before, spending an average of 6-7 months in another European country, much the same as in each of the preceding 10 years.

Participation in Erasmus varies across the EU, with France and Spain receiving the greatest number of students and Sweden, Denmark, Ireland and the UK being the biggest net recipients, partly reflecting the limited numbers of young people in these countries taking part in the scheme relative to elsewhere. Significantly more women – 61 % of the total – tend to participate in the scheme than men, which might help to explain the under-representation of sciences in the programmes studied and the over-representation of social sciences and business management.

While the absolute numbers participating in the Erasmus programme each year might seem

impressive, they, nevertheless, represent only around 0.8 % of all university students enrolled in EU and EEA countries.

The programme also assists teachers to undertake part of their training in other countries, some 18 500 teachers participating in 2003/04. As in the case of students, the number of teachers has also tended to increase over the years, with over 9 % more participating in 2003/04 than the year before and over double the number in 1997/98 ⁽³⁵⁾.

The Leonardo da Vinci II programme was introduced in 2000 as a successor to the first programme introduced in the mid-1980s with the aim of supporting the development of both initial and continuing vocational training across the EU and helping people to undertake work-related training. Although it is not primarily aimed at assisting mobility, it has helped significant numbers train in another European country over recent years. In 2002, some 45 000 were assisted to train abroad, up considerably on the number in 2001 (35 000) (The breakdown in the latter year between the types of training assisted and the countries from which the trainees came is indicated in Table 17). Although the number assisted has increased since 2002 – up to the end of 2005, almost 300 000 students, trainees and teachers, or just under 50 000 a year on average, had received to travel abroad under the Leonardo da Vinci II programme, which began in 2000 ⁽³⁶⁾ – it remains, however, well below 1 % of the total number of people undertaking vocational training programmes in the countries in which the programme operates.

Other measures to increase the mobility of students, trainees and teachers in the EU introduced in the recent past are aimed in part at increasing the quality of training, which is regarded as a priority not only to improve the skills and competences of those being trained or educated but also to increase the chances of an effective system for the mutual recognition of qualifications to be agreed across Europe (European Commission, 2004d).

(35) These numbers are taken from *Mobility and cooperation* (European Commission, 2005).

(36) According to a press release issued in May, 2006 (European Commission, 2006b).

Table 17: Participants in the Leonardo da Vinci programme, 2001

	Initial vocational training	Students	Young workers	Exchange 1	Exchange 2	Total
BE	288	282	179	68	33	850
CZ	566	68	69	92	:	622
DK	400	161	5	109	4	679
DE	3 807	1 164	1 150	626	:	7 147
EE	68	29	28	104	10	239
EL	661	39	306	104	:	1 110
ES	1 901	347	1 133	160	3	3 544
FR	1 102	1 948	607	465	3	4 125
IE	:	:	:	:	:	:
IT	1 825	438	1 373	495	:	4 131
CY	4	:	10	14	:	28
LV	107	32	71	80	11	301
LT	95	26	29	245	4	399
HU	572	136	92	213	1	1 014
MT	:	10	51	22	:	83
NL	602	749	43	185	:	1 579
AT	790	364	83	125	22	1 384
PL	547	291	330	449	10	1 627
PT	403	110	187	133	:	833
SI	76	36	22	134	19	287
SK	280	79	63	39	4	465
FI	402	132	34	167	4	739
SE	457	112	114	141	:	824
UK	1 382	726	407	270	:	2 785
BG	279	145	105	61	32	622
IS	49	3	29	91	:	172
NO	253	51	93	81	27	505
EU-25	16 398	7 710	6 390	4 445	128	35 071

Exchange 1: People in charge of human resources, planners, managers, vocational guidance specialist

Exchange 2: Instructors and tutors in the field of language skills.

These measures include:

- (a) the *Erasmus University Charter* and the *Erasmus Student Charter*, introduced in 2003 to improve the standard of organisational arrangements for the mobility of students, as well as an increased focus on the quality of mobility projects under the Leonardo da Vinci programme;
- (b) the Bologna intergovernmental process, stemming from the Declaration in Bologna

in 1999 by Education Ministers from 29 European countries, which was aimed at creating a European Higher Education Area – i.e. one in which there is free movement of students between universities in different countries and a transparent system of qualifications with transferability of credits gained as well as a common assurance of quality – by 2010;

- (c) the Erasmus Mundus programme, for improving the quality of higher education

- and the promotion of intercultural understanding through cooperation with non-EU countries so as to make the EU ‘the most-favoured destination of students, scholars and researchers from other world regions’;
- (d) the Comenius action, which is part of the Socrates programme, for encouraging cooperation between schools in different parts of Europe, for increasing the European dimension of studies and raising awareness of different cultures.

The European Commission has set ambitious targets for increasing mobility in education and training in the EU for the coming years (European Commission, 2004f):

- (a) expanding the number of school children in the EU and their teachers who take part in the Comenius action from 3 % a year to at least 10 % by 2013;
- (b) tripling the number of students who participate each year in the Erasmus programme by 2010;
- (c) increasing the number of people assisted to undertake vocational training in another European country under the Leonardo programme from around 45 000 to 150 000 by 2013;
- (d) extending the Tempus programme for cooperation between Member States and neighbouring countries to cover school, university and adult education as well as vocational training and to increase the number of participants to 100 000 by 2013.

4.4. The effectiveness of policies for increasing mobility

The programmes listed above and the measures described in the previous section aimed at establishing a transparent system of mutual recognition and transferability of educational – both general and vocational – and training qualifications are all aimed in part at increasing the mobility of students and trainees and expanding the number who spend at least part of their time abroad. The underlying intention, as noted, is not only to

improve the quality of educational and training programmes and to broaden the knowledge acquired by participants but ultimately, through this, to increase labour-market mobility in the belief that this is important for tackling potential skill shortages in different parts of the EU in the context of a prospective decline in the workforce. The reform of VET systems across the EU and the creation of a European area of education and training, in consequence, is seen as having both a direct effect in strengthening economic competitiveness and an indirect effect, working through its impact on mobility.

The question remains, however, of how effective the measures taken and the programmes implemented are likely to be in both regards, but particularly in the present context in increasing labour-market mobility. The difficulty in assessing this and evaluating the effectiveness of policies arises not only from the inevitable uncertainty of trying to predict the future but also from the lack of satisfactory data available to examine the outcome in terms of movement among both students and workers. The unsatisfactory nature of the data has been emphasised above and means that the present scale of mobility among both groups is highly uncertain. This applies, in particular, to the movement of labour, which migration statistics and administrative data on residence give only a very incomplete indication of, which is perhaps inevitable given the relaxation or removal of internal border controls. Free movement of labour, therefore, inherently makes it difficult to collect statistics on migration. This is especially the case regarding people who move to work in another part of the EU for a temporary period of time. Just as, therefore, the present scale of labour movement is uncertain, it is likely to be equally difficult in the future to assess whether or not the policies being implemented at present have proved effective in achieving their objectives. Accordingly, the means needs to be found for improving the data for monitoring developments in this regard, perhaps through periodic surveys specifically designed to collect information on movements of labour.

In principle, it ought to be less difficult to collect satisfactory data on students and trainees moving to other parts of the EU to

study or train, since they tend to be moving, for the most part, to identifiable institutions with administrative records on the relevant details of those participating in their programmes or courses. Here it seems to be more a question of organising the data collection more effectively than of designing new surveys.

Leaving aside data issues, there remains a question mark over how successful present policies are likely to be. In the case of those focused on VET, most of the effort seems to be devoted to facilitating the movement of students and less to encouraging the movement of teachers and trainers. While increasing mobility among students might be the main objective, it may prove difficult to achieve without a parallel increase in the mobility of teachers to help broaden the perspective of students and to make them aware of the potential attractions of studying abroad.

Equally, for substantially greater numbers of students to be encouraged to move abroad requires a change in culture and mindsets, combined with a change in institutional arrangements, so that studying in another part of the EU comes to be regarded as an essential component of a rounded education and important preparation for the pursuit of a career in the EU labour market of the 21st century. At the moment, as the data presented above indicates, very few university students spend any part of their course abroad and, almost certainly, even fewer vocational trainees, nor is there as yet evidence of any significant growth in their numbers. This partly reflects the failure of institutional arrangements at national level to encourage this and to support and complement the EU-level programmes listed above. Indeed, in many countries, the prevailing presumption is that students should study or train in their

local university or college and should live at home while they do so, which, because of the social relations they form during their formative years, tends to deter them from moving away once they enter the labour market.

There is equally little sign of any increased movement of labour across the EU over recent years, despite the measures which have been taken to facilitate greater mobility. The factors deterring movement described above – social and family ties, the obstacles posed by the housing market, and so on – seem to be sufficiently strong in many cases to counter employment and earnings opportunities. Policy arguably needs to address these factors, as well as tackling institutional and legal barriers, through, for example, providing more help not only in job search but also in finding accommodation and more social support over both the short and long term.

Ironically, the countries in which people have shown the greatest tendency to migrate, the new Member States, are those which have had controls imposed against them by other countries in the EU to restrict the number concerned. While increased mobility, therefore, might be regarded as important to correct labour-market imbalances, in the context of relatively slow economic growth and persistently high unemployment, the inward movement of labour tends to be seen as a threat to the resident workforce, irrespective of whether it helps to alleviate labour shortages in certain areas, in low skill, low wage activities as much as in high skill ones. In this regard, policy-makers need also to address the concerns of the resident population and to tackle the social tensions which can arise from the influx of migrants, especially if they concentrate in particular places⁽³⁷⁾.

(37) Such concentrations are frequently among migrants from outside the EU, but they can also be among migrants from other parts of the EU, such as in the case at present of Polish immigrants to the UK, many of whom are working in agriculture and have established sizable communities – in relative terms – in several small towns in rural areas.

5. Conclusions: implications for policy and future research

The lack of satisfactory data on migration and even more on short-term movement makes it difficult to assess the extent of geographical mobility which at present exists across the EU. The indications are, however, that it is relatively limited both among students and trainees and among workers and that it has shown little tendency to increase over recent years, so far as migration across national borders are concerned at least, since there are no up-to-date data available on movements between regions. The limited data that exist on regional mobility suggest that this varies markedly between countries, being lower than average in the southern countries and the new Member States, both regarding migration between regions and commuting, and higher than other parts of the EU in Germany, the Netherlands and the UK.

A major exception to the small scale of migration concerns movement from the new Member States into the few countries in the EU-15 which have not imposed restrictions on the ability of people from the countries concerned to take up employment within their borders. This seems to have been very much greater than estimated beforehand and demonstrates the substantial gap which exists in employment opportunities and living standards between the new entrants and most of the EU-15 Member States.

The evidence suggests that such a gap needs to be wide to induce large-scale movement in the face of the reluctance which people typically have to move away from the place they grew up in and/or where they have social and family ties. While, therefore, policy might be capable of removing artificial obstacles to mobility, in the form in particular of restrictions on entitlement to residence and employment, though also the transferability of social security rights and pensions, and of helping people to overcome language and cultural barriers, it is more difficult to tackle these more fundamental, if less tangible, aspects.

The evidence also suggests, as a reflection of these aspects, that more educated and skilled people are more likely to move than less skilled. This applies to movements between regions as much as between countries. At the same time, those with high education levels migrating into the EU from non-EU countries seem less likely to be able to take up jobs which are in line with their qualifications than the resident population or those moving from another Member State. A significant number of migrants with tertiary level qualifications, therefore, are employed in low skill jobs across the EU.

This relative concentration of the more highly educated among those migrating, while it might ease labour shortages in the more prosperous regions and countries and alleviate labour-market imbalances across the EU in the short-term, is liable to worsen imbalances in the longer-run. In this process, therefore, lagging economies tend to lose some of their most valuable human resources, so reducing their attractiveness for investors and damaging their potential for economic development.

In consequence, although the evidence suggests that there are other factors behind migration between regions at least, in addition to labour-market conditions, these likely adverse effects need to be taken into explicit account in the formulation of policy. While it should be a major concern of policy across the EU to remove restrictions on the ability of people to move across national borders, as well as barriers to people moving between regions, to ensure that EU citizens are free to live and to work in the places they wish, there should be an equal concern to avoid this leading to widening demographic and economic imbalances. Measures to facilitate free movement, therefore, need to be accompanied by action to strengthen the economies of weaker countries and regions within the EU to prevent migration flows being all in one direction.

This is particularly the case regarding the new Member States, several of which seem

to have experienced a significant outflow of skilled labour since their transition to market economies began, and which, as noted above, seem to have experienced an even bigger outflow since their entry into the EU. Structural policies, therefore, and financial support from the Structural Funds have a crucial role to play in strengthening the capacity of the economies of these countries to develop and grow and thereby encouraging people to live and work rather than move abroad.

While the range of measures taken at European level in recent years to facilitate geographical mobility have been extensive, there remains a question mark over their effectiveness in increasing the scale of international and regional mobility. They have focused, in particular, on dismantling legal and regulatory restrictions, which though essential, still leave, according to surveys important obstacles in the form of lack of foreign language skills and difficulties in finding suitable employment as well as the disruption of social and family ties. Despite the efforts made to increase the learning of languages and to establish a an EU-wide system for advertising job vacancies in Member States, more action, therefore, seems to be necessary in both areas.

The measures taken have also encompassed action to increase the transparency and transferability of education and training qualifications, to make it more possible for people to study and train abroad at least for part of their courses. While these are important moves in their own right which can only enhance the quality of education and training programmes across Europe and expand the opportunities opened to learners, their effectiveness in terms of increasing the scale of movement is likely to depend on parallel changes in attitudes towards studying abroad and in institutional arrangements to encourage this. This is likely to depend, in turn, on more importance being accorded to a European dimension in national education and training programmes and greater weight being attached to this by employers.

The underlying rationale that increasing mobility among students and trainees is

likely to lead to greater labour mobility is a compelling one, though the potentially adverse consequences of this on the economically weaker countries and regions, noted above, need to be kept firmly in mind. Just as it is important for regional balance within the EU to avoid movements of labour being in the same direction, it is equally important to ensure that greater mobility of students does not simply result in a bigger brain drain. Accordingly, there is a parallel need to strengthen the education and training facilities in weaker countries and regions to make them more attractive places to study, along with strengthening their economies so that those who do move elsewhere to study have less incentive to remain there when they start working.

These implications for policy, however, rest, it should be emphasised, on an analysis which is inevitably restricted by the data available. The unsatisfactory nature of these data has been stressed at various points above and is in large measure responsible for the limited amount of research which has been undertaken on issues relating to geographical mobility in Europe. There is a need, therefore, both for an improvement in the data available at EU level and for more research into several aspects which are important for policy. These include not only the factors motivating people to move between regions or countries for both study and employment purposes and the obstacles they face, but also the extent to which movement is temporary as opposed to permanent (or at least long term), the benefits they gain and, more problematically, the consequences for the places they leave behind .

Although the investigation into the latter is in some degree dependent on more and better data becoming available on the number of people moving between countries and regions to study and work and on their characteristics (their education and skill level, their fields of study or vocation), much of the research which is required to inform policy can only effectively be conducted by means of longitudinal data or detailed case studies of individuals. The need, therefore, is to be able to monitor the education and career paths of individuals as they move from one place to another.

A further area where more research is required, which is equally important for policy, concerns the nature of labour shortages in different parts of the EU which migration can potentially alleviate. The prevailing view is that these primarily concern high skill activities, though the indications are that there are equally important shortages in many countries at the lower end of the labour market, for low skilled workers who are willing to undertake low quality jobs for low wages. The extent of the latter

shortages is at present uncertain and the fact that the jobs in question often involve illegal immigrants working in the informal economy has tended to mean that such labour shortages and the way they are met are largely neglected in policy discussion. This, however, does not diminish their importance or reduce the need for a more complete understanding of the role of migration in meeting the excess demand for labour in different areas and the social as well as economic issues surrounding this.

List of abbreviations

LFS	Labour force survey
EEA	European economic area
ECVET	European credit for vocational education and training
EQF	European qualifications framework

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Social mobility and VET

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Abstract

The objective of this paper is to discuss social mobility within the broader context of socioeconomic developments in modern societies and to analyse the role of education systems and particularly VET in reproducing social stratification.

Social mobility is defined either as a result of class structural changes, changes in socioeconomic and occupational structures (absolute mobility) or as ‘social fluidity’ meaning mobility within the class structure (relative mobility) influenced by the relative chances individuals from different social origins have of occupying different class positions. The paper provides an insight into social mobility trends in Europe based on empirical data and findings of comparative research focused on the second half of the last century.

Social mobility theories and research projects have focused on the role of education as determinant of the class position that an individual comes to occupy; based on research projects and selected case studies, the paper examines the relationships between class origins and educational attainment, and educational attainment and class destination. Social background, cultural capital, income distribution and educational resources have a critical role to play. This paper discusses the impact of certain policy interventions and educational reforms – notably those aimed to affect the hierarchical relation and promote parity of esteem between general and vocational education routes – on the reduction of inequalities in educational attainment.

Considering current trends (new skills and competences, new recruitment criteria), which may hamper traditional educational policies, as well as the association between education (credentials) and job-placement, this contribution examines how VET could match emerging requirements of the labour market and overcome rather than reinforce social inheritance effects.

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Introduction

Vocational education and training (VET) should be approached within the broader concept of human resource development that comprises both the supply side of human resources and the demand side, as well as the relation/interaction between supply and demand of the labour force. The supply side covers people who have acquired skills in various types and fields of formal and non-formal education and training including VET, whereas the demand side covers the labour market, its job requirements, work ethics and norms that affect transition from education to the labour market and the employment of workers.

Within this context, the objective of this contribution is to:

- (a) discuss social mobility within the broader context of socioeconomic developments in modern societies and how social mobility is affected by current trends and developments;
- (b) investigate the role of education systems and particularly VET in reproducing social status and stratification;
- (c) analyse and judge to what extent and under which conditions education/VET can promote social mobility and reduce educational inequalities;
- (d) examine the current situation and trends in the labour market in relation to new recruitment criteria, and new skills demanded by the labour market.

Given that new conditions in the market may hamper education/VET policies that aim to reduce social inequalities in educational attainment, this contribution will examine if and how education, including VET⁽¹⁾ can overcome rather than reinforce class

barriers and inequalities. Several aspects and interacting factors will need to be considered, and particularly social inheritance effects in association with education and occupational destinations.

Following this short introduction, the first section provides a set of definitions and concepts related to social mobility, that is social status and position, social stratification and occupational structure, as well as a brief presentation of class theories and typologies. This paper is not an attempt at in depth analysis of theories; its purpose is to present basic concepts and definitions that will enable analysis of social mobility in modern societies in relation to education as an intermediating factor between class origins and destinations.

The second section provides an insight into social mobility trends in Europe based on empirical data and findings of comparative research focused on the last 30 years of the 20th century.

Whether education can make a difference to social class inequalities has been widely debated; the third section discusses the mediating role of education between class origin and destination (origin/education/destination schema) and particularly analyses social inheritance effects on educational attainment based on findings and data of selected case studies. In this section education is addressed in its broader sense including VET as part of the formal education system.

The fourth section is mostly concerned with VET and its particular contribution to social reproduction and mobility. It is also concerned with comprehensive versus selective education to discuss the impact of certain educational reforms – aimed at transforming the hierarchical

(1) In this contribution, we will use the term 'education' in a generic manner that encompasses VET as part of the formal education system. Section 4 is nevertheless dedicated to research that has investigated the specific role of VET on social stratification and mobility.

relation between general and vocational pathways – on the reduction of educational inequalities.

The fifth section addresses the issue of soft skills and how emerging requirements in the labour market and recruitment criteria, which emphasise soft skills rather than (or beside) educational credentials, affect VET curricula and redefine inequalities of opportunity.

The concluding section presents the basic conclusions and outcomes.

The paper is primarily based on desk research: surveys and research papers on social mobility and education, reports on education and VET policy documents, thematic reports, as well as articles and publications. Desk research also included electronic sources (websites, documents available through the Internet) and selected bibliography.

1. Social mobility: definitions and conceptual framework

Social mobility is defined as the degree to which, in a given society, individuals' offspring and subsequent generations move up (and down) the social scale or as the degree to which individuals' social standing can change throughout the course of their lives. Although both definitions are applicable, social mobility is usually envisaged by relevant sociological research as the intergenerational movement between social origin and destination rather than within a life-course perspective. Theoretical approaches to social mobility refer to a set of interrelated concepts that involve social stratification and occupational structure, social status and position, as well as typologies of social class composition.

In sociological analysis the definition of class has been a rather controversial issue as it reflects varying and confronting sociopolitical and philosophical perceptions. In a broad sense, social classes consist of large groups of people who occupy a similar position in wider society based on property ownership, income and wealth, prestige, education, skills or authority in the social and economic sphere. In the context of different class theories and typologies (Section 1.1), class division is related to various social stratification schemes and hierarchical structures depending on the criteria and factors implemented to differentiate classes.

Social stratification is perceived as the differentiation of a given population into hierarchically related social classes and positions. Social position refers to individuals' standing whereas social class is defined beyond individuals at societal level. Such stratification is a permanent characteristic of any organised social setting, although in many different hierarchical structures and forms defined by socioeconomic and cultural variables. Social

mobility is understood as the transition of people from one social position to another or the movement of individuals among the positions defined by the structure of the division of labour (Durkheim, 1997; Stinchcombe, 1997).

Social status is the standing, the recognition, influence or prestige attached to one's position in society. Even if social status is determined to a great extent by social position, it is often perceived in a broader sense that involves several elements identifiable in a specific social context. In different social settings an individual's social position may carry different social status influenced by cultural and socioeconomic variables. Even in a specific socioeconomic setting, the prestige or recognition attached to social positions may considerably change across time following institutional, economic and political transformations. Therefore, social status seems to be a rather vague concept that does not always help analysis of social stratification and mobility issues.

Occupational position and stratification: an individual's occupational position is not identical to either social class or status, however it is obviously closely related to both. If class is defined in terms of economic resources and interests, for the majority of individuals occupation is the best indicator of these. Though occupational position does not capture all aspects of class, it is probably the best single indicator of it. Thus, the occupational structure not only contains the main dimensions of social stratification, but it also serves as the connecting link between different institutions and spheres of social and economic life. 'The hierarchy of prestige strata and the hierarchy of economic classes have their roots in the occupational structure; so does the hierarchy of political power and authority' (Blau and Duncan, 1978)⁽²⁾. Hence, occupational

(2) The specific goals of Blau and Duncan in their work *The American occupational structure* were to compare the findings concerning mobility in American society with those found in studies in Great Britain, Sweden, and Denmark, and the like. The authors also aimed to study how certain factors of social origin such as race, number of siblings, migration versus indigenous, community size, etc., affect occupational achievement and development.

position gives great insight into social position, stratification and class differentiation, as well as into the mobility of individuals across different hierarchical social positions.

1.1. Social class: theories and typologies

Social mobility is conceptually related to social class or social position within an existing hierarchical structure, since it describes individuals' movement up and down the social scale. As mentioned above, the definition of social class has been a rather complicated and controversial issue as it implies different theoretical and political approaches to social stratification and class antagonism.

In open market societies, class and economic wealth are strongly correlated and, therefore, often difficult to differentiate. Thus, membership in an upper social class provides more opportunities for wealth and power. Economic prosperity is an indicator often related to social class, though in certain societies (the caste system) they are different entities altogether. In newly formed societies with little or no established tradition the reverse is true: accumulated wealth precipitates the leaders of future generations.

Many different schemes have been used by sociological theorists to identify social classes or divisions of rank and wealth, the difficulty being always that the same individuals may fall into several ranks in relation to different criteria and dimensions of social class identification. According to Marxist theorists, the identification of social classes is based on the relationship to the means of production and the power to determine the distribution of wealth; in the Marxian approach, classes are considered as social actors and conflict groups.

Sociologists influenced by the theoretical statements of Max Weber analyse social class

in terms of status, prestige, market and work situation, occupation, income and education. Classes are defined in terms of groupings of related class situations (conditions) that form the determinants of individual life chances. The idea of class situation differentiates Weber's idea even more from the Marxists' view on class division. In the Marxist tradition, social class division does not refer to categories of occupations, status or levels of income; classes are phenomena of the organisation of production. In the Weberian sense class situations are phenomena of the commercial life of a society; individuals' class situation is seen as their market situation, namely the power that people can exercise in the labour, commodity and capital markets determined by goods and labour services they possess and bring to the market to create their income (Scott, 1996).

Dahrendorf (1959) analyses classes as interest groups that arise from structural conditions and affect structural social changes through their actions. The structural condition considered is the distribution of authority within necessarily coordinated associations. Classes are dichotomous interest groups, which are related to participation or non-participation in the exercise of authority.

Defining social classes in a neo-Weberian sense, Daniel Bell – the theorist of post-industrial society ⁽³⁾ – rather emphasises knowledge, skills and qualifications. In his view, in industrial societies capital was the central resource and the capitalist class dominant. In post-industrial society knowledge is expected to become the major resource and the knowledge class occupies the dominant position. The emergence of the post-industrial, information society will transform traditional class distinction giving rise to the educated middle class.

To illustrate the neo-Weberian approach, Anthony Giddens (1973) who develops the concept of structuration of class relationships can be quoted. His key notion is market capacity based on three main factors: (a) ownership of

(3) Bell (1974). Five dimensions of post-industrial society: (a) good-producing to service economy, (b) dominance of professional and technical class, (c) centrality of theoretical knowledge, (d) future orientation, (e) scientific decision-making – intellectual technology. Bell believed that as industrialisation advanced, technology would gradually replace blue-collar workers; a corresponding rise in demand for services would lead to the emergence of information as the central indicator of class. Those who possess the ability to handle information – including professional and technicians – to provide services would form a new prominent middle class, whereas blue-collars would largely disappear (Noble, 2003).

property in means of production; (b) possession of educational and technical qualifications; and (c) possession of manual labour-power. While Giddens' work is mainly theoretical, the neo-Weberian operationalisation and measurement of class structure can be primarily linked to John Goldthorpe and his colleagues (Goldthorpe, 1980; 1987; Erikson et al., 1979; Erikson and Goldthorpe, 1992). The class schema proposed by them is called EGP classification and contains 11 classes in its most detailed form.

1.1.1.1. The EGP class schema

The EGP class schema (Erickson et al., 1979) was introduced to distinguish social classes, which differ in terms of labour-market position,

the position in production units and employment relations. The EGP schema allocates (occupational) positions to classes to capture the major dimensions of positional differentiations that are determinant of the distribution of life chances. In this context, class analysis is based on the empirical investigation of the consequences of a class structure defined *ex ante* (Breen, 2004), namely interests and attitudes people may have or their children's educational attainment depending on the cultural and economic resources they possess (Section 3.2).

Three major class situations are proposed: employers, self-employed workers without employees, and employees. Employees naturally represent the largest group of earners

Table 1: The EGP class schema

Class	Description	Employment relations	Casmin version
I	Higher-grade professionals, administrators and officials; managers in large industrial establishments; large proprietors	Employer or service relationship	I+II Service class
II	Lower-grade professionals, administrators and officials; higher-grade technicians; managers in small industrial establishments; supervisors of non-manual employees	Service relationship	
IIIa	Routine non-manual employees, higher-grade (administration and commerce)	Intermediate ^(a)	III Routine non-manual
IIIb	Routine non-manual employees, lower-grade (sales and services)	Labour contract	
IVa	Small proprietors, artisans, etc., with employees	Employer	IVab Non-farm petty bourgeoisie
IVb	Small proprietors, artisans, etc., without employees	Self employed	
IVc	Farmers and smallholders; other self-employed workers in primary production	Employer or self employed	
V	Lower-grade technicians; supervisors of manual workers	Intermediate	V + VI Technicians, supervisors and skilled manual workers
VI	Skilled manual workers	Labour contract	
VIIa	Semi and unskilled manual workers (not in agriculture, etc.)	Labour contract	VIIa Semi and unskilled manual workers (not in agriculture)
VIIb	Semi and unskilled manual workers in agriculture	Labour contract	VIIb Semi and unskilled manual workers in agriculture

^(a) Higher grade, routine non-manual occupations (IIIa) and lower technical and manual supervisory occupations (V) comprise positions with associated employment relationships that would appear characteristically to take on a very mixed' (Erikson and Goldthorpe, 1992) and which are labelled 'intermediate', i.e. between a service relationship and a labour contract.

within the wider three class positions. Further distinction is introduced according to the type of employment relations: a service relationship, a labour contract or an intermediate between the two relationships, and occupation. The EGP schema in its extensive version distinguishes 11 classes, although it is usually implemented in more inclusive versions, such as the Casmin schema (comparative analysis of social mobility in industrial nations): a seven-class version that was applied for the needs of the Casmin project⁽⁴⁾. The project also developed the Casmin educational classification scheme to combine educational qualifications from different countries and enable cross-national comparative analysis.

The EGP class schema has adopted a class-structural perspective that derived from the discussion of different conceptual contexts, within which the study of social mobility may be undertaken. The class-structural schema has provided the basis for numerous ‘mobility tables’ correlating empirical data through which the authors have attempted to analyse social mobility (Erikson and Goldthorpe, 1992, Section 2). The assumptions underlying the EGP schema as well as the related methodical context have been used by several researchers to support social mobility analysis within certain national contexts and cross-country comparative studies; some are presented in the following sections.

Although other typologies are also applicable, the EGP schema – along with its underlying theoretical context – is generally considered adequate and sufficiently comprehensive to reflect the complexity and the wide range of the occupational structure in modern societies that could not be limited in rough groupings and simplistic classification schemes. ‘The aim of the class schema is to differentiate positions within labour markets and production units or, more specifically, to differentiate such positions in terms of the employment relations that they entail’ (Erikson and Goldthorpe, 1992, p. 36). An important characteristic of the neo-Weberian class analysis is that classes and occupational positions assigned to them are of interest to the extent that they shape life chances. The

distinctions captured in the EGP class schema are held to produce differences in life chances: class position is the determinant of ‘experience of affluence or hardship, of economic security or insecurity, of prospects of continuing material advance, or of unyielding material constraints’ (Erikson and Goldthorpe, 1992, p. 236).

Because it associates occupational positions with corresponding class positions, the EGP schema provides an analytical framework to examine social mobility in relation with education as an important determinant of occupational position and related life chances. It is within this context that social mobility research examines the relationship between class origin and education as well as between education and socio-occupational destinations.

This contribution neither intends to address the whole range of issues related to social mobility in industrial societies, nor aims to present in depth the theories underlying social and occupational structures in their historical evolution. Its purpose is to present basic concepts that will enable analysis of social mobility in modern societies and education as an intermediating factor between the class origin and destination; and additionally to judge the importance of certain measures and educational policies in affecting the role of education and training.

1.2. Social mobility: absolute mobility and social fluidity

Social mobility is usually perceived as a positive trait, but it is a two-sided process that entails both upward and downward mobility. A common error when discussing social mobility is to disregard upward mobility’s negative aspects, along with downward mobility. If people can manage an upward shift in their social position, they can just as easily or maybe more easily slip downward, although there may be certain conditions that favour upward rather than downward mobility.

Another common error is to focus on a few exemplary cases while neglecting average cases, to focus on individual cases rather than

(4) Casmin project: the project used data from the late 1960s and early or mid 1970s to compare patterns of social mobility between nine European countries and Australia, Japan and the US. The Casmin project led to *The constant flux* (Erikson and Goldthorpe, 1992).

on social groups. The fact that individuals who originated from lower classes have managed to reach higher levels in the social scale does not necessarily prove that society, in general, enjoys high rates of social mobility. However, more moderate degrees of social mobility occur regularly; for example, an unskilled worker may eventually acquire the expertise necessary to move to a higher-paying job and become a part of the middle class.

Box 1: Types of social mobility

Intragenerational mobility refers to the social mobility within a single generation. It is measured by comparing the occupational status of an individual at two or more points in time. Thus if a person begins their working life as an unskilled manual worker and 10 years later is employed as an accountant, they are socially mobile in terms of intragenerational mobility.

Intergenerational mobility refers to the social mobility between generations. It is measured by comparing occupational status of children with that of parents. Thus, if the son of an unskilled worker becomes an accountant, he is socially mobile in terms of intergenerational mobility.

Absolute mobility refers to the total mobility, which takes place in a society. It is measured by figures, which reveal the numbers of individuals within each class who have been socially mobile, i.e. the absolute number or proportion of people in a social group who are upwards or downwards mobile.

Relative mobility on the other hand, is calculated by comparing the mobility prospects of different social groups at the same point in time. Relative mobility is concerned with the chances (or the degree of inequality in chances) people from different backgrounds have of attaining different positions.

Source: Covington, 1997.

As mentioned above (Section 1), social mobility is usually envisaged by relevant sociological research as the intergenerational movement between social origin and destination rather than within a life-course perspective (intragenerational mobility).

Intragenerational mobility studies look at the changes in social and occupational position during an individual's life and particularly between the social class of first job and of current job in a specific time, although more

complicated studies seek to capture individuals' detailed career trajectories. 'The data demands for the study of class career mobility are far greater than for the study of intergenerational class mobility and it is perhaps no accident that the kind of large cross-national comparative studies of intergenerational mobility. [...] have no counterpart in the study of career mobility' (Breen, 2004, p. 3).

Intergenerational mobility can be a consequence either of changes in the socio-economic structure (structural changes) and/or of social fluidity between classes within a relatively stable class and occupational structure. We could suppose that social fluidity is likely to increase when structural changes occur. This is not always the case; it is not clear whether increased rates of absolute mobility improved by structural changes at societal level are associated with a significant increase in relative class opportunities that affect social fluidity rates.

Box 2: Social fluidity and absolute mobility – Schumpeter's illustration

Schumpeter attempted to illustrate the differences between social fluidity and absolute mobility using the example of a residential hotel.

'For many years, an oddly designed residential hotel remained in its original, roughly pyramidal form, with the rooms improving from the bottom floor to the top. Over this period, "mobility" could only occur by individuals changing rooms; and, since the hotel was always full, such mobility had to be quite symmetrical: for every resident who moved up to a better room, another had to move down to a worse room. The extent of such movement is an expression of "fluidity" effects.

However, after a time the hotelier decided to upgrade his establishment, and did so by reducing the number of rooms on the bottom floor while expanding at the top. As a result of this development, therefore, some "upward" mobility could occur in an asymmetrical way: some residents could move up without any having to move down.

Schumpeter's hotel illustrates the single most important finding of mobility research: the effects of "class structural change" are far more important than fluidity effects in regard to either changes in observed rates of class mobility over time within particular national societies, or differences in observed rates of class mobility among national societies' (Goldthorpe, 2005).

As described by Joseph Schumpeter, upward and downward mobility is a result of fluidity or interchange between floors, insofar as the upward movement of lower level residents implies that others move downwards. Any changes that increase the number of high level or luxurious rooms would enable lower level residents to move upwards without anyone having to step down. Social fluidity can be achieved by individuals changing positions from lower to higher social levels and vice versa, while the structure and, hence, the positions available within each level remain stable; absolute mobility can be achieved when the analogy between levels changes.

In a more theoretical perspective, absolute mobility could be perceived simply as movement between origins and destinations or current socio-occupational positions, whereas, social fluidity or relative mobility could be defined as the relationship between class origin and current class position; it is based on the comparison between people of different class origins and the chances they have of being found in one destination class rather than another. 'The degree of social fluidity is generally taken as an indicator of societal openness: the extent to which the chances of access to class positions are equally or unequally distributed' (Breen, 2004, p. 4)

In any case, social mobility – either in absolute or relative terms – could be considered as an inherent process of modern democratic and competitive societies that enables in various degrees the evolution of existing socioeconomic structures and their adjustment to emerging demands and imperatives.

However, it is doubtful if social mobility could be considered by definition as a linear and progressive process that entails better positioning and equal opportunities for all; it is a rather neutral concept in the sense that it describes both upward and downward movements and opportunities not equally distributed among classes within a broader socioeconomic context (macro level) which is affected by structural changes.

1.3. Social mobility and liberal industrialism

Social mobility is a rather central issue in prevailing theories of liberal industrialism⁽⁵⁾ due to the centrality of progressive change in their theoretical perceptions. Mobility reflects not only the degree of openness of societies but also the prospects for political action to achieve greater openness. As claimed by the theorists of industrialism, western industrial societies, based on the principals of liberalism and the open market economy, have provided much more possibilities for social mobility in comparison with previous (and contemporary) rather static social-economic models. Official or legally recognised class designations do not exist, and it is theoretically possible for any individual citizen to improve their social position and move from poverty and low social recognition to wealth and social prominence even within one generation. It is, nevertheless, questionable if such examples tend to be the exception rather than the rule. While a few individual members of the working class or even immigrants manage to achieve social status of high recognition or power, it is questionable if the overwhelming majority does.

Liberal industrialism is based on the assumption that in industrial societies, in comparison with pre-industrial ones:

- (a) rates of social mobility are high, and upward mobility predominates over downward mobility;
- (b) mobility opportunities are more equal, in the sense that individuals of differing social origins compete on more equal terms to attain (or to avoid) particular destinations;
- (c) rates of mobility and the degree of equality of opportunity both tend to increase.

To justify the openness of modern societies, it is claimed that in the industrial era rapid technological developments and innovations tend to modify and increase differentiation and complexity in the structure of the division of labour.

(5) Theoretical approach developed by several American sociologists in 1960s-1980s, Kerr, Dunlop, Parsons et al.

As the productive system changes, redistribution of labour among economic sectors and among an increasing range of occupations is more than imperative. Technological developments require upgrading the labour force as new methods of production raised the quality of work. Low-skilled jobs and work positions are gradually being replaced by occupations of higher qualifications improving thus the status of the labour force as a whole. High and increasing levels of mobility and openness are integral to the functioning of industrialism. At the same time, the industrial society tends to become more meritocratic as class inheritance is less important than achievement: the progressive development of the production system towards increased performance can benefit to the maximum from human resource abilities and talents. In this context education becomes a predominant factor, firstly to address the increasing needs for qualifications and secondly to promote meritocratic selection and rational distribution of labour across the occupational structure. Further, the transition towards a post-industrial society is characterised by the proportionate increase of middle class strata and, according to Bell, by the fact that knowledge has become the major resource, supplanting capital (Section 1.1); thus, theoretically opportunities for success and upward mobility are improved for all.

Remarkable structural changes that affected the class and occupational composition of contemporary western societies have actually occurred as a consequence of the proportionate expansion of the service sector and at the same time the gradual decline of jobs in the manufacturing sector. That is, transformations in the structure of the industrial economy and the gradual shift towards post-industrial patterns have considerably affected the observed rates of social mobility. More managerial, white-collar and intellectual, non-manual occupations and less manual, blue collar, unskilled jobs in the labour market characterise the transition to

post-industrial models which favours upward mobility (following Schumpeter's illustration the expansion of the service sector has created 'more room at the top').

However, social mobility is not a one-sided process and structural changes can develop in many directions, which do not always fit predictions of the liberal industrialism model. Considerable increase in professional and managerial positions may also occur along with substantial increase in low-grade, low-skilled jobs. For example in Britain, since 1990 the professional and managerial salaried has continued to expand as a result of de-industrialisation, but more slowly than before; in parallel, intermediate-grade jobs often associated with the manufacturing sector have fallen off sharply, but it has also been reported that low-grade jobs have increased, especially in the service sector, with low salary, high insecurity and minimal prospects for advancement (Wolf, 2002; Goldthorpe, 2005). Deteriorating working conditions of lower qualified people may be explained by various mechanisms at play in the labour market: (a) redistribution of employment between sectors, (b) introduction of new technologies, (c) labour market substitution, (d) labour market segmentation (Cedefop, Brandsma, 2001).

In Italy, although structural changes have signed the transition from an industrial to a post-industrial economy (constant though slow upgrading of the occupational structure), industry still remains the widest productive sector and the working class is currently of the same size as during the 1980s. Despite the expansion of higher education qualifications, no real and stable reduction of class inequality in terms of educational opportunities has occurred. Absolute rates of mobility have remained substantially stable during the period 1985-97, with the exception of men's upward mobility by 7 %. As for relative mobility chances, the picture is more complicated (Pisati and Schizzerotto, 2004).

2. Trends in social mobility

Although liberal industrialism has captured the main features of modern industrial societies and their transition to post-industrial forms, in fact structural transformation in European countries seems to move in a more complex way which does not appear linear nor is it characterised by constant upgrading of the social structure.

Sociological research has revealed that social mobility seems to have slowed down or even reversed in spite of redistribution policies and considerable investment in education in the last decades (Goldthorpe, 2005). As for the observed rates of class mobility, the impact of structural changes seems to be more important than social fluidity effects.

Increases in social fluidity rates have in fact been observed in modern societies – in Europe and abroad – however they are still relatively small and episodic. Even if relative mobility rates were higher and social fluidity among classes increased, it would be again structural changes that would have fostered mobility rates in absolute terms. On the other hand, if increasing social fluidity rather than absolute mobility rates was the objective of a social reform agenda, then structural changes would have become less relevant. The emphasis would have to be placed on reducing the inherent dependency between original class positions and destinations.

A comparative study carried out by Erikson and Goldthorpe (1992) – that led to *The constant flux* – used cross-national data collected by the Casmin project, covering the period from the late 1960s till the mid-1970s. The study focused on the western and eastern European experience of social and economic growth after the Second World War. The authors particularly aimed at comparing patterns of social mobility between nine European countries: England and Wales, France, Northern Ireland, Scotland, the Republic of Ireland, West Germany, Sweden, Poland and Hungary, but also to examine the experiences of Australia, Japan and the US,. In combining historical and statistical analyses both of trends in mobility and of cross-national similarities

and differences, the authors concluded that wide variation at the level of observed mobility coexists with a surprising degree of constancy and commonality in underlying patterns of social fluidity.

Breen (2004) examined the relationship between the class position individuals occupy and the class into which they were born. The study analyses social mobility in 10 European countries (Great Britain, France, Ireland, West Germany, the Netherlands, Italy, Sweden, Norway, Poland, Hungary) and Israel, based on empirical studies and data. Although there is a considerable overlap with *The constant flux* study and the authors have adopted a similar methodological approach, this study has provided findings and conclusions over the last 30 years of the 20th century, after the 1970s.

The researchers conclude that during this period countries converged in the shape of their class structure and in their patterns of social mobility. The countries studied were by the end of the 20th century more alike in their flows between class origins and destinations than they were 30 years before. As far as inequalities between individuals from different class origins in their access to better class positions are concerned (social fluidity), no trends towards international convergence or divergence are detected. It is, however, stated that a general reduction in the strength of these inequalities is observed in several countries, most notably in France and the Netherlands. Great Britain and Germany proved, however, to be an exception: inequalities seemed to have changed little, if at all, during the reporting period.

In Germany ‘a generally greater inequality in class mobility chances’ is detected, meaning that inheritance of class positions is higher in Germany than in other countries with the exception of the service classes (I+II in EGP schema) (Muller and Pollak, 2004). Mobility barriers between the hierarchical levels of the class structure are strong, namely less social mobility or fluidity is detected. Two sets of

institutions have been held responsible for the particularly high levels of 'immobility' in German society:

- (a) the education system: less reform was carried out in Germany compared with many other countries. Early and rigid tracking in general education has led to strong vertical stratification;
- (b) the labour market: status and other advantages distinguish between broad categories of manual and non-manual workers.

In France, structural transformations created 'more room at the top' and, consequently, affected positively absolute rates of intergenerational mobility (absolute mobility). However, their impact on relative mobility rates is unclear, as it is possible that association between class of origin and destination was rigorously preserved despite the wider access ('more room') to professional (higher) level occupations (Vallet, 2004).

Breen and Luijkx (2004) summarise the empirical findings and discuss issues in the development of explanatory theories of social mobility. They propose two kinds of explanation for variations in social mobility: micro-models, in which the role of education is central; and macro-models, which seek to relate mobility to features of societies as a whole such as the level of inequality and economic development. Moreover, they look at the policy implications of the results, particularly as they concern the role of the education system.

In general, conclusions drawn from the analysis of 11 countries' data and research findings (Breen, 2004) indicate that:

- (a) the trend towards convergence in class structure among the countries studied (declining significance of the farm classes, growth in the service class, decline of the manual work, particularly of the unskilled kind) has arisen along with decreasing variation between countries in their rates of overall mobility. Although European countries continue to show differences in their mobility flows, these have become less important. Absolute mobility flows converged because their main determinants did. Changes over

time and variations between countries in absolute mobility flows are driven by variation in the origin and destination distributions (class distribution of men and women) rather than in social fluidity;

- (b) there is a widespread tendency for social fluidity to increase; however this is not a statistically significant trend in every case. It is estimated that rates of fluidity remain rather low and in some cases constant, as an important characteristic of the upper class is the ability it gives its occupants to maintain their position (Erikson and Goldthorpe, 1992);
- (c) rates of social fluidity would change through changes in the transmissibility of resources between generations and in the role played by particular resources (educational, cultural, material, etc.) in the attainment of class position,
- (d) social mobility even as an effect of socioeconomic structural changes may also result in downward mobility, from higher grade to lower grade employment, from higher level to lower level social status;
- (e) class inequality in educational attainment has declined during the reported period (1970s-late 1990s) in France, Sweden and the Netherlands, but not in Ireland or Great Britain⁽⁶⁾. The effect of education on class destination, controlling class origins, has grown weaker over the period in France, Great Britain, Ireland, the Netherlands and Sweden (Table 2);
- (f) variations and different mechanisms through which the increase of social fluidity might be explained are observed in different countries.

Structural change is the main factor determining absolute mobility. However, it may not be less predominant to increase social fluidity. In this case, opportunities to increase the mobility potential of individuals between the class positions of parents and those of their children should be provided. The provision of educational opportunities and resources, cultural capital and income redistribution have a critical role to play.

Policy interventions in particular areas, notably those that affect equality of conditions (ascribed factors) and of opportunity, are likely to influence relative mobility in modern societies.

(6) Not all country analyses provide findings on education.

3. Education ⁽⁷⁾ and social mobility

Whether education comprising VET and educational policy can make a difference to social class inequalities has been widely debated in the sociology of education as well as in social mobility analysis; however, it remains, and is likely to remain, an open question which policies and measures – within a specific socioeconomic and cultural context – are adequate and effective to reverse inequalities rooted out of the education field.

The history of education in European and other western countries during the last century could be summarised as an evolutionary process from aristocratic or elite education systems (open to upper social classes) to democratic (open for all citizens) and meritocratic forms of education. Elite education systems were characterised by high levels of inequality in educational attainment and by rigid selection, whereas contemporary systems are aimed at providing universal access to all levels of education based on merit rather on ascribed factors.

Education has always been and still is subject to national policies and priorities; however, general trends and directions can be detected in the long run following similar patterns of socioeconomic development from agricultural to industrial and post-industrial societies. In the post war period (1950s onward), education was linked with policies aiming at upgrading the social status of disadvantaged groups (social policy) and/or at improving the economic performance of industrial economies (economic policies). Although emphasising different priorities, both policies addressed the need for equal opportunities and improvement of competitiveness of national economies through the expansion of educational systems.

Beside policy goals and objectives, educational sociology and research aimed at analysing the role of education in modern western societies (Bourdieu and Passeron, 1977; Whiteside, 1978; Husen, 1979; Bourdieu, 1984, 1985; Fragoudaki, 1985;

Husen et al., 1992; Bernstein, 1996). Education was considered an essential mechanism that reflected existing social structures and supported reproduction of the hierarchical relations between social classes. The distributional role of education systems along with their ideological function, realised through the whole course of the education process, has been considered critical for the reproduction of certain forms of social stratification. Theoretical approaches that emphasise the critical contribution of education to social reproduction and underline its conservative rather than transformative role perceive education in a rather static way; they underestimate the fact that education systems operate within ever-changing socioeconomic structures and they often neglect the inherent tendency of modern industrial societies to renovate at all levels. As claimed by the theorists of liberal industrialism, technological development calls for continuous change in the structure of the social division of labour. The growing demand for highly qualified personnel favours the expansion of education and training and also the reform of educational institutions to allow access for individuals of all social backgrounds.

In another theoretical perspective (post-war egalitarianism), education was considered a channel through which social transformations could be implemented. Within this context, the egalitarian theories and policies also aimed at ensuring equal opportunities for all citizens and attempted by means of educational reform to redefine social stratification in less discriminating forms. Educational reforms and certain policy measures were expected to create a society of equal opportunities for all in improving their social status and position (education as a instrument of social policy).

Both the macrosocial-reproduction role of education through ideological and distributional means and the micro level social mobility that

(7) VET is particularly treated in Section 4.

is promoted through education could be used to analyse different functions of education systems.

The fact that educational institutions reproduce the fundamental structural elements of socioeconomic systems does not prevent or prohibit mobility of individuals. Education is not a process that ends up with predetermined results; it is affected by endogenous and exogenous factors that, under certain circumstances, induce and enable higher or lower rates of social fluidity.

3.1. Origin, education and destination (OED)

The association of education with social mobility can be described in a simple scheme, often adopted by sociologists, the OED triangle. It is actually a model that aims to illustrate the association between class origin and educational attainment (path A) and, the effect of education on class and occupational destination (path B). Education stands for the major factor that mediates social fluidity, mobility between classes. The A+B association reflects the intermediating role of education between class origin and destination. Path C is the direct origin/destination association that is not mediated by education.

It would be expected that social fluidity (mobility in relative terms) would increase (a) if the class origin/education association weakened, if educational attainment was not affected by class origin effects and equal opportunities were

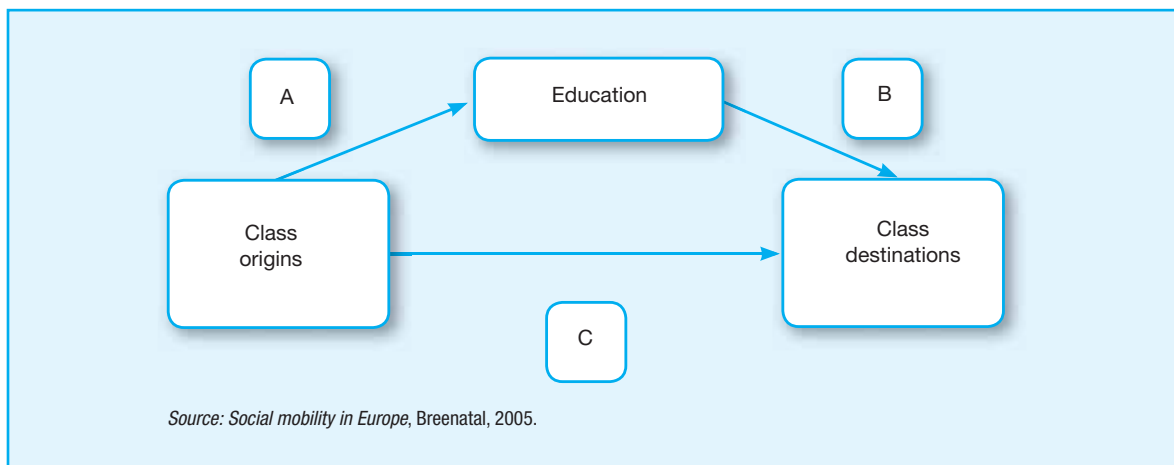
achieved for all, and (b) if the education/class destination association turned out to be stronger, namely if the importance of achievement and educational qualifications (merit) were come to be the most critical factors for labour-market entry and professional development.

As for the direct association between origin and destination, which is mediated by other factors relevant to socioeconomic conditions and transformations (macro level), any significant increase in social fluidity would be expected to result in increased rates of absolute mobility. However, as shown in Section 2, this is not actually the case; the role of education may be less important than is often meant and social fluidity mediated by education 'plays a minor role when compared with the direct partial effects from origin to destination' (Breen and Luijkx, 2004).

While class inequality in educational attainment has declined during the last 30 years of the 20th century in several European countries, the influence of education on class destination, controlling class origins, has grown weaker (Breen and Luijkx, 2004).

Studies and comparative research on the influence of class origin on children's educational achievements have demonstrated that the association between social origin and educational opportunities is still strong, despite educational reforms that have tended to provide equal opportunities for all; it seems that there are other significant factors affecting the origin/destination association apart from education *per se* and they have quite a critical role to play.

Figure 1: The OED triangle – origins, education and destinations



3.2. Social origin and educational attainment

Both orientation through the course of the educational process and school attainment are affected to a considerable extent by social origin factors. Educational achievement operates as a screening criterion to track pupils into general/academic or vocational pathways. The following factors influence success, failure or tracking of pupils (Grelet, 2004):

(a) achievement in primary and secondary education (educational attainment): low grades are usually a strong disadvantage for pupils to continue in general education. However, educational attainment is also subject to social origin, social environment and family status influences, even in cases where they are not the most decisive. Social

origin effects are even more influential when separation between different educational tracks takes place at an early stage (Section 4 about VET and early tracking);

- (b) families' expectations: families/parents who set higher goals for their children are more likely to support their aspirations and encourage their children towards higher levels of education and more prestigious educational tracks. Privileged families have proved to be more able to guide their children and help them stick as long as possible to general educational orientations;
- (c) social/occupational background: different types of expectations may be observed among some socio-occupational categories whose occupational identity is very strong and provide inheritance models, for example farmers, craftsmen;

Table 2: **Inequalities in educational attainment – trends and variations (reporting period: 1970-2000)**

Countries	Research findings	OED association
France	<ul style="list-style-type: none"> class inequality in educational attainment has declined; the impact of education on class destination has become weaker; compositional effect deriving from an interaction between origins, destinations and education. 	<ul style="list-style-type: none"> origin to education association (path A) has weakened; education to class destination association (path B) has weakened; origin to destination association (path C) is weaker among people in higher educational categories.
Sweden	<ul style="list-style-type: none"> class inequality in educational attainment has declined; the impact of education on class destination has become weaker. 	<ul style="list-style-type: none"> origin to education association (path A) has weakened; education to class destination association (path B) has weakened.
Netherlands	<ul style="list-style-type: none"> class inequality in educational attainment has declined; the impact of education on class destination has become weaker. 	<ul style="list-style-type: none"> origin to education (path A) association has weakened; education to class destination (path B) association has weakened.
Ireland, Great Britain	<ul style="list-style-type: none"> no significant changes in class inequalities in educational attainment; the impact of education on class destination has become weaker; the partial (extra-educational) effects of origins on destinations remain constant. 	<ul style="list-style-type: none"> origin to education association (path A) rather constant; education to class destination (path B) association has weakened; origin to destination (path C) association remains constant.
Germany	<ul style="list-style-type: none"> no significant changes in class inequalities in educational attainment; the impact of education on class destination has remained constant. 	<ul style="list-style-type: none"> origin to education association (path A) rather constant; education to class destination (path B) association remains constant.

Source: Breen, 2004.

- (d) attitude towards learning shaped by the family environment: some children are more keen on learning and keep on higher education levels not merely due to abilities but mainly because their family environment is more favourable to educational, cultural and learning activities. Parents' positive attitude towards learning and educational background influence children's orientation towards general or vocational education. Family's educational level has proved to be an important factor of intergenerational inheritance. Educated parents are more likely to help children's upwards mobility;
- (e) gender has been a key parameter of educational orientation. In spite of the fact that, in the past, gender discrimination against females had negatively affected their access to and progression through the education system, nowadays women have proved to have increased access to higher education levels and better educational attainment than their male counterparts. However, it's been detected that gender still affects orientation towards specialisations, particularly in vocational training; certain fields of studies and training specialisations that lead to less attractive and promising occupations are still a female choice, whereas there are still some specialisations considered a male choice.

Given the important influence of family background, the critical question is whether, to what extent and how education can intervene to reverse class inheritance (learning attitude, perceptions) and if this can happen when pupils have entered education, and particularly when they have reached secondary levels, either general or vocational. Is pupils' identity and orientation already established when they have completed compulsory education and, thus, their future social identity (social class/status) is an irreversible situation? Is it more likely to reverse social and cultural inheritance when pupils are still at the primary level of education

when there is still room for intervention? No definite answer is provided by research findings and observation, in spite of the fact that pupils' social backgrounds and personal characteristics are both considered as critical factors ⁽⁸⁾.

On the other hand, there is evidence that alteration of social inheritance effects as well as development of personal characteristics can be achieved. Apart from sociological research, pedagogical theories and research have discussed the reproduction of social inheritance through pedagogy and how education can achieve integration of youngsters into occupational and social positions rather different from that of their parents (Berstein, 1996; 2000; Rose, 2004; Morais, 2002; see also Hoadley, 2006). In other words, social background and cultural influences are critical factors, however not decisive for social mobility. In any case, it is necessary to underline once again that education is likely to provide opportunities, create chances and open ways ahead, but is not the only or even the most important factor to affect social mobility. It would be more accurate to say that education – under certain prerequisites and socioeconomic conditions – is likely to increase the relative mobility opportunities of less privileged classes and improve the absolute rates of social mobility in a given society.

3.2.1. Case studies: social origin/education association ⁽⁹⁾

McIntosh and Munk (2004) examine the role of class origin effects (family background variables) in the determination of educational achievements. Parents' education and occupation along with an indicator of ability – as represented by a set of intelligence tests – explain a modest but significant portion of the variation in children's educational achievements. As for the variation in the probabilities of attaining a certain level of education, research illustrates that family background variables rather than ability as measured by educational tests are

(8) Jean Piaget (1896-1980) claimed that inheritance and social environment are not the major factors affecting children's intellectual development, which is rather a result of biological influences on how we come to know. Lev Vygotsky (1896-1934) looked more to social interaction as the primary source of cognition and behaviour.

(9) This section is mainly based on the following studies: McIntosh and Munk, 2004; Paterson and Iannelli, 2005a and 2005b.

more important. Ability is shown to be more general than that reflected in intelligence tests results as unobservable elements significantly affect variations across educational outcomes. The research was based on a sample of Danish students who were at the age of 14 in 1968 and who participated in the 1968 Danish longitudinal survey of youth. At that time Denmark had already established an advanced welfare state with free and universal access to all levels of schooling; it seems unlikely that students were constrained by the level of availability of educational opportunities and, consequently, it is reasonable to expect that ability and not family background variables would determine educational attainment. The research results have shown that was not actually the case (Table 3).

The research methodology implemented the family capital model comprising family's background variables, for example parents' educational background and qualifications, parents' occupation, social class. The basic idea behind this model is that capital is accumulated and produced during an individual's life, particularly during childhood and is determined by the characteristics of the family in which individuals grow up. The researchers followed the tradition of Blau and Duncan (1978), Bourdieu and Passeron (1977) and Bowles et al. (2001) to specify which variables are the most important in determining educational attainment.

The research outcomes are summarised as follows:

- (a) family background variables are more important in explaining the final level of education attainment than are a set of intelligence test scores administered at age 14; academic ability matters in educational attainment, especially gaining an university degree, but family background in general is much more important when it comes to attaining education;
- (b) women's performance is determined by different variables than those affecting success of men;
- (c) unobservable effects which are often attributed to ability are present even when test scores are included as covariates suggesting that there are other non-intelligence dimensions to ability that matter in educational success.

Further, as far as academic or VET tracks are concerned, parents' school education and father's occupation have a considerable impact on the probability of attaining a vocational education or a college/university degree. Higher household income also matters particularly for males, while females are affected by being in larger families and experiencing household disruptions like the divorce of their parents.

All these types of variables can be seen as measuring different aspects of family capital. Additionally, the researchers conclude that these results are probably due to the unequal accumulation of capital in families, which influences success in the Danish educational system.

The research undertaken by McIntosh and Munk (2004) has shown that education as an intermediating factor is possible to affect considerably the class origin/destination link; however, even where certain measures and policies are promoted and educational reforms (universal access to all levels of education, expansion of compulsory education, increase of school leaving age, etc.) are successful in weakening the link between class origin and educational attainment, there are still several factors (social exclusion, poverty, cultural background, regional inequalities) that influence pupils' academic ability and educational achievements⁽¹⁰⁾.

Other researchers (Bourdieu and Passeron, 1977) have described the influence of social

(10) Following the cultural capital argument, Espring-Andersen argues that low level of cultural capital amongst parents can reduce children's educational achievement through lower levels of cognitive stimulation in the early years; through failure to pass on the cultural codes which are valued in schools; through less parental ability to navigate school systems to the benefit of the child; and through making children more risk-averse in relation to future educational decisions. Universal childcare in Sweden, says Espring-Andersen, counteracts this by providing supplementary socialisation in culturally mixed environments. The importance of income and wealth differences is not ruled out, and may still explain part of the social inheritance effect, but it is the inequalities in cultural endowment between parents, he implies, which is most important and which, therefore, should be the main target of reforms, rather than school systems which may make very little difference to cognitive inequalities once early socialisation has had its effects' (Green et al., 2003).

origin and family background in similar terms, such as parental cultural capital to demonstrate attitudes towards learning, aspirations, goals and expectations induced by parents and parental wealth and income, namely family's economic abilities (Green et al., 2003). Most studies have shown that both factors are relevant and may be important in the early stages of children's life (early socialisation) that partly determines future cognitive performance (and thus educational achievements). However, other inheritance effects in later years of schooling may also be important in determining academic success or failure.

As Boudon (2001) argued with his 'positioning theory', pupils' choices may be strongly affected, apart from factors related to culture and income, by positional factors. 'Middle-class children may have more to lose in purchasing non-academic routes which are likely to lead to downward mobility than working class children for whom choosing a non-academic route will possibly lead to social class maintenance. Regardless of cognitive ability, children from lower social backgrounds will perceive higher positional risks in following academic routes, not only because of fear of failing but also concern that success may entail costs' (Green et al., 2003), such as investment in education, opportunity cost, etc.

Within the same context of social origin/destination association, the study undertaken by Iannelli and Paterson (2005b) aimed to investigate how educational attainment is affected by class origin effects and analyse the role played by education in the process of intergenerational social mobility. Although the researchers were particularly interested in Scotland, the research outcomes are valid for a more general analysis of trends in social mobility and its relation to education. The study is particularly interesting as the education system in Scotland has developed towards more comprehensive patterns of schooling and educational participation is relatively high. Thus, barriers to educational attainment seem to have relatively reduced.

The results have shown that, although educational attainment has increased overall, the association between social origin and educational attainment has not significantly changed over time. The only changes were found

in the case of women and in relation to different types of tertiary qualifications (subdegree and degree) and this was because, as the researchers explained, changes in the non-university sector (expansion and increased proportions of degrees awarded) were likely to have affected women more than men. Women of all classes benefited more from the introduction of comprehensive secondary education and so working-class girls benefited more from the comprehensive reform than working-class boys.

There is no evidence to support that meritocracy is dominant in modern societies; whereas service class employment has grown to embrace around 40 % of the population (in Scotland), it is still not the case that meritocratic recruitment dominates primarily determined by acquired educational credentials. The direct influence of origin has started to become more important again, after a post-war interval during which educational qualifications seemed to be the way for middle-class children toward middle-class jobs. The role of education may be still strong, however it's not getting stronger, and may be falling.

Further to the aforementioned research findings, Paterson and Iannelli (2005b) examine variations among England, Wales and Scotland in the association between social origin and educational attainment. They consider the role that different national policies may have played in affecting these variations. As the two researchers report, the results illustrate that country variations in the association was mostly or entirely due to variations in the overall levels of attainment. Country differences in educational policy have not yielded different changes over time in the association between origin and educational attainment. The analysis has put emphasis on policy measures and reforms implemented in the three education systems particularly through the second half of the last century – rather than on structural changes – as factors affecting relative class inequalities in educational attainment and social mobility rates.

As stated in the paper (Paterson and Iannelli, 2005b, p. 2), 'there has been a general tendency to conclude from research into educational expansion in Europe and North America in the past half century that, in most places and

Table 3: **Social origin and educational attainment – case studies**

Countries	Research approach	Results
Denmark	Educational attainment in association with family capital comprising family's background variables: parents' educational background and qualifications, parents' occupation and social class (Mackintosh and Munk, 2004).	<ul style="list-style-type: none"> • family background variables are more important in explaining the final level of education attainment than a set of intelligence test scores; academic ability matters in educational attainment, especially gaining an university degree, but family background in general is much more important when it comes to attaining education; • unobservable effects, which are often attributed to ability, are present even when test scores are included as covariates suggesting that there are other non-intelligence dimensions to ability that matter in educational success; • women's performance is determined by different variables than those affecting success of men. Higher household income matters particularly for males, while females are affected by being in larger families and experiencing household disruptions like the divorce of their parents; • parents' school education and father's occupation have a considerable impact on the probability of attaining a vocational education or a college/university degree; • even if certain policies are successful in weakening the link between class origin and educational attainment, there are still several factors (e.g. social exclusion, poverty, cultural background, regional inequalities) that influence the pupils' academic ability and educational achievements.
Scotland	Educational attainment in association with class origin influences; the role played by education in the process of intergenerational social mobility (Iannelli and Paterson, 2005b).	<ul style="list-style-type: none"> • although educational attainment has increased overall, the association between social origin and educational attainment has not significantly changed over time; • changes were detected in the case of women, as expansion of the non-university sector (i.e. expansion and increased proportions of degrees awarded) were likely to have affected women more than men; • women of all classes benefited more from the introduction of comprehensive secondary education; working-class girls benefited more from the comprehensive reform than working-class boys; • the direct influence of origin has started to become more important again, after a post-war interval during which educational qualifications seemed to be the way for middle-class children toward middle-class jobs.
England, Wales and Scotland	Comparative study: variations in the association between social origin and educational attainment; the role that different national policies may have played in affecting these variations (Paterson and Iannelli, 2005b).	<ul style="list-style-type: none"> • country variations in the association were mostly or entirely due to variations in the overall levels of attainment; • country differences in educational policy have not yielded different changes over time in the association between origin and educational attainment; • education cannot be used, on its own, to eliminate social inequalities and counteract decisive factors such as effective social networks, self-confident aspirations and wealth; • other factors such as family capital appear highly influential in defining the origin-destination association; • reductions in relative educational inequalities have come about because of much wider programmes of social democratic reform.
France	The orientation process towards vocational tracks and specific occupations: major influential factors. The analysis mainly concentrated on those pupils who had followed a vocational track (Grelet, 2004).	<ul style="list-style-type: none"> • orientation towards a vocational track is a complex process influenced by several factors. Educational attainment has a decisive role to play, but it does not completely account for social discrimination; • families' aspirations, determined by the parental occupational and educational background, may reinforce or weaken the effect of social origin; • evidence of strong tendencies governing the allocation of specialisations and occupational positions of young people depending on their social and geographical origin; • the role of gender is significant, but rather weak: if female students are less likely to enter vocational tracks, it is mostly due to their better level of achievement.

Sources: McIntosh and Munk, 2004; Paterson and Iannelli, 2005a and 2005b; Grelet, 2004.

most times, educational policy has contributed relatively little, if anything, to reducing social inequalities' Paterson and Iannelli (2005). Reductions in relative educational inequalities have come about because of much wider programmes of social democratic reform, notably in Scandinavian countries. Raising the overall level of participation and attainment is also a policy mechanism often used by policy-makers to reduce education inequalities, when they are not able to engage in large-scale social reform. Although the aim of educational policy has often been to change the association between class origin and attainment, the researchers assume that in a general sense this is not directly under the influence of policy-makers.

The research findings, although not definitive, tend to confirm that education cannot be used, on its own, to eliminate social inequalities and counteract decisive factors such as effective social networks, self-confident aspirations and wealth. Although the class origin/education association could possibly be affected by certain policies, there are other factors such as family capital that appear highly influential in defining the origin/destination association. If the question is how to reduce social inheritance, we could suppose that a set of policy measures and objectives should be designed rather than fragmented changes in education systems alone.

As discussed briefly up till now, there are many factors which contribute to the reproduction of social inequalities and particularities through education systems inhibiting, thus, both upwards and downwards social mobility. Social origin, family's social background and position, cultural capital and income, strong occupational roots and geographical limitations. However, social inequalities and lack of equal opportunities originate from individuals' socioeconomic environment and not from education per se. There is no doubt that the

education system is an essential factor which, at macro level, contributes to reproduction of the socioeconomic system and, consequently, of the social stratification by ideological and distributional means. It is also obvious that any attempt to discuss the social role of education and approach the socioeconomic environment from a static point of view would inevitably lead to dogmatic conclusions far from evolving reality in contemporary western societies. Neither socioeconomic systems, nor education systems are static and polarised; they are rather complicated and dynamic, flexible and open to internal adaptation and changes. Despite social mobility being influenced by socioeconomic and cultural backgrounds rather than meritocratic factors, education may still contribute to social fluidity, improving relative chances of mobility across class and occupational structures. The programme for international student assessment (PISA 2000 and 2003) research findings have shown that although social background factors exert a powerful influence on student performance, education systems have an essential role to play in compensating inequalities and improve the social mobility potential of less advantaged students (OECD, 2004). The extent to which such mobility (fluidity) occurs is subject to internal (education policies) and external (structural social changes, production system and labour market developments, etc.) interrelated parameters and variables.

The VET sector has a particular role to play in mediating social stratification and in providing opportunities for mobility. We have to underline that VET and its relation to social stratification and mobility issues should be discussed in a dynamic and evolutionary context. VET has been put through various reforms and transformations; moreover, VET systems have undergone various implementations at national level and different traditions and learning patrimonies have determined their contemporary roles.

4. Vocational education and training: social stratification and mobility

There are several approaches to vocational education and various implementations of VET ⁽¹¹⁾ systems, which reflect the national environment, socioeconomic particularities, the institutional role of education and policy goals/priorities in each country. Although VET systems are different in their structures, methods and institutional arrangements, nowadays, they seem to converge in defining common objectives, targets and priorities to improve the quality of human capital and reinforce the competitiveness of the European economy at global level (see the Lisbon strategy 2010 and the process of enhanced cooperation in VET initiated in Copenhagen in 2002) ⁽¹²⁾.

Within the context of education systems, traditionally vocational/technical education and training is meant to develop knowledge and practical skills, namely skills which lead to occupations concerned with the implementation/execution of practical and technical tasks. The norms and models of the early industrial era related VET (mainly in the form of apprenticeship) with manual labour and occupations in the manufacturing sector (labour-intensive occupations), despite the population of unskilled manual workers being then quite large.

VET prepares learners for careers or professions that are traditionally non-academic and directly related to a specific trade, occupation or vocation in which the learner participates. It is sometimes referred to as technical education, as the learner directly specialises in a particular technique of using technology.

VET is usually opposed to education in a broader scientific field, characteristic of tertiary education, which concentrates on theory and abstract conceptual knowledge. In this

contribution, we will distinguish VET into (a) vocational education at upper secondary level that in many EU countries provides access to skilled jobs and tertiary education (even at university level) in many countries and (b) vocational training which corresponds to more narrow qualification pathways providing specific job-related training.

To examine VET in the context of social mobility issues and particularly how VET might affect social mobility – notably the relative chances of occupational achievement for children of diverse origins – we have to consider the different opportunities and perspectives that both vocational education and vocational training are likely to offer youngsters in accessing the labour market.

Vocational education and vocational training, though complementary pathways within the wider field of vocational/technical education, may be distinct in their learning objectives, curricula and methods. Vocational education provides more general knowledge and skills and is oriented towards broad occupational fields, whereas vocational training (short and long term) is usually related to specific knowledge and skills addressing the needs and characteristics of specific jobs or narrow occupational fields. Besides, vocational education mostly takes place in schools whereas vocational training in companies in the form of apprenticeship; the dual system as implemented, for example, in Germany comprises both general knowledge and job-specific skills acquisition.

The general nature and contents of vocational education is possible to influence future progression in the labour market (job placement) in a much different way than the specific job-related skill provision of vocational training. Recent studies have shown that academic

(11) Vocational education is the 'education, the objective of which is to prepare the student/pupil for a particular vocation or type of vocation and the content of which is planned or designed to achieve that purpose' (Cedefop, 1996, p. 55).

(12) Vocational training is the 'activity or programme of activities designed to teach the skills and knowledge required for particular kinds of work' (Cedefop, 1996, p. 52).

education and general vocational tracks are more likely to achieve good job placement and career perspectives, whereas vocational training is less promising (Wolf, 2002; Svetlik, 2004; Kanellopoulos, 2006).

Going back to the OED triangle (Section 3.1) exemplifying the class origin effect on education and the education/destination association, we will examine how VET is related to social origin and, further, how VET is likely to affect the social destination, namely how VET mediates social mobility and how VET intervenes to provide opportunities for better prospects in the labour market.

4.1. General/vocational: a hierarchical relation

The distinction between general education and VET, which is reflected in the dichotomic structure of secondary school education⁽¹³⁾ (general/vocational) and in distinct educational routes, has derived from various factors – as aforementioned – implicitly and explicitly related to particular socioeconomic conditions and the distributional role of education systems. In other words general/vocational separation is a projection of the distinction and, moreover, the hierarchical relation between theory and practice. The origin of this distinction is to be found in the foundations of socioeconomic models and in prevailing hierarchical patterns of labour division in industrial and pre-industrial societies.

This rigid distinction between theory and practice can explain in a schematic way the widespread perception that theoretical/general education is superior to vocational/technical education. Based on this hierarchical structure, the dual or selective, as widely known, education system in its pure form – that used to be the dominant educational paradigm for a long time – has contributed to the reproduction of an occupational hierarchy, namely occupations of higher and lower status. However, the basic distributional function of education systems is implemented through distinctive educational

pathways and selection that takes place mostly at the upper secondary level of education (also in lower secondary education).

The historical evolution of industrial societies and the transition to post-industrial socioeconomic models has initiated significant changes in VET systems. The range of occupations has considerably changed, while various intermediate occupations have emerged between manual and intellectual jobs. At the same time, the scale of occupations, ranging from low-level, low-skilled manual workers to high-level managers and intellectual workers, has expanded to include several intermediate, middle-class positions that require general knowledge as well as practical/technical skills affecting, consequently, traditional class typologies and rigid demarcations in class stratification.

The previous section examined the role of education as an intermediating factor between class origin and destination. It was noted that educational attainment is influenced by social inheritance effects; relative chances for social mobility are increased as long as the origin/education association becomes weaker and class inheritance effects diminish. Although VET is part of the education system in its broader purpose, it should also be analysed in its particularity.

VET being a separate educational pathway has often been conceived (de facto) as a choice or educational orientation that leads pupils towards lower and intermediate destinations in the occupational structure. ‘The attractiveness of vocational education depends to a large extent on its social standing and the opportunities it offers in the labour market in terms of employment, pay, career prospects and actual jobs’ (Cedefop, Lasonen and Manning, 2001). Nevertheless, it should not be neglected that contemporary VET systems may also lead to higher education routes and, thus, high-level occupational positions.

Selective education systems tend to generate roughly speaking two different groups of students: those who come through secondary schooling in general education track, where they can expect to reach higher education levels

(13) There is actually a grading of schooling pathways, which varies depending on the national secondary education system and a lot of heterogeneity within each track.

(higher education, academic or technological), and those who are oriented towards the vocational track, which grants them faster entry into the labour market. Does this allocation of pupils among different educational routes reflect the strong influence of their social background rather than their preferences and capacities? Does the social and occupational background of their parents induce their selection of educational and occupational orientation? Is the origin effect stronger in VET than in academic educational tracks?

If it is accepted that VET mainly attracts pupils from less advantaged classes with low and intermediate occupational position, it is thus more likely that VET tracks reproduce rather than reduce pre-existing social inequalities and discriminations.

Grelet (2004), in her research paper on *Vocational education, training specialisation and social*

reproduction, examines the orientation process towards vocational tracks and more precisely towards a specific occupation, which evidently impacts the future occupational position and she concludes that 'theses mechanisms are at the heart of social reproduction and social mobility'. The research used panel data of pupils enrolled in secondary level during 1995-96 collected by the French Ministry of Education. The generation 98 longitudinal school leavers' survey (conducted by Céreq⁽¹⁴⁾) data were also used and analysed to support the research work (Box 3). The analysis mainly concentrated on those pupils who had followed a vocational track. In France, 38 % of all secondary level students are manual workers' children; this percentage rises to 54 % in the vocational track (vocational secondary schools), while the remaining 46 % originate from other socio-occupational categories (source: Ministry of Education, 2002-03).

Box 3: National datasets

French Ministry of Education: panel data of pupils enrolled in secondary education during 1995-96

Aim: data gathering from the beginning of secondary cycle, to track the progression of pupils throughout the secondary level and feed research and studies on relevant issues.

Variables collected:

- (a) type of school (year after year);
- (b) family's background (occupation, level of education, etc.);
- (c) parents' aspirations and expectations from their children's educational attainment;
- (d) educational orientation and track (general/vocational or other internal specialisation);
- (e) future educational and occupational plans (information collected by questionnaire in Spring 2002).

The study of Grelet (2004) was based on 13 120 questionnaires filled in by pupils who had followed vocational tracks.

Generation 98 longitudinal school leavers' survey

Description: Generation 98, 750 000 pupils or apprentices who left initial education at all levels and in all training specialisations.

Method: 55 000 interviews with youngsters belonging to Generation 98. The study focused on those who completed

vocational high school or apprenticeship at the second level of education and were employed at the time of the survey (2001).

Interviewees were asked to provide information about their schooling pathway and describe their successive jobs and employers. The analysis of results aimed at depicting the links, which relate training specialisation to social and geographical origins; additionally, at illustrating the links of educational, social, environmental backgrounds with occupational destination (job placement).

Results (in brief) regarding mobility between parental occupational status and successor's occupational destination:

- (a) strong association between specialisation and occupational status of father; farm owners' children appear to be the most engaged in an inheritance process and mostly attracted by their fathers' occupational activity;
- (b) father's occupation affects children's vocational specialisation, which leads to a specific occupational destination;
- (c) the survey reveals an existing localised mechanism of social reproduction, however it only shows trends and not absolute determinism.

The future analysis of panel data 95 concerning occupational careers is expected to provide a clear picture of the interrelation between educational tracks and occupational positions illustrating the influence of VET on social mobility.

(14) Céreq is a public body under the aegis of the Ministry of National Education, High Education and Research and the Ministry of Employment, Works and Social Cohesion. As a public centre of expertise at the service of key players in training and employment, Céreq is involved both at once in the production of statistics, research and the accompaniment of actions. It provides advice and proposals intended to clarify choices in training policy at regional, national or international levels.

The study illustrates that in France schooling performances are not the only sorting criterion for the allocation of students in the vocational track, and that social stratification plays a role in this process, reinforced by spatial stratification. Orientation towards a vocational track is a complex process influenced by several factors. Educational attainment has a decisive role to play, but it does not completely account for social discrimination. Families' aspirations, determined by the parental occupational and educational background, may reinforce or weaken the effect of social origin. As for the choice of a specific occupational field, social reproduction is evident in definite socioeconomic spaces as documented by the association between youngsters' background and destination. However, as underlined, this strong association 'does not prove determinism, it only shows evidence of strong tendencies governing the allocation of specialisations and occupational positions of young people depending on their social and geographical origin' (Grelet, 2004, p. 11). The role of gender is significant, but rather weak: if female students are less likely to enter vocational tracks, it is mostly due to their better level of achievement.

The findings have also shown that a significant part of respondents would have changed their educational track – towards tertiary occupations – and field of specialisation, if they had the chance to redefine their orientation. It is reported that their choice was dictated by low-level achievements (test scores) having been directed unwillingly towards a specialisation they did not decide on.

From the latter, one could conclude that early or premature selection is more open to social inheritance effects, dictated either by direct parental influence or by low educational achievements that may also be subject to family background variables (see previous section).

4.2. Comprehensive versus selective

Traditional strategies to reduce social inheritance effects on education have promoted policies aiming to avoid early tracking and promote

comprehensive schooling against selection. The comprehensive reforms proved to have weak and strong points; moreover, they have illustrated the limits of educational policies to handle inequalities that find their origins outside the education system.

4.2.1. The British comprehensive reform

British school education was based for a long time on selective systems and curricula. The tripartite system could be an example to demonstrate how social segregation may be reproduced through selective education systems, through a rigid segregation between general and vocational/technical tracks.

The tripartite system, widely known as the 'grammar school system', was the structure by which Britain's secondary education was organised between 1944 and 1976. The post-war education system was based on a selective approach which entailed distinct educational orientations. Secondary schools were divided into three categories, grammar schools, technical schools and modern schools. Selection took place by means of a competitive examination, the 11+ examination at the age of 11+, after completion of primary education.

Grammar schools had a strong academic reputation and were also quite selective (up to 10 % of pupils' population) preparing for tertiary education. Grammar schools often performed well in ranking tables, and there was a high level of competition for places.

Technical schools were meant to teach mechanical, scientific and engineering skills to serve industry and science, however only a few were finally operated.

Modern schools were supposed to provide technical skills for specific crafts and trades. They provided for the majority of 11+ pupils leaving at the minimum school-leaving age of 15. Modern schools offered basic education preparing pupils for relatively low-level manual jobs. In practice the secondary modern school came to be seen as the school for failures. Those who had failed their 11+ and were thought unsuitable for either an academic curriculum or a technical one were sent to secondary modern,

where they received training in simple, practical skills before advancing to low-skilled jobs.

Due to the strong association between pupils' class origin and educational achievements, modern schools attracted pupils who originated from less favoured and unprivileged social groups having, thus, less possibilities to succeed in 11+ examinations.

The tripartite system has been criticised as it contributed to the reproduction of class inequalities in educational attainment. Heath and Jacobs (1999, CREST⁽¹⁵⁾) analyse the introduction of comprehensive schooling (1960) and examine whether it succeeded to reduce class inequalities, provide equal opportunities and achieve better educational achievements in comparison with the tripartite era⁽¹⁶⁾.

To examine the impact of comprehensive reform the two researchers used the British household panel survey (BHPS) data. BHPS is a longitudinal survey of private households in Britain. More than 10 000 adult (16+) interviews were used out of a representative sample of over 5 000 households (initial wave in 1991) and the aim was to re-interview them annually. The BHPS contained information on the type of school the respondent attended, the social/occupational position of their father (or mother) and their highest educational qualification.

The research and data analysis was based on the definition of seven birth cohorts: 1900-19, 1920-29, 1930-39, 1940-49, 1950-59, 1960-69, 1970-79 each one educated in certain education systems. The first two birth cohorts received all their education in a system that resembled the post-war tripartite arrangements. The 1930-39 birth cohort was a transitional one, while the 1940-49 cohort was educated in the tripartite system during the post-war years. The 1950-59 cohort was again a transitional one, while the two latter birth cohorts were educated under the comprehensive system.

4.2.1.1. *Growth in qualifications*

The research results underline that during the 20th century the proportion of formal educational qualifications has dramatically risen in Britain, as in other western European countries. In the earliest birth cohort (1900-19) 80 % of the male and approximately 90 % of the female population had none of these formal educational credentials (school or university qualifications), whereas in the most recent cohort (1970-79) the percentage of unqualified had been decreased for both men and women to approximately 10 %. It is noted that the most significant absolute increase concerned the 'acquisition of the intermediate qualifications such as O level, where women made rather

Table 4: % of men obtaining O level or above at different types of schools

School type	1900-19	1920-29	1930-39	1940-49	1950-59	1960-69	1970-79
Private	53	72	73	88	91	82	93
Grammar	70	72	82	89	93	85	84
Comprehensive	-	-	-	46	66	75	80
Elementary/secondary modern	10	16	21	36	49	57	70
Technical and other	11	21	33	68	70	43	59
All	20	27	37	53	65	71	78

Source: Heath and Jacobs, 1999.

(15) The Centre for Research into Elections and Social Trends is an ESRC Research Centre based jointly at the National Centre for Social Research and the Department of Sociology, University of Oxford.

(16) About reforms in the British education system, see also Preston and Green in this volume.

Table 5: % of women obtaining O level or above at different types of schools

School type	1900-19	1920-29	1930-39	1940-49	1950-59	1960-69	1970-79
Private	30	49	53	79	83	93	100
Grammar	57	68	79	91	89	85	92
Comprehensive	-	-	-	38	63	73	80
Elementary/secondary modern	6	10	13	31	39	62	74
Technical and other	7	10	27	47	59	61	69
All	13	20	31	50	59	72	80

Source: Heath and Jacobs, 1999.

larger gains than men' (Heath and Jacobs, 1999, p. 12). The growth of qualifications is the most notable change during the 20th century; however, as the researchers have underlined, the rise had started before the comprehensive reform and, consequently, it is doubtful if and how much role has the transformation of the selective system played in that notable growth of educational qualifications.

During the second part of the period covered by the youngest cohorts (1940-79), the association between school type and examination success became much weaker, namely comprehensive and secondary modern schools had been catching up with selective ones, whilst secondary modern schools were making similar absolute progress in educational achievements to comprehensive ones. In the youngest cohort, the differences in learning opportunities, for example in the chances of acquiring at least O level, had narrowed very substantially. Heath and Jacobs conclude that these results and variations 'were largely due to autonomous social processes and would have occurred even in the absence of comprehensive reorganisation'. Similar results concerning educational expansion and the growth of qualifications occurred in Northern Ireland as well, where comprehensive reform did not take place. The introduction of the certificate of secondary education, which catered for the 'less academic members of the age group' and gave them the chance to acquire 'a qualification with real value in the labour market' and the raising of the school-leaving age (up to 16) are considered

more influential changes than the comprehensive reform *per se*. However, the establishment of comprehensive schools did provide access to higher qualifications for pupils who had been excluded under the selective school system contributing, thus, to alteration of the social composition of the secondary education level (Heath and Jacobs, 1999, p. 15).

4.2.1.2. *Class inequalities in education – relative mobility*

The tripartite system has been often criticised to favour children from middle and upper class origin in accessing grammar schools. Since access to grammar school and consequently to higher education was significantly influenced by social factors such as origin, family's cultural and educational background, parents' occupational position, type of primary school, neighbourhood or geographical location, etc., pupils under the tripartite system were allocated into different types of schools according to their class origin; in other words, under the tripartite system the association between class origin and education was particularly strong.

To explore questions of social background in relation to the comprehensive reform, the authors have adopted a short version of the EGP class schema (Section 1.1.1).

The classification included three broad categories:

- (a) the salaried, namely relatively secure and advantage positions in the professions and management;

Table 6: % of men from salaried origins at the different types of school

School type	1900-19	1920-29	1930-39	1940-49	1950-59	1960-69	1970-79
Private	47	48	33	56	62	66	71
Grammar	32	31	25	31	36	37	64
Comprehensive	-	-	-	9	24	29	31
Elementary/secondary modern	8	7	6	10	18	19	25
Technical and other	5	4	18	20	20	36	19
All	13	12	13	17	27	30	25

Source: Heath and Jacobs, 1999.

(b) the intermediate classes, namely routine white collar workers, petty bourgeoisie, foremen and technicians;

(c) the working class, manual workers in industry, services and agriculture.

To investigate class inequalities in education, under the tripartite system and after the comprehensive reorganisation, they correlated the different types of schools and the representation of the three broad categories in each type across the birth cohorts.

As illustrated in the tables above private and grammar schools have a much higher percentage of pupils coming from the salaried class, whereas pupils from salaried have been underrepresented at elementary and secondary modern schools; this trend has slightly changed across the birth cohorts.

It is noteworthy that the social composition of comprehensive schools at the early stage (1940-49 cohort) was disproportionate as a low percentage (9 % of men and 15 % of women) of pupils originating from the salaried compared with the overall percentage of 19 % (men and women) for that cohort in general. In subsequent stages, when the comprehensive reorganisation matured, the figures show a balanced representation of salaried in comprehensives as a whole (31 % of men and 35 % of women compared to the overall percentage of 30 % men and women for the 1970-79 cohort in general) meaning that they had achieved their main goal of educating a representative cross-section of the population. However, as the researchers underline, 'this does not mean that individual comprehensive

Table 7: % of women from salaried origins at the different types of school

School type	1900-19	1920-29	1930-39	1940-49	1950-59	1960-69	1970-79
Private	48	61	44	58	61	70	71
Grammar	25	28	26	34	41	45	49
Comprehensive	-	-	-	15	24	27	35
Elementary/secondary modern	5	7	6	11	12	18	19
Technical and other	15	12	13	19	46	38	43
All	12	13	14	21	25	29	34

Source: Heath and Jacobs, 1999.

schools would have educated a representative cross-section since there is very considerable residential and hence social selection in access to individual schools' (Heath and Jacobs, 1999, p. 19). Moreover, the results have shown that there has been little change across the birth cohorts in the association between class origin and school type.

Although the relationship between type of school and success in achieving at least O level has remarkably weakened across the birth cohorts, the distribution of opportunities among classes in accessing the different types of schools have not significantly changed over the period; it has remained rather constant.

What about the relationship between class origin and success in achieving intermediate qualifications? The term relative class inequality was adopted to estimate the degree of opportunities that different classes achieve in their competition to secure educational qualifications. Odds ratios comparing the relative success (in obtaining intermediate qualifications) of children from salaried and working class origin were considered to address the issue. While the absolute gap between working-class and salaried pupils in educational achievements (intermediate qualifications) have fallen – the percentage of working class pupils in achieving intermediate qualifications across the birth cohorts has increased – it is questionable if class inequalities in relative terms have declined; the research findings do not adequately support such a conclusion.

It was expected that comprehensive reform and abolition of early selection would make the terms of competition in securing educational qualifications more favourable to the lower classes than under the selective system. However, relative inequalities seem to increase within the different types of schools meaning that comprehensive reform did not reduce inequalities in relative educational opportunities. As far as absolute class inequalities in achieving educational credentials are concerned, 'expansion rather than comprehensive reorganisation is likely to be the generative process that lies behind the narrowing of the absolute gaps between the classes' (Heath and Jacobs, 1999, p. 20).

As reported in the concluding section, the main changes in educational outcomes have been considerable growth in the acquisition of some kind of qualifications across the 20th century, the convergence of school types in the access they provide to educational qualifications and the narrowing of gender differences. Class inequalities have weakened in absolute terms, whereas relative class inequalities have shown little change, despite a weakening of relative class inequalities among men.

Comprehensive reform seems to have played little role in the growth of educational credentials and in the decline of differences among school types. These changes are considered to be rather the result of autonomous social processes – and not of educational reforms – that would have happened even if the comprehensive reform had not been introduced.

The expansion of education, the raising of the school leaving age (at 16) and introduction of a lower level examination (certificate of secondary education) have been much more influential than the establishment of comprehensive schools; these changes removed the structural constraints which under the selective system had restrained pupils at secondary modern schools.

The comprehensive reform has shifted the focus from age 11 to age 16 and competition for success at O level and above (intermediate qualifications) moving thus the locus of competition that now takes place within secondary schools rather than in access to them. Class differences and consequently relative opportunities within the different types of schools have tended to increase.

Following the conclusions drawn out of these research results, we could possibly judge that even if the comprehensive reform per se did not significantly affect relative class inequalities, certain policy measures and interventions, definitely affected to some extent and at various levels educational structures; they particularly affected the association between class origin and education in absolute terms. The shift of school leaving age and the abolition of early age selection have obviously provided pupils from lower classes more opportunities for learning and more chances to access educational tracks reducing class inheritance effects.

Early selection and rigid segregation under the selective system favoured class inheritance since little opportunities and alternative options were offered to pupils. Each type of school pre-described and predicted a certain social status for its attendee.

Comprehensive schooling is usually criticised by defenders of selective education as sacrificing quality standards to an egalitarian levelling-down, whereas, retaining selection would have meant higher standards and better achievements. On the other side, supporters of the comprehensive reform emphasise the egalitarian aspects within a more inclusive educational agenda as well as improvement of educational achievements.

PISA results have demonstrated that in fact tracking into separate educational routes does not improve efficiency and pupils' performance (for the skills tested); however it does reduce equity. Pupils in comprehensive education systems (Finland) perform better than those in selective systems (Germany), namely the average performance is higher and the distribution of results is narrower.

Box 4: **Comprehensive secondary education – building on success**

Since comprehensive education was introduced, barriers to achievement for many young people have been removed.

Annual government statistics of attainment, examination results, and participation in further education are clear evidence of 'levelling-up' over the last 25 years.

In areas where there are selective systems evidence indicates that this results in an overall depression of achievement levels.

In some areas of England it is reasonable to regard comprehensive schooling not as a 'failed experiment' but as an experiment that has not yet been tried.

Social class remains a powerful predictor of life chances and a good social mix contributes to a school's performance.

Policies, which favour some categories of school, and encourage further school choice of pupils and parents, could perpetuate outmoded inequalities in new guises.

Assertions that selection works rely heavily on seeing only the winners in that sifting process. A modern economy relies on a learning society, which is rooted in a much more ambitious and inclusive strategy.

Source: Briefing paper published and distributed by the Campaign for State Education, London, 2001.

The merits and difficulties of the system have proved a controversial subject, and continue to divide public opinion in the UK. The tripartite system was formally abolished in 1976, giving way to the current comprehensive system, although elements of it persist in several counties.

4.2.2. **German apprenticeship training**

Secondary education in Germany is also based on early selection and separate educational pathways, however much different in its structure and operation. VET is mainly apprenticeship, dual-based training (Wolf, 2002); it combines two separate elements: training in companies funded by the employer and general vocational education delivered in public vocational schools. All apprentices participate in both parts of the dual system, as widely known. The majority of young pupils (approximately two thirds of a given cohort) follow the apprenticeship track, though increasing numbers combine the vocational track with higher education (university or polytechnic). Apprentices, after spending approximately three years with an employer, achieve the skilled worker status awarded by local chambers of commerce or other trades. The critical partners in the German apprenticeship system are first employers associations (chambers); second the unions and company-based work councils. Chambers are officially responsible for vocational training activities in their member companies including running final examinations. The dual system provides highly skilled and well-educated workers as well as a reliable and effective system for helping the transition from school to work placement.

Although the school education system is organised on a selective basis and separate educational routes (academic, general vocational and apprenticeship), it is flexible enough to allow horizontal transfer across educational routes to some degree and reverse the negative implications of early selection. The German education training system may be considered of high quality and effective in providing vocational qualifications harmonised with the needs of the labour market; on the other hand, it demonstrates high degrees of social inequalities and strong association of education with social origin.

The recent OECD article by Schleicher (2006) highlights the issue of social inequality in education as a burden that has prevented efficiency in education systems in Europe; in particular, it describes that overall variation in student performance and performance differences between schools tend to be greater in countries with rigid selection practices at an early age between types of programme and school. International comparisons also show (the author refers to the OECD's PISA study) that the effects of social clustering are larger in school systems with differentiated types of schools than in systems in which the curriculum does not vary significantly; the 'PISA study reveals that social background plays a larger role in determining a student's performance in countries such as Germany, France and Italy than in the US.' (ibid., p. 12).

As noted by the author, the German school system divides kids at the age of 11-12 into different tracks⁽¹⁷⁾. In the end, German children with parents in white-collar, high-skilled occupations have a four-fold higher chance of enrolling in tracks leading to university than those with parents from blue-collar or low-skilled occupations, even if students display the same level of educational performance at an early age. Educational reforms have been successful on many fronts, but they have shied away from tackling the inequality built into the German educational system.

The comparative study on *Social mobility in Europe* (Breen, 2004) also illustrated that in west Germany class inequality in education has been particularly high though decreasing. The analysis emphasised the particular association between education and labour markets that is directly mediated by employers' unions. The system of vocational training characterised by strong education-labour market links and by marked horizontal differentiation in training specialisation is considered one of the

institutional particularities responsible for high levels of immobility in west Germany.

'Germany is one of the countries with the strongest links between educational attainment and class allocation, mostly due to the strong presence of occupational labour markets and their institutional links with credentials⁽¹⁸⁾ provided through the system of general education and vocational training. These strong credentialist job allocation principles have not changed markedly so far. In such a context, it is particularly likely that a decline in class inequality in education will lead to higher social fluidity. But since other elements of class immobility have also been high in Germany and have not been reduced, it would not surprise us if west Germany still came out as a society which, compared to others, is characterised by quite strong immobility' (Muller and Pollak, 2004).

Nevertheless, there are several reasons, apart from education and apprenticeship training, which influence the relatively low rates of social mobility and which are deeply rooted in historical evolution, national traditions and ideology.

By comparison, in France, where social origin plays a decisive role in determining students' performance as revealed by OECD's PISA findings, the school system was progressively reshaped (end of the 1950s to the mid-1970s), changing from a highly-tracked system to a more unified and comprehensive secondary school (Prost, 1992). The gradual shift towards more unified models increased access to education for children of diverse social backgrounds and promoted equality of educational opportunities. But, the impact on democratisation and social fluidity mediated by education has been rather limited. Trends in inequality of social opportunity might be related to trends in inequality of condition; even if more educational opportunities are provided this does not necessarily result in increase of social fluidity.

(17) In Germany's traditional school system, pupils at the age of 11-12 are divided into different educational tracks: grammar schools qualifying for universities, intermediate and principal schools qualifying non-university tracks including vocational training. However, there are also considerable numbers of comprehensive schools without such an early tracking.

(18) Although the detected class immobility in Germany may be attributed to some extent to the 'strong credentialist job allocation principles', the strong association between education and the occupational labour market ease transition from school to work and thus entry into the labour market for students graduating from VET pathways; in this respect, the situation (job placement) in Germany is relatively better than in other countries. See Cedefop, Descy and Tessaring (2001b, p. 335-351) and Cedefop (2001).

4.2.3. The comprehensive experiment in Greece

In Greece, the comprehensive school experiment was influenced by a social egalitarian attitude within the broader context of a welfare state; it was mainly aimed to provide equal opportunities for learning beyond social discrimination and promote the standing and quality of vocational education considered to be low-level schooling⁽¹⁹⁾. The Greek comprehensive school (*Ενιαίο Πολυκλαδικό Λύκειο* – EPL) was first established in 1984-85 and within the broad context of the debate on comprehensive versus selective systems. Its goal was to counterbalance social inequalities rooted out of education and affected by unequally distributed cultural capital, income, etc.

As stated in the official documents of the Greek Ministry of Education (YPEPTH, 1987), the comprehensive (or integrated) school had the following objectives to fulfil:

- (a) to attribute a broader content to the term 'general education'; to modernise and link general with vocational education and expert knowledge;
- (b) to offer modern scientific and technological knowledge, general and specified, and above all, skills and knowledge that would match the needs of social and economic development in the country;
- (c) at the same time, it should be in a position to adapt to continuous changes inflicted by radical technological development over conditions of work and forms of employment;
- (d) finally, to offer all young people, without any discrimination, equal opportunities for education, development of skills and competences, promotion of talents, interests and skills.

In 1984-85, when the comprehensive school first operated, 64 % of students selected the general education tracks leading to higher education institutes (AEI, ATEI)⁽²⁰⁾, whereas 36 % selected the vocational education field. EPL offered students the option to follow higher education studies (academic or technological institutes) or vocational education making their choice among the different streams (combination of compulsory and optional subjects). EPL was successful⁽²¹⁾ in guiding pupils towards occupational fields and increased the value of vocational options. Ten years after the establishment of EPL, a growing number of pupils selected occupational fields and the percentage of pupils opting for general and vocational education was balanced due to the uprising quality and prestige of vocational streams within the framework of EPL.

Even at comprehensive school, pupils selected vocational streams, which were related to occupational careers mainly in the service sector, non-manual skilled and/or independent occupations. In spite of the fact that Greek comprehensive school was successful in terms of attracting more pupils towards occupational fields and of improving its status, it was finally abolished (1997) to be replaced again by distinct types of schools. The major reasons that led EPL from acceptance to abolition were: limited political support, inadequate and insufficient training of teachers, high cost of running, lack of adequate funding (Patiniotis, 2005).

Summarising the comprehensive experiment in Greece and discussing in general the status of VET, one could assume that inconsistencies and discontinuities in educational policies, as well as inefficient infrastructure and lack of adequate funding considerably affect the effectiveness of any attempt to reform VET systems. Even if access to all levels of education was increased and educational opportunities were equally

(19) EPL (*Ενιαίο Πολυκλαδικό Λύκειο*), the integrated secondary school, 'was developed in Greece on the grounds of social-democratic political ideas about economy, society and democratic life, similar to those in other European countries of post-war times' (Patiniotis, 2005).

(20) AEI: *Ανώτατα Εκπαιδευτικά Ιδρύματα* – higher education institutes;
ATEI: *Ανώτατα Τεχνολογικά Εκπαιδευτικά Ιδρύματα* – higher technological education institutes.

(21) The evaluation of comprehensive schools in Greece was implemented by the University of Crete in the context of the project Reform of general education programmes (1994).

distributed, low quality in the learning offer (VET curricula/learning methods) and inadequate policy interventions would inevitably turn VET into a low-level, second chance option, attracting only pupils of low educational achievement. Educational policies perceived as 'egalitarian' interventions should also be accompanied by specific measures aimed at elevating social respect and recognition of VET. Counterbalancing social origin effects on

VET can be achieved to a large extent through application of quality standards in the learning process improving, thus, the status and relative mobility chances for those pupils who opt for vocational pathways. Fragmented interventions that are not embedded in a wider and consistent reform plan are likely to have little and only short-term impact on the effectiveness and social role of VET.

Box 5: Economic dimensions of adult training in Greece (KEPE study)

A recent study published by the Centre for Planning and Economic Research (KEPE, April 2005) in Athens about the Economic dimensions of adult training attempted – among other objectives – to assess the implications of vocational training on the position of trainees in the labour market – particularly on their participation in the labour force – on employment and unemployment rates, on exit from unemployment, on employment preservation and on incomes achieved in the market. The study documents the low incidence of vocational training (IEK and KEK ^(a)) in the country during the period 1998-2002, based on individual data, which derived from the labour force survey (National Statistics Agency).

The main outcomes are summarised as follows:

- (a) increasing rates of students in higher education and technological institutes are detected in 1998-2002. At the same time the total number of places available in AEI/TEI increased due to new institutes established during that period;
- (b) decreasing rates of students in vocational training (IEK, KEK);
- (c) increased availability, thus more opportunities to succeed, in higher education institutes, decreased rates of demand for vocational training (% of registered students) ^(c). It is likely that in the years to come the number of IEK will diminish;
- (d) vocational training programmes and vocational institutes are not the first choice of young people, but rather an option they would prefer to avoid;
- (e) attending vocational training programmes (continuous vocational training) does not considerably affect the percentage of those departing from unemployment (marginally affects participants in IEK – initial training);
- (f) the higher the level of education, the lower the percentage of those who risk departing from employment (losing their jobs);
- (g) low-skilled individuals are more likely to exit unemployment than those attending vocational training programmes ^(g);

- (h) training positively affects the probability of women participating in the labour market, while for men, who in any case participate for social reasons, its effect is insignificant;
- (i) vocational training programmes offer rather little for job placement or job maintenance; nevertheless, as long as trainees are employed, acquired training significantly improves their salaries.

Despite this study not being explicitly concerned with social mobility and relative mobility chances of those participating in vocational training programmes, the findings confirm, on the one hand that prevailing strategy for pupils in Greece is to attain higher education, as it is likely to achieve better career prospects than any other educational route ^(d), and on the other the lack of trust in vocational training (long and short term) programmes ^(e).

- (a) IEK: *Ινστιτούτο επαγγελματικής κατάρτισης* [initial vocational training institute] KEK: *Κέντρο επαγγελματικής κατάρτισης* [continuous vocational training centre].
- (b) The percentage was 11.3 % for men and 13.4 % for women in 1998, while it decreased to 9.6 % and 10.2 % respectively in 2002 (age cohort 16-24).
- (c) In 1999, the unemployment rate of those having attended vocational training (technical/vocational schools, IEK, short-term continuous training) was 14.5 % while the total unemployment rate was 12.2 % (+ 2.3 %); in 2002 the rates were 13.8 % and 10.5 % respectively (+ 3.3 %). 52.1 % of unemployed (both sexes) with vocational training qualifications had been in unemployment for 12+ months (2002).
- (d) Unemployment %: AEI graduates 6.5 %, ATEI 12.2 %, secondary education 11.1 %, compulsory education 10.9 %, primary education 8.0 % (first semester 2006) (National Statistics labour force survey).
- (e) 'Learning does not automatically lead to employability. Employability is determined more by the ability to transfer core competences from one job to another and from one enterprise to another rather than by job-specific skills. It requires a sound educational foundation and a broad initial training upon which continuing learning can build throughout a person's working life' (ILO, 1999).

4.2.4. Either comprehensive or selective ...

At international and European levels particular measures and changes have been initiated as far as upper secondary, post-compulsory education is concerned, either in the form of comprehensive schools integrating both general academic and vocational pathways, or through the shift towards more general and less job-specific vocational education curricula. Recent policies signifying the transition phase to the post-industrial, knowledge-based economy, have attempted to bridge theory and practice. The implications of such policies on social fluidity in the sense of equal opportunities have to be further investigated based on empirical data and thorough research; the educational reform in Britain has not provided significant impact deriving merely from comprehensive schooling. The comprehensive experiment in Greece has not provided adequate data to judge the impact of EPL on relative opportunities or the reduction of inequalities in educational attainment. In Germany, although the dual system has eased the transition from school to work and thus entry into the labour market for students graduating from VET pathways, the strong association between education and labour markets directly mediated by employers' unions has been a critical parameter of social immobility.

The aforementioned case studies that demonstrate different implementations of selective and comprehensive educational patterns have shown that educational policies do not always achieve release from social inheritance effects deeply rooted in education unless they are embedded in a wider social reform agenda. Nevertheless, it would be wrong to claim that any intervention that aims to increase learning opportunities and, thus, reduce inequalities in educational attainment is of minor impact since other variables are more decisive and vital in affecting the origin/destination association (see OED triangle). Under certain conditions, stressing quality issues in vocational education may be more effective and influential than any innovative practice that attempts to lift social inheritance barriers by means of redefining selective systems.

From a theoretical point of view, it is accepted that mixed social environments in education involving pupils from all levels and of diverse social status are more likely to reduce class

origin effects and class bias; however, it is not always easy to realise as in practice inequalities are defined by several means, such as regional inequalities, geographical segregation, gender discrimination, race, etc. On the other hand, any transformative action should be placed in the historical and socioeconomic context in which it is applied. Traditions, cultural influences, current socioeconomic developments affect differently the initiation of certain reforms and determine success, failure or minor/major impact on existing structures.

The trend towards convergence between general and vocational education has favoured changes that lead to:

- (a) incorporation of general subjects in vocational/technical education curricula (in some cases, differences between general and vocational education curricula have become minor);
- (b) students' mobility from vocational/technical education to higher education institutes (access to higher education is decided primarily on general knowledge);
- (c) implementation of quality standards to improve the status and effectiveness of VET.

Although several European countries have attempted to change the character of VET, it is not evident that its traditional role has essentially changed. All aspects of VET contributing to social stratification have to be reviewed and analysed before reliable policies and measures are promoted to modernise obsolete structures and perceptions.

The educational policies, which promoted the establishment of comprehensive upper secondary schools, intended to combine general and vocational education into more adequate types of schooling to meet changes in the production system and the labour market – which demand sound general education and flexibility – along with promotion of equal opportunities in culturally mixed environments.

It is still questionable whether comprehensive schools (lower and upper secondary) can be more effective and successful in achieving these goals. Further research and empirical data from various national settings are required to justify if comprehensive schools can reverse social inheritance effects as well as achieve high educational standards and learning outcomes.

5. Soft skills: the decline of qualifications?

Although national and European policies have stated particular goals to achieve in the years to come (Lisbon agenda 2010) and higher education/VET reforms have been implemented, the labour market seems to be moving faster, sometimes beyond traditional norms and work ethics. Changes and renovations in the sectoral composition of the production system and the occupational structure at macro level; process and product innovations, restructuring and new organisational/managerial forms within companies at micro level have dictated new imperatives for educational systems. Within this constantly changing environment, VET systems are called to accommodate the need for new skills and competences demanded by the labour market.

Despite the general assumption that credentials and certification should play the key role in determining the distribution of employment opportunities, emerging trends in the labour market suggest that the role played by qualifications – such as VET or higher education credentials – within the recruitment and selection process is often quite weak and limited⁽²²⁾. That is, merit as defined by educational achievement – either academic or vocational – tends to lose part of its validity in defining occupational destinations. The association between education and destination (OED) would inevitably become quite loose, if objective criteria were to be less important.

Surveys and research work particularly in the US and the UK⁽²³⁾ have shown that many companies in manufacturing and service

Box 6: Soft skills in the labour market

According to a research paper by Jackson et al. (2005⁽⁹⁾) employers are becoming less interested in educational qualifications. To test their hypothesis, Oxford researchers analysed 5 000 recruitment advertisements and interviewed people doing the hiring. Firms, they discovered, want employees with skills that formal education does not necessarily bring: 'high touch' as known in the jargon, rather than 'hi-tech'. Typical examples are management jobs in fast-growing industries such as leisure and retailing, as well as posts in public relations, sales and customer care.

Employers themselves say much the same thing. 'What our members want is office and personal skills rather than more advanced education', says Matthew Knowles, policy adviser at the British Chambers of Commerce, a group for small and medium-sized businesses. 'You see a lot of people from university who take three to six months to pick up the skills for an office job. They could do that by the age of 19 and start moving up. Instead they spend three years at college and then take a job they would have taken anyway.'

Financial-services employers echo those views. Bruce Collins, chief executive of Tullett Liberty, a City broker, admits non-graduates to his graduate trainee scheme. 'We want inter-

personal skills, awareness, attitude, eagerness to learn: are they rounded individuals? What's their social life?' he says. 'They've got to come across well, not just talk the numbers but build relationships.' The result, he explains, is a workforce where a 'guy with an O-level in woodwork sits next to a guy with a PhD in mathematics'.

Oxford research showed formal qualifications featuring in only 25 % of the advertisements in the sample, typically for top-level jobs. In the 'sales and personal service' category, less than 10 % stipulated educational qualifications. What these posts did require were skills in communication and teamworking, and personal attributes such as good appearance, good manners, character and presence. Assuming, reasonably, that job adverts reflect what employers really want, this neatly explains why education matters less than believers in meritocracy expected.

'There is some evidence that, over time, the influence of qualifications on UK labour market outcomes, at least as measured in terms of the promotion of intergenerational social mobility between classes, has actually declined' (Jackson et al., 2002).

⁽⁹⁾ The research findings were first published in brief in 2004 in *The Economist* (Jackson, 2004).

(22) With the exception of occupational labour markets where qualifications and credentials regulate access to occupations, e.g. in Germany (Section 4.2.2).

(23) Keep, 2004; Jackson, 2001; Jackson et al., 2002; Johnson and Burden, 2003; Miller et al., 2002; Spilsbury and Lane, 2000.

sectors have introduced criteria that focus on personal skills, talents and attitudes rather than certifications, diplomas or university degrees, to recruit new personnel. Formal qualifications awarded by VET and higher education institutes are often undervalued as recruitment criteria, giving ground and validity to soft skills.

The definition of soft skills is broad enough to include a wide range of skills and abilities. In their variety, soft skills refer to a cluster of personality traits, social graces, and facility with language, personal habits, friendliness, and optimism that mark each of us to varying degrees, as well as communication skills, problem-solving, team work, entrepreneurship, etc. Persons, who rank high in this cluster, with good soft skills beside formal qualifications, are generally the people that most employers would preferably hire.

One of the surveys concerning developments in the UK labour market, the DfES's learning and training at work survey ⁽²⁴⁾, highlights that only '22 % of employers, while interviewed, said that they took (formal) qualifications into account to a great extent when recruiting young people' (IFF Research, 2000).

The research findings illustrated above may not be considered as representative of cross-country developments and changes in recruitment criteria; they are only indicative of current trends in the labour market, especially concerning emerging ventures in the broad service sector.

While some of the skills included in the 'soft' cluster are undoubtedly trainable, such as team working, communication skills and entrepreneurship, others that belong to the core cluster of personality characteristics, attitudes and behaviours are closely related to and determined by social origin effects rather than the educational process. Self-confidence, leadership, creativity, discipline, attitude towards learning new things, social and cognitive skills and generally less identifiable traits are developed in the early stages of children's life and, hence, are strongly influenced by the family environment

(Espring-Andersen, 2005). Soft skills are harder to measure and identify than more fixed know-how such as technical requirements of a job and more sensitive and dependent on social background variables and parental cultural capital; however, it is not unequivocal that they cannot be developed and improved by adequate pedagogical methods. On the contrary, there are teaching methods and pedagogical activities that deliberately attempt to develop social skills beside hard skills particularly in the early stages of school life (pre-school, primary school), although this is not usually the main goal of the curriculum (Campbell, 2006).

In any case, emerging trends in the labour market have raised several questions on VET systems across Europe, not least at sectoral level. It may well be that the type and variety of new skills (technical and soft skills) demanded by employers in many parts of the service and manufacturing sectors are not covered by the current certification regime and are not implemented by all national VET systems. The development of VET curricula to match new skills and requirements of the labour market is widely discussed. New core skills and key competences frameworks initiated by international and European organisations and projects have already addressed social skills within a broader reform aiming to improve employability and prevent new forms of inequality likely to rise in the labour market.

Cedefop, Onstenk (2001) emphasises that broadening occupational and market requirements should lead to multidimensional analysis of skills required in the work place, which could not be restricted to the level of technical, job-specific skills. VET should ensure a broad base including technical, methodological, organisational and communicative as well as learning skills. There are different European models according to how they ensure responsiveness of VET to changes in occupational structure and the labour market. Two main strands are distinguished: (a) a general or core

(24) DfES commissioned sample survey conducted by IFF Research Ltd of all establishments in England. Data are collected on employers' recruitment difficulties, amount of training arranged or funded by employers and information on several training issues, e.g. employers' awareness of, and involvement with, training initiatives. The 2000 survey also includes a section on the cost to employers of providing job-related training. The learning and training at work survey covers all employers in England and data are available at government office region, industry sector level and also by size of employer. The data for the 2000 survey were collected between July and October 2000.

Box 7: Knowledge, skills and attitudes for employability (ILO)

Core knowledge, skills and attitudes that improve employability as defined by the International Labour Organisation (ILO) indicate a wide range of skills in a comprehensive approach including technical, social and intellectual – learning skills:

- (a) intellectual skills for diagnosis and analysis, innovation and learning to learn;
- (b) social and interpersonal skills involved in communication, decision-making, teamwork and adaptability, positive attitudes and behaviour, and the ability to assume and discharge responsibilities;
- (c) business and entrepreneurial skills, including development of an entrepreneurial attitude at work, creativity and innovation, the ability to identify and create opportunities, calculated risk-taking and an understanding of basic business concepts such as productivity and cost and skills for self-employment;
- (d) multiple technical skills in generic areas, which are central to several occupations that help occupational mobility.

skills approach including emphasis on learning skills, (b) broad occupational competence or key competences approach. The first is limited to an addition to VET objectives, while the latter asks for reconsideration of both concepts and practices in VET.

The DeSeCo project is an OECD/INES initiative for the definition and selection of competences, which started in 1998. It was initiated by the Swiss Federal Institute for Statistics, with the help of the National Centre of the Education Department of the US. Among a concrete set of activities between 1998 and 2000, the project involved:

- (a) analysis of former OECD indicator projects on competences such as the cross-curricular competences project (CCC), the international adult literacy survey (IALS), and the human capital indicators project;
- (b) study of existing theoretical and conceptual approaches to the concept of competences;
- (c) identification and definition of theoretical sets of relevant competences in several disciplines: anthropology, psychology, economics, sociology and philosophy.

The various criteria are derived from analysis of the definitions and descriptions used in Flanders in various social spheres for notions such as

Box 8: Competence building – the DeSeCo approach

The concept of competence is defined in a broad sense to include knowledge, skills, insights and attitudes. The project defined six broad categories of competences:

Category: social competences

- Sc 1: participating actively in society with respect to the multicultural dimension and concern for equal opportunities;
- Sc 2: communication competences (including assertiveness, being able to stand up for oneself and maturity);
- Sc 3: being able to cooperate.

Category: positive self-image

- Sc 4: having a positive self-image with a view to self-development (including self-confidence).

Category: being able to act and think autonomously

- Sc 5: competences in data acquisition and processing (including ICT);
- Sc 6: problem-solving competences;
- Sc 7: self-guidance and self-regulation (including a sense of responsibility);
- Sc 8: being able to think and act critically and reflectively.

Category: motivational competences

- Sc 9: having the courage to explore and being eager to learn;
- Sc 10: sense of initiative.

Category: mental agility

- Sc 11: creativity and inventiveness;
- Sc 12: flexibility and adaptability.

Category: functional competences

- Sc 13: linguistic competences;
- Sc 14: technical competences.

competence, basic competence, core competence, key competence, professional attitude, and so on.

Both the core skills approach and the competence building approach emphasise reconsideration of knowledge and skills to answer how education and VET may respond effectively to emerging demands in the labour market considering technical skills are not the sole factor leading to employability. As mentioned before, new ethics and norms in the labour market have put into question the issue of equality in opportunities and the role of education and VET as a mediating parameter. New demands tend to increase social inheritance barriers and improve the comparative advantages of upper classes in their way to employment.

The inclusion of soft skills in VET curricula along with reforms towards convergence between general and vocational contents may prevent negative effects that could hamper the VET role in providing high quality qualifications. It is worth to note that development of soft skills in a broad sense

should not be limited to the context of VET programmes and curricula; since soft skills involve, among other skills, individual traits and attitudes that derive from the early stage of life, changes at all levels of education starting from pre-school and primary school education should be concerned.

6. Conclusions

Social mobility is defined either as a result of class structural change, namely movement between class origins and destinations affected by significant changes in the socioeconomic and occupational structure (absolute mobility) or as social fluidity meaning mobility within the class structure (relative mobility). Social fluidity is influenced by the relative chances individuals from different class origins have of attaining different class positions. Structural changes, although predominant in affecting absolute mobility rates, may be less affective if the aim is to increase relative mobility in a given socioeconomic and cultural context. The focus then has to be on policies to reinforce the mobility potential of individuals between class origin and class destination.

Social mobility theories have analysed the role of education as a determinant of the class position that an individual comes to occupy; social mobility research examines the relationships between class origins and educational attainment, and, educational attainment and class destination. Educational resources, cultural capital and income distribution have a critical role to play. Policy interventions in particular areas, notably those that affect equality of conditions (ascribed factors) and of opportunity, are likely to influence relative mobility in modern societies.

Whether education and educational policy can make a difference to social class inequalities has been widely debated in the sociology of education as well as in social mobility theories; however, which policies and measures are adequate and effective to reverse inequalities rooted in education systems remains an open question subject to socio-political discourse.

Even if certain measures and policies are promoted and educational reforms (universal access to all levels of education, expansion of compulsory education, increase of school leaving age, etc.) are successful in weakening the link between class origin and educational attainment, there are still several factors (social

exclusion, poverty, cultural background, regional inequalities) that influence pupils' academic ability and, hence, educational achievements.

The direct influence of origin has started to become more important again, after a post-war interval during which educational qualifications seemed to be the way ahead towards better occupational and social positions. The role of school may still be strong in providing opportunities for better positioning, however, it seems that it's not getting stronger – and could even be reducing. Reductions in relative educational inequalities should be attributed to wider programmes of social reform, notably in Scandinavian countries, rather than to single educational policies.

VET, though part of the education system as a whole, could be considered as having a particular role in mediating distribution among occupational positions. The distinction between general and vocational education, which was reflected in the dichotomic structure of the secondary level leading pupils to different educational routes (general/vocational), is rooted in the foundations of socioeconomic models and mainly in the hierarchical structure of labour division and occupations in industrial and pre-industrial societies.

Based on this hierarchical structure, the dichotomic or selective education system in its pure form – that used to be the dominant educational paradigm for a long time – contributed to the reproduction of social and occupational hierarchy. Vice versa, the basic distributional function of education systems was implemented through distinct educational pathways that predicted to great extent future class destinations. Consequently, VET has been conceived as a choice or educational orientation leading pupils towards lower and intermediate positions in the socio-occupational structure and, attracting mainly children of less favoured social backgrounds. In particular, selective systems that favoured rigid selection of educational orientation at an early age (the

tripartite system in UK) have considerably contributed to social reproduction effects.

Traditional strategies to reduce social inheritance effects have promoted policies aiming to avoid early tracking and endorse comprehensive schooling. However, research and empirical data drawn out of particular cases (the British comprehensive reform) have shown that comprehensive reform did not significantly affect relative class inequalities, although it increased access to all types of schools for pupils of different class origins. It rather shifted the ground of competition in securing educational qualifications than reducing inequalities in relative educational opportunities. The shift of school leaving age and abolition of early age selection have obviously provided pupils from lower classes more opportunities for learning and more chances to select educational tracks reducing class inheritance effects more effectively than comprehensive reform *per se*. These changes are considered to be rather the result of autonomous social processes – and not of educational reforms – that would have happened even if the comprehensive reform had not been introduced.

At international and European levels particular measures and changes have been initiated as far as upper secondary, post-compulsory education is concerned. Either in the form of comprehensive schooling (the comprehensive experiment in Greece) integrating both general academic and vocational pathways, or through the shift towards more general and less job-specific vocational education, recent policies signifying the transition phase to the post-industrial, knowledge-based economy, have attempted to bridge the gap between theory and practice and address current developments in the occupational structure.

The current shift in the direction of convergence between general and vocational education has put into practice changes that favour:

- (a) incorporation of general subjects into vocational/technical education curricula;
- (b) students' mobility from vocational/technical education to higher education institutes;
- (c) implementation of quality standards to improve the status and effectiveness of VET.

The implications of such policies on social fluidity have to be investigated based on empirical data and thorough research. On the other hand, any transformative action should be placed in the historical, socioeconomic and national context that it is applied. Traditions, cultural influences, current socioeconomic developments affect in different ways the initiation of certain reforms and determine success/failure or minor/major impact on existing structures.

Despite the general assumption that credentials and certification should play the key role in determining the distribution of employment opportunities – providing, thus, for meritocratic selection against ascription – emerging trends in the labour market suggest that the part played by qualifications, such as VET or higher education credentials within the recruitment and selection process is often weak and limited. Formal qualifications are often undervalued giving ground to soft skills referring to a wide range of social skills and abilities such as communication skills, problem-solving, teamworking, entrepreneurship, as well as personality traits, social graces, and ease with language, personal habits, friendliness, etc., which apart from traditional norms and ethics in the labour market, may also question traditional concepts of social analysis.

Emerging trends in the labour market have raised several questions on VET systems across Europe concerning the type and variety of new skills (technical and soft skills) demanded by employers in many parts of the service and manufacturing sectors. The development of VET curricula to match new skills and requirements of the labour market is widely discussed. New core skills and key competences frameworks initiated by international and European organisations and projects have already addressed social skills within a broader reform aiming to improve employability and prevent new forms of inequality that are likely to rise in the labour market.

Although the impact of educational policies on mobility trends seems to be limited if they are not embedded in a broader social reform proposal, VET policies should strengthen their efforts to achieve: (a) higher status and prestige that will convince parents and pupils that VET is not a second-class choice; (b) high quality

standards, including infrastructure, learning methods and curricula as well as teachers training. The aim should be to: widely introduce and validate integrated curricula (combination of compulsory and optional courses) that enable flexibility and favour mobility between various educational streams; ease access to higher education and/or other post-secondary education institutes; emphasise social skills that could be developed through extra-curricular activities; ensure recognition of VET credentials in the labour market.

Future research should focus on the impact of such policies implemented in their specific national contexts, such as further research on comprehensive reforms in their various

implementations should highlight social mobility and equality aspects beside learning achievements.

Social mobility analysis is closely related to class analysis theories; it is obvious that inconsistencies and conflicting approaches in mobility theories and research results reflect the complexity of a controversial issue such as social class analysis. Though important research work has been done in the last decades, social mobility will continue to be central to the social research agenda, as radical changes in socio-occupational patterns will inevitably affect (and are already affecting) traditional concepts and theories.

List of abbreviations

AEI	<i>Ανώτατα Εκπαιδευτικά Ιδρύματα</i> [higher education institutes]
ATEI	<i>Ανώτατα Τεχνολογικά Εκπαιδευτικά Ιδρύματα</i> [higher technological education institutes]
CASMIN	Comparative analysis of social mobility in industrial nations
Céreq	<i>Centre d'études et de recherches sur les qualifications</i>
CREST	Centre for research into elections and social trends
DeSeCo	Definition and selection of competences
DfES	Department for Education and Skills
EPL	<i>Ενιαίο Πολυκλαδικό Λύκειο</i> [comprehensive lyceum]
ESRC	Economic and Social Research Council
IEK	<i>Ινστιτούτο επαγγελματικής κατάρτισης</i> [initial vocational training institute]
ILAS	International adult literacy survey
ILO	International Labour Organisation
INES	International indicators of education systems
KEK	<i>Κέντρο επαγγελματικής κατάρτισης</i> [continuous vocational training centre]
KEPE	<i>Κέντρο προγραμματισμού και οικονομικών ερευνών</i> [centre for planning and economic research]
OECD	Organisation of Economic Cooperation and Development
PISA	Programme for international student assessment
VET	Vocational education and training
EGP	Erikson-Goldthorpe-Portocarero [classification scheme]
OED	Origin – education – destination (triangle model)

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The role of vocational education and training in enhancing social inclusion and cohesion

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Abstract

Social inclusion and social cohesion are two dominant themes in vocational education and training (VET). They are important policy objectives of the Lisbon goals. In this contribution we explore the relationship between cohesion, exclusion and VET with particular reference to exploratory new research using the European and world values survey.

Separate traditions of social inclusion and cohesion have in the past (and more recently) been part of discussions of the concept of vocational socialisation which presents one important way in which VET can jointly contribute towards inclusion and cohesion within societies. In our introduction we chart the historical and contemporary ways in which societies have attempted to reconcile cohesion and inclusion through various forms of VET and socialisation. There appears to be a movement away from socialisation towards competence approaches to VET which may emphasise narrow forms of inclusion, through employability. In short, VET has many potential benefits for societies beyond narrow labour-market functions – although these remain important. Whether these benefits are enacted or not depends on the place of VET for social inclusion within a national welfare system.

The obverse of social inclusion is social exclusion – a contested concept. Social exclusion is a multi-dimensional variable which has different meanings across national systems of education. Using exploratory evidence from the latest sweeps (2000-02) of the European and world values surveys we consider that an outcome-based approach to social exclusion (based on objective lived experiences) is superior to a taxonomic categorisation (based on household composition or other descriptive variables). Taking an outcome-based approach to social exclusion we examine the dynamics of exclusion in five countries (Norway, Poland, Portugal, England and the US) showing that VET can sometimes (but not universally) protect against certain forms of exclusion. However, this evidence needs to be supported by further work using other surveys. In particular, longitudinal and labour force surveys would be useful. Our quantitative analysis is supported through policy analysis which critically examines the ability of VET to meet the needs of the socially excluded. In this analysis, we also consider the experiences of immigrants and the disabled in VET who we find are particularly marginalised from mainstream VET provision. Our conclusions are that targeting VET towards specific client groups is not necessarily the optimal policy choice. First, various groups possess characteristics of social exclusion which might not be reached by targeted VET. Second, targeted VET may reinforce social exclusion if it is independent of non-targeted VET action.

We then consider social cohesion, differentiating this from inclusion, and arguing that cohesion is compatible with, and indeed conducive to economic growth under certain circumstances. In particular, VET can contribute towards value formation, institutional integrity and (arguably) the reduction of inequality. Using a unique time-series analysis for European countries during 1965-90 we consider

that educational equality can contribute towards a protection of civil and political liberties, suggesting that improving educational equality is positive for social cohesion. In this context, educational equality is measured by the edgini, a version of the income inequality gini coefficient based on the distribution of educational qualifications in the general population. We find an association, rather than strong causation, between VET enrolments and educational equality. We argue that VET may have a role to play in terms of the reduction of educational inequalities as well as in value formation.

We conclude by developing a conceptual model of social cohesion regimes which indicates the difficulties of policy borrowing while indicating possibilities for developing progressive systems of VET within national polities. In particular, we stress the need to modernise VET towards addressing issues of social cohesion and exclusion through greater client participation and integrating the socially excluded into mainstream VET rather than necessarily targeting the socially excluded.

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Introduction

This contribution to the Cedefop's fourth research report examines the role of VET in promoting social inclusion (or alternatively reducing social exclusion) and social cohesion. These two concepts, both seen in the literature to represent positive potential outcomes of VET, are related but there are important distinctions.

Social exclusion is a multi-dimensional category encompassing various types of exclusion experienced by individuals. It has different meanings across societies ranging from a narrow focus on employment to a broad orientation towards democratic participation. Social cohesion we take to be a more universal concept applied to society as a whole. It may be enhanced through higher rates of employment and certainly, as with social inclusion, implies strong communities, low rates of crimes and other social benefits at the individual level. There is certainly a relationship between social cohesion and community cohesion. However, social cohesion also implies levels of inter-community cooperation and social solidarity across communities and social groups which are likely to be enhanced by relative equality of incomes, strong social institutions (particularly those involved in welfare provision such as health and education) and the prevalence of societal attitudes of trust and tolerance.

In the structure of this report, social inclusion and social cohesion are considered separately in relation to VET. However, in the conclusion to the report we consider conceptual models which relate social cohesion and social exclusion.

Our approach to the contribution is to consider the historical, political, economic and sociological contexts of VET regarding social cohesion and social inclusion. We support our arguments using original and innovative empirical evidence conducted uniquely for this contribution. Where possible, we use evidence from evaluation studies to support our arguments, but we consider that examining the institutional and cultural contexts within which

VET functions are important in understanding the ways in which VET can be modernised to foster social inclusion and cohesion. Indeed, the modernisation of VET to meet the Lisbon goals for 2010 and beyond needs to take into account the historical trajectories and path dependencies of European countries as well as the polysemic nature of both exclusion and cohesion. Concerning the nature of VET we consider both the nature of VET systems (regarding transitions, funding and particularly regulatory frameworks) and specific interventions. We consider VET in terms of interventions provided by, or regulated by, the state from upper-secondary schooling through adulthood. Aside from apprenticeships, we do not consider employer-based training in detail as there is no substantive evidence connecting this form of training to either social inclusion or cohesion. In the report, we focus on four European countries: Norway, Poland, Portugal and England. We additionally consider other national systems and models of VET, particularly Germany and France, and the VET system of a major EU competitor: the US.

The report is divided into four sections. In the first, we consider the concept of vocational socialisation both historically and in contemporary policy literature. We focus on this concept as it is central to discussions of social cohesion and social inclusion, being a key mechanism through which inclusion and cohesion were reconciled in the public domain. Although forms of vocational socialisation were relatively country specific, the broad aims of VET programmes in terms of reconciling inclusion (through labour-market integration, economic citizenship, political participation) and cohesion (through employment, industrial democracy, commitment to national polity) were striking. We consider that although some aspects of vocational socialisation were reactionary and rigid, the move away from vocational socialisation to a focus on narrow competences and employability in

VET is problematic for inclusion and cohesion. The challenge for modernising VET is not necessarily entrenchment in national models of vocational socialisation but how to reconcile some principles of vocational socialisation with the challenges of social exclusion.

In the second section, we then consider the relationship between social inclusion and VET both theoretically and empirically using data from the latest sweep of the European values survey (EVS) and World values survey (WVS) (2000-02). We consider the meaning of social inclusion in various policy discourses in its solidaristic (where inclusion is central to social cohesion), liberal (where social cohesion is mediated by market processes) and monopolistic (corporatist) forms (where social cohesion is based on the dominance of certain majority groups and, therefore, social exclusion does not particularly consider the interests of excluded groups). We stress the multi-dimensional nature of social exclusion beyond employment and economic domains. This approach remains true to the original formulation of social exclusion as a relative and social (rather than simply economic) concept. Although certain groups, such as workless households, are often tautologically classified as excluded, we use cluster analysis, which we argue is an innovative and more appropriate method of classification. Cluster analysis classifies individuals according to shared characteristics (indicators of exclusion) rather than on a dimensional scale of exclusion/inclusion. We use WVS and EVS data for five countries (Norway, Poland, Portugal, England and the US) to identify the dynamics of social exclusion in each country. We choose these countries to exemplify various dynamics of social exclusion and VET in a transitional economy (Poland), a southern European economy (Portugal), a market orientated/liberal economy (England), a major international comparator and competitor (the US) and a social democratic/welfarist state (Norway). By using a broad measure of social exclusion focusing on both income and social capital exclusion (rather than a narrow, employment focused measure) it is possible to identify (through logistic regression) that VET qualifications are sometimes, but not

always, associated with a lower probability of being in a socially-excluded category. We also consider associations between VET and other measures of social exclusion in terms of political disenfranchisement and health. Considering national policies on VET in these countries we argue that an embedding of not only user involvement, but democratic participation by the socially excluded in the operation of VET is beneficial. We also reflect on the targeting of VET for the socially excluded, explaining that the broad nature of social exclusion in societies means that there are limits to the effectiveness of targeting of VET initiatives.

In the third section, we turn our attention to social cohesion, emphasising the positive role of VET in both system and social integration. Although growth and social cohesion are not necessarily considered to be conflicting objectives, we emphasise the potential role for VET (among other parts of welfare provision) to reduce conflicts between these two key policy objectives. Indeed, social cohesion is another mechanism by which VET can promote economic growth. In particular, VET potentially provides mechanisms through which knowledge of, and participation in, institutions can be increased and may potentially be used to reduce educational inequalities. It also enables individuals to benefit in terms of their health, makes them more likely to participate in civic associations and reduces crime. The reduction of economic and social inequalities is implicated in processes of economic growth as we will explain in the third section of this report. Rather than concentrate on individual data (which we have previously argued cannot represent social cohesion – Cedefop, Green et al., 2004) we use cross-national time series data for European countries to provide evidence that educational equality is associated with an increase in civil and political liberties, but not necessarily with unrest. Although there is not a sufficiently robust dataset to incorporate vocational enrolments into this time series, cross-sectional data is used to assess the relationship between vocational enrolments and general educational inequality (measured by the education gini coefficient). We find a relationship between participation in vocational courses at ISCED3

and general educational inequality although, in addition, VET may have an impact on social cohesion through alternative mechanisms (in particular vocational socialisation and values). However, we urge caution on the interpretation of this data given the limitations of the evidence available.

In our conclusion we assess conceptual models of social exclusion and cohesion with regard to VET. We use Silver's (1994) conception of models of social exclusion to consider four possible conceptions of social exclusion/cohesion within Europe. In each VET has a particular (but not deterministic) function in delivering social cohesion/exclusion. We consider that to modernise VET in terms of social exclusion and cohesion three key policy priorities for European countries are:

- (a) participation of the socially excluded in implementing VET;
- (b) inclusion in mainstream VET (rather than necessarily targeting, particularly as the

socially excluded are distributed outside of target groups);

- (c) a return to the principles associated with vocational socialisation to enhance social cohesion;

Aside from the policy domain, we consider that for research evidence there is a priority to improve data on equity in VET, not just contemporary data, but also reconstruction of past time series on equity. This will enable researchers to gain purchase on the dynamics of VET over time and inform debates on equity and social cohesion. Additionally, there needs further work in modelling social exclusion multi-dimensionally and over time, exploring the impact of VET on social exclusion using longitudinal analysis. Finally, in terms of VET providers we stress a broader categorisation of VET users in considering the meaning of social exclusion and to emphasise user involvement towards civil-society forms of inclusion.

1. Socialisation through VET for inclusion and cohesion: historical and contemporary contexts

1.1. Historical overview

In reforming VET to meet the Lisbon goals of 2010, Leney et al. (2004, p. 116) comment: '[...] we need to explore the extent to which VET contributes to the integration of groups that otherwise would be marginalised, and to the formation of vocational identities'.

This comment is an important starting point in considering the relationship between VET and social cohesion/inclusion. The role of VET in bringing all groups into the national polity has been an important, but neglected, aspect of education. Schooling and, in particular, general education has often been regarded as a key agent of socialisation. It has variously been seen as a vehicle of formation by the state, a cradle of future adult citizens, and a potential force for social cohesion (Boli, 1989; Curtis, 1988; Green, 1990; Melton, 1988; Miller, 1986; Miller and Davey, 1990). VET, on the other hand, has often been ascribed more limited roles, as merely providing skills for particular jobs or preparing for working life in general. Compared with the profusion of writings on education and socialisation, relatively little has been written on the role of VET in socialisation, or in promoting of social cohesion. Where the topic has been discussed, it has been mainly in relation either to the role of VET facilitating initial access, or re-entry into work (and thus, in modern parlance, in enhancing social inclusion through employability); or to the process of professional socialisation. Both, it can be argued, have impacts on social cohesion, but in a more circumscribed sense than implied in discussions about education and citizenship. However, within the limited parameters of these discussions, there have undoubtedly been considerable differences in perspectives. How the role of VET in socialisation has been perceived, arguably, reflects variations both in political logics and national pedagogic traditions.

In Europe, different accounts of VET and socialisation reflect political and regional cultural cleavages. Variations across political traditions are evident, although more complex than often thought. Liberals and conservative political ideologies, and their associated pedagogic traditions, have tended to promote the dichotomous view of education and training which holds that only general education – in the 19th century a classical education – was the royal road to cultivation and the acquisition of the essential attributes of a good citizen (Silver and Brennan, 1988). Derived originally from the ancient Greeks, specifically Plato's division of humanity into the gold (the elites), the silver (their auxiliaries) and the bronze (the peasants and craftsman), the tradition has generally reserved higher levels of general education for the dominant classes – whether in the form of Cardinal Newman's liberal education or von Humboldt's *Bildung*, practical – or vocational – education. The lot of the bronze others, was a preparation for labour but not citizenship, at least in the full sense of the word (see also Arendt, 1998).

By contrast, socialists have often seen vocational education and work-based education, not only as job training, but also potentially as a source of enlightenment or consciousness raising, in a way distinct from, but parallel to, the role of general education in the liberal/conservative paradigm. For the early 19th century English Chartists, the learning of 'really useful knowledge' went beyond developing practical skills and offered the possibility of general enlightenment and raised class consciousness (Johnson, 1979). For Communists, from Lenin and Krupskaya onwards, work-related polytechnical education was, among other things, a way of cultivating the new Soviet man. Both objectives suggested particular visions of the role of VET in promoting their chosen forms of social solidarity. August Bebel, the German socialist, cleverly captured

the tensions and elisions in the socialist and dominant ideologies in regard to vocationalism, allegedly commenting ‘vocational education was the general education of the working class. General education was the vocational education of the middle class’

The philosophy of liberal education, dear to European elites in the 19th century and after, was, after all, based on a scarcely buried contradiction – what semiologists would call an *aporia*. Advocates of liberal education, idealised in the idea of the liberal university, claimed to value learning, as Newman had it, ‘for its own sake’ (Silver and Brennan, 1988). It was not to be sullied with any base utilitarian or merely occupational motives. However, liberal education already included theology, and soon embraced comfortably within academe, law, medicine and other liberal professions. Technical education, on the other hand, was practical and had to do with a narrow training for a job. However, the origins of the term ‘vocational’, which soon replaced ‘technical’, lay in the notion of vocation or calling – pre-eminently associated with a religious calling. But whereas training for higher professional vocations – such a law, theology and medicine – became classified as part of general university education, only lower occupations were classified as vocational. Some philosophers refused the invidious dichotomisation of vocational and general learning. Alfred North Whitehead, for instance, wrote in 1932 that ‘[t]he antithesis between technical and liberal vocation is fallacious. There can be no adequate technical education which is not liberal and no liberal education which is not technical: that is, no education which does not impart both technique and intellectual visions’ (quoted in Silver and Brennan, 1988). John Dewey and George Kerschensteiner also, as we will see later, contested the inept polarisation. However, the distinction has been remarkably durable because it refracted an essentially class issue. The elite should have one education and the masses another.

Socialist traditions in education have also not been without equivocation and division over the meaning and purpose of vocational education. Often they supported vocational

education as an important aspect of overall educational provision for all social classes. Vocational education has been supported, not only as a provider of essential skills for working life, but also as having potential to reveal the true nature of work relations and thus to empower future employees (Johnson, 1979). Typically socialist advocates of vocational education have argued for it to be broad in nature, and usually combined with general education, or a distinctive sphere accorded equal status with general education. However, the political Left has not invariably championed vocational education. Where it has involved the early separation of children from different social groups into different tracks it has often been condemned as an agent of social class reproduction. The Italian communist, Antonio Gramsci, famously argued for a broad general education for the working class, rejecting new forms of vocational education advocated by Giovanni Gentile and adopted by Benito Mussolini’s regime. Technical schools, he feared, would not only perpetuate social differences – they would ‘crystallise them in Chinese complexities’ (Gramsci, quoted in Anderson, 1976, p. 22). Technical schools should not become ‘incubators of little monsters aridly trained for a job, with no general ideas, no general culture, no intellectual stimulation, but only an infallible eye and firm hand’ (Gramsci, 1977, p. 27). The combination in Gramsci’s thought of social progressivism and pedagogical conservatism has been frequently echoed in subsequent socialist writing on education (Entwistle, 1979).

Historically, differences in attitudes towards vocational education have not only reflected different political ideologies, but also different regional traditions. One obvious difference can be observed in the contrast between 19th century Britain and continental Europe.

Britain had very little vocational education prior to the late 19th century. This was partly because employers gave little support for it, fearing, as they did, that they would end up paying in taxes for something which would serve only to endanger their trade secrets and prompt their workers to demand higher wages. It was also no doubt a legacy of Britain’s

early industrial revolution which, occurring as it did despite, rather than because of, any advances in education and skills, encouraged the complacent belief that its continuing economic growth did not require new efforts to educate and skill the workers (Green, 1990; 1995). Opposed to State action to develop technical education, employers ended up relying almost entirely for their supply of skills on the privately organised and unregulated apprenticeship system. However, the results of this were often far from beneficial, as Flemming Jenkins, a Professor of civil engineering at University College, pointed out in his evidence to the Samuelson Commission in the 1880s. Explaining that in his experience apprentice supervision was often very lax; he maintained that while the best apprentices learnt a good deal, idle ones learnt nothing at all. Comparing the apprenticeship system with continental trade schools Jenkins argued that, in terms of practical ability and common sense, the English apprentice was a match for anyone, and even for the products of the Polytechnic. However, he continued: ‘when in after life, the two men came to fill the higher stations, the English engineer would begin to feel the want of elementary training very severely, and he is at a disadvantage compared with the man abroad, in the judging of new problems which come under his eye’ (HM Government, 1868, p. 130) Other contemporary commentators, like Silvanus Thompson, were less generous to the English apprenticeship system, claiming that in all respects it was inferior to the continental trade school. Thompson, in his book *The apprentice schools in France*, argued that the English apprentice spent six years in repetitive drudgery that failed ‘to make anything but a bad, unintelligent machine’ (Thompson, 1897).

If the evidence from the 19th century generally points towards a highly instrumental and very narrow conception of technical education in Britain, northern continental European States generally had a wider range of technical provision by the mid 19th century and typically adopted a much broader concept of the technical education curriculum. France, for instance, had many trade schools, in addition to the vocationally oriented *écoles primaires*

secondaires, for elementary school graduates, as well as numerous *écoles des arts et métiers* for training craftsmen (Artz, 1966; Day, 1987). Higher levels of the education system, including the famous *école polytechnique*, probably the best engineering university in the world at the time (Weiss, 1982), were also vocational in nature. These vocational establishments not only far outnumbered their equivalents in Britain, they also offered a different kind of education. Whereas the apprenticeship and trade schools in Britain were regarded as separate from the education system and provided no general education, French vocational schools were considered part of the education system and combined skills training and general education in equal measure (Thompson, 1897; Day, 1987). The *école polytechnique* promoted what advocates called *la science industrielle* which combined a holistic approach to the study of science and technique (Weiss, 1982).

The distinction between British and continental European vocational traditions from the 19th century is clear and is still evident today, as we will show later. However, there were distinctions within continental European systems which became more apparent as time went on. French technical education was firmly rooted in the education system, and continued to be so in the 20th century when the apprenticeship remained relatively weak. Other countries in southern Europe, many influenced by France, also developed school-based technical education systems alongside limited apprenticeship provision. Portugal is an example. Germany, after unification in 1871, other German-speaking countries and countries bordering Germany, such as Denmark, the Netherlands and Austria, however, developed a different tradition. Here apprenticeship systems dominated but combined with part-time school learning to become the dual system with master schools accessible after initial training and some work experience. Like the school-based systems in France, these systems combined skills training and continuing general education, but whereas the French style system remained largely state organised, apprenticeship systems were predominantly controlled by labour-market institutions – for instance through what later

became known as the social partners (Thelen, 2004). This added its distinctive dimension to the dominant conceptions of the functions and means of vocational training. Nordic countries were distinct again. There were parallels between Nordic systems and German social-partnership and apprenticeship based VET models, particularly in Norway. However, the origins of Nordic VET systems emerged from craft (rather than industrial) paradigms and centred on notions of locality and community rather than state formation. After the 1960s social democratic reforms in Nordic countries, VET agreements became legally constituted (Cedefop, Heikkinen, 2004). In Eastern Europe there was early centralisation of vocational education systems (particularly in Poland) but in the latter part of the 21st century these systems became distinctively socialist in nature with an emphasis on polytechnical education.

The three traditions of 19th century vocational education broadly outlined above, have, arguably, remained distinctive in the 20th century and led to different conceptions of the socialising role of VET. Wolf-Dietrich Greinert (2004) identified three major historical traditions in VET the societal model of training, represented by Germany, the market model, represented by Britain, and the state model, represented by France. Each conceptualises the socialising function of VET in different ways. The societal model emphasises professional socialisation. The state model emphasises cultivation of technique and general culture – as in the French notion of *culture générale*. The more minimalist and instrumentalist market version emphasises occupational training. However, here, in recent years, a rationale for the social benefits of VET has also been developed in terms of employability and social inclusion.

Although the German, French and British paradigms of vocational education and their social and labour-market functions have been well articulated and discussed they do not necessarily help us to fully understand the vocational education systems of other European countries. These systems may be analogous to those described above, but have their own distinctive characteristics. To provide some continuity between this section and section 2 on

social exclusion, which follows, we will examine systems of Nordic countries in general (Norway in particular) Poland and Portugal, in Section 1.3.2.

These national paradigms of VET map onto conceptions of social inclusion as will become clear in Section 2.3. In particular, the market model of VET is similar to the specialisation paradigm of social exclusion and the state model to the solidarity paradigm.

1.2. Kerschensteiner and Dewey on vocational education

Philosophically, there has been much early work reconciling vocational education with social cohesion. Georg Kerschensteiner (in Germany) and John Dewey (in the US) were responsible for establishing ideologically distinct, but pedagogically connected, traditions of VET in their respective countries. To understand developing VET for social exclusion and social cohesion it is useful to comprehend the principles underlying their thought.

Kerschensteiner was head of the school system in Munich from 1895 until 1919. He was largely responsible for reforming vocational education there, culminating in the 1907 compulsory continuation school law and a system much admired across Germany. At a time when continuation schooling in much of Germany was largely general, associated mainly with evening classes in elementary schools, he campaigned successfully for day-time continuation schooling up to 18 years of age in specialist schools where general education was integrated with learning craft skills. Like Dewey he saw pedagogic merits for young people to learn through practical and work-related activities. However, he also believed that this should form the basis for a wider general curriculum which together with workshop learning would have great benefits in socialising young people into adult life in the community.

Kerschensteiner believed that the existing school curriculum in Germany was too academic to engage the interest of many young people.

Rather than support more academic education in continuation schools he believed in focusing continuing schooling around work. Preparing for work was not the only object of this schooling; vocational education would also be an education in citizenship. Diana Simons' biography of Kerschensteiner, says that his 'system of education was to educate its members to form a community of thinking, selfless, efficient people all working willingly and joyfully together for the betterment and progress of the state' (Simons, 1966, p. 29). The notion of the state appears repeatedly in Kerschensteiner's writings and his formulation of objectives often seems to reflect a kind of idealised Hegelian statism. For instance, he wrote that 'the third and greatest of the schools' educational tasks [...] is to develop in them the inclination to contribute their part in the furtherance of the state's programme towards the ideal of the moral community' (quoted in Simons, 1966, p. 32). However, Simons maintains that Kerschensteiner's views were far from the nationalist opinions of Friedrich Lange's German League which was at the time trying to 'Germanise' education in Germany. His concern was as much with humanistic notions of world citizenship as with the concerns of the state. Kerschensteiner was keen to emphasise this, writing 'my objectors [...] always interpret "education for citizenship" only to mean educating the student to perform blind service to a strictly defined organism [...] but just as the family's task is to foster the state-idea and to prepare for state-citizenship, so one could say it is the job of the state to promote the "humanity-idea" of world citizenship [...] if we educate good state-citizens we are also educating good world-citizens' (quoted in Simons, 1966, p. 31). Whatever Kerchensteiner's views on the state it certainly appears that his main emphasis was on the role of vocational education in character building.

The basis of Kerschensteiner's pedagogy was his belief that education, to be effective, had to gain the interest of the student by engaging with the things which interested them. The objective then was to meet students on the grounds of their own egotism and turn interest to an altruism which would form the future moral citizen. 'How then, shall we tackle

the question of educating the young citizen to develop an altruism which is born of insight?' (Kerschensteiner, quoted in Simons, 1966, p. 44). His answer was through work: the vast majority of young people 'are engaged in some kind of employment and want to advance by means of their work. Their interests are centred around their job and nearly all youngsters are to be won over through this sphere of interest. If we win the boy over in this way, we also gain his confidence and with it we can guide him both intellectually and morally' (ibid.).

To Kerschensteiner, education through work was the way to develop the moral sensibility and character of young people. In his book on *Character and character training*, published in 1912, he argued that the four central aspects of character were: will, clarity of judgement, sensibility and engagement. These could only be developed through work. 'For there is only one thing common to all upright serious work, namely, that it exercises the power of the will, on which are based the most important civic virtues – diligence, care, conscientiousness, perseverance, attention, honesty, patience, self-control, and a devotion to a firm, disinterested, aim' (quoted in Simon, 1966, p. 47). The learning of crafts meant the building of character to Kerschensteiner, because it involved 'serious, intensive, productive activity' (ibid. p. 52). But so it was with other forms of human labour. 'The craftsman, the farmer, the artist, the scholar all reach true greatness through independent work at definite tasks' (ibid. p. 52). Further,, vocational learning not only involved individual concentration on a task but also collective endeavours in the workshop. These developed the ability to cooperate. 'When they are all engaged in some common piece of work in this way, they all experience common success and failure, and they will all come to feel common joy in their work and common disappointments. The ambitions of the individual must fit in with the ambitions of the class [...] It is in group work that a sense of responsibility for one's actions is developed, which is so important in later life and which is so painfully lacking here in Germany [...]' (ibid. p. 61).

Kerschensteiner's educational philosophy focused on work but was not limited in its aims

to fostering skills for work. Vocational education developed moral values and social skills through activity. It should also develop general knowledge and understanding through study of broader topics related to work. History, law, book-keeping, civics, were all part of the curriculum of the 'activity schools' in Munich, whose reform he completed by 1914. Kerschensteiner's great insight was to understand how these things could be taught through vocational study. As he wrote in a memorable example: 'I should like to look on our civics lessons as presenting a kind of history of civilisation which emerges from the history of the particular trade, in which the boy is engaged. Every trade, every profession, has a history which extends from the simple conditions of the past, through the fluctuating fortunes of time, to the complicated circumstances of the present. Here on its historic path, which, step by step, uncovers the ever increasing interdependence and bonds between man and groups of trades, and which demonstrates the gradual interweaving of interests between the professions, people and States, the pupil best comes to realise the limits of his justified egoism and to understand the tasks which the State has to perform in order to protect the rights of each citizen (quoted in Simon, 1966, p. 57).

Kerschensteiner's vision was very much of his time and there is much in his philosophy discordant with modern values – not least the pious and idealised statism, his obliviousness to class and gender inequalities in education, and his somewhat strident preaching on the duty and joy of work. He had his critics in his own day, although these were mostly those with instrumentalist notions of training who objected to the scale and cost of his vision of vocational training. However, he made a case for the pedagogic potential and broader social purposes of vocational learning which has rarely been argued so forcefully.

Dewey wrote his major works on education at the same time as Kerchensteiner, although there appears no record that they knew of each other's writings until later in their careers when their ideas had been largely formulated. It is therefore striking that many of their pedagogic starting points are similar. Both argued for a

vocational education that would have social benefits beyond those of inculcating the skills necessary for work. However, ultimately their standpoints are different. While Kerchensteiner promoted vocational education in specialised schools, albeit in conjunction with general education, Dewey opposed differentiation in schooling and wanted general and vocational education integrated in the same schools. Further, while Kerchensteiner argued for a vocational education that would strengthen character and promote good citizens of the state, Dewey sees the aim of vocational education more in promoting local community.

Dewey's pedagogy begins, like Kerchensteiner's, from the observation that learning occurs when the learner's interests are engaged. He also shared the other's belief that public schools had become too academic and were not perceived as relevant by many students. In his seminal work – *The school and society* Dewey (2002) explains this in terms of the changes brought by modernisation. Whereas children used to acquire much of their learning at home, through carrying out useful activities, industrialisation and the decline of home-based production meant this opportunity was no longer available to most children. Schools, which had replaced learning through home-based production, were out of touch with the needs of the majority of children, 'meeting the needs of only one class of people, those who are interested in knowledge for its own sake, teachers, scholars and research workers' (ibid., p. 300). Public schooling could not easily appeal to the child's interests in real life experience and thus rarely offered the same kind of stimulation. 'No training of the sense organs in school introduced for the sake of learning, can begin to compete with the alertness and fullness of sense that comes through daily intimacy and interest in familiar occupations' (ibid., p. 25).

Part of the answer to this dilemma for Dewey was to introduce more practical activities into the school. 'It keeps them [children] alert and active, instead of passive and receptive; it makes them more useful, more capable and hence more inclined to help at home' (Dewey, 2002, p. 26-27). However, practical activities alone were not enough. They had to be made

real if the school was to engender the spirit of social life. The school had to be made like a real community: 'the great thing to keep in mind, then, regarding the introduction into the school of various forms of active cooperation, is that through them the entire spirit of the school is revived. It has a chance to affiliate itself with life, to become the child's habitat, where he learns through directed living, instead of being only a place to learn lessons having an abstract and remote reference to some possible living to be done in the future. It gets a chance to be a miniature community, an embryonic society' (ibid., p. 32).

Dewey favoured the introduction of more practical activities into the school, alongside general education. However, he did not favour the creation of a separate sector of vocational schools. Continuation schools and trade were to him an inadequate compromise. This was partly because they focused too narrowly on preparing students for a job. He did not want education to serve the existing industrial system, 'The ideal is not to use the schools as tools of existing industrial systems, but to use industry for the re-organisation of schools' (Dewey, 2002, p. 311). He also objected that trade schools and continuation schools forced a choice of occupation too early and encouraged the division of social classes and it was 'fatal for democracy to permit the formation of fixed classes' (ibid. p. 313). The formation of such tracked systems forced a separation of social classes which was 'unfavourable to the development of a proper mutual sympathy' between social classes. It promoted an academic education for some and an 'over practical education for others' which brings about 'a division of mental and moral habits, ideas and outlooks' which was out of keeping with the spirit of democracy (ibid., p. 315).

Despite their similar pedagogic interest in the importance of engaging children's interests through practical activities, Dewey's vision of the social function of vocational education was, ultimately, different from Kerschensteiner's, who emphasised its role in teaching children their duty to the state, Dewey emphasised how it could foster community. Whereas Kerschensteiner accepted that children were being socialised

into different social roles, Dewey advocated social mobility and social mixing as the road to a higher form of democracy. Both favoured integrating general and practical in education, but Dewey also wanted social integration through education. As he wrote: 'the democracy which proclaims equality of opportunity as its ideal requires an education in which learning and social application, ideas and practise, work and the recognition of the meaning of what is done, are united from the beginning and for all' (Dewey, 2002, p. 315).

In conclusion, the substantive issues which Dewey and Kerschensteiner addressed are influential in the current modernisation of VET. The role of VET in aspects other than productivity (character formation) and beyond the individual (for Dewey the community, for Kerschensteiner the state) is an issue of current debate on VET. Although linguistically and ideologically there has been a movement away from character formation to social inclusion and from the community/state to social cohesion, there are some similarities between theories of the wider role of VET and contemporary perspectives.

1.3. Contemporary conceptions of VET and socialisation

Contemporary viewpoints on vocational have rarely stressed the moral and developmental dimension of VET in the kind of language used by influential philosophers such as Kerschensteiner (Simons, 1966) and Dewey (2002) who emphasised the role of ethics and character in (what are called now) social inclusion and cohesion. Morals have been replaced by social competences. Discussions of character formation tend to be conducted now in the more sociological language of transitions to adult roles. Nevertheless there are still quite widely held, if understated, assumptions that VET should play some role in building civic consciousness and promoting social cohesion. These are couched in general terms in policy statements of the major international agencies, such as the European Commission, OECD, Unesco and ILO.

1.3.1. The international agencies and VET

The European Commission study group on education and training entitled its 1997 report rather boldly *Accomplishing Europe through education and training*. Lifelong learning and vocational education were assigned a prominent role in promoting European identity and social cohesion. Europe, the report says: 'should play a role through education and training: i) to affirm and transmit the common values on which civilisation is founded; ii) in devising and disseminating ways of enabling the young people of Europe to play a fuller part as European citizens; iii) to identify and disseminate best practise in education and training for citizenship, in order to filter out the best means of learning contemporary elements of European citizenship' (European Commission, 1997, p. 57).

The report notes that active citizenship demands the acquisition of cognitive and communicative competence through social and educational processes, assuming, although not detailing, how this can occur through vocational education. Conclusions from the Lisbon meeting of European Council in March 2000 reaffirmed even more strongly that 'lifelong learning is an essential policy for the development of citizenship, social cohesion and employment' (Lisbon European Council, 2000). The Commissions' *Memorandum on lifelong learning* detailed the favoured approaches to lifelong learning. It also adopted a broad notion of what cohesion meant in Europe. 'Employability is obviously a key outcome of successful learning, but social inclusion rests on more than having paid work. Learning opens the door to building a satisfying and productive life, quite apart from a person's employment status and prospects' (European Commission, 2000, p. 9).

Other international organisations have mentioned, with more or less stress, the role of education and training in social cohesion. Sometimes, like the European Commission, they remain unspecific about what VET in particular can contribute. The International Labour Organisation adopts, as one might expect, a broad conception of social cohesion and of the role that vocational education can

play in promoting it. Programmes of technical and vocational education should, it says, include both general and vocational subjects and cover a wide range of social topics related to the vocation being studied, including 'social and economic aspects of the field as a whole' (ILO, 2001). Programmes should aim at 'preparing the learner more generally for life and the world of work, bearing in mind that technical and vocational education is for economic, personal and social benefit'(ibid). Unesco also promotes a broad agenda. Its second international conference on technical and vocational education in Seoul in 1999 urged that technical and vocational education and training (TVET) address sustainable development: 'social and economic trends predicate the need for a new developmental paradigm which builds a culture of peace and environmentally sustainable development as its central features' (Unesco, 2004). OECD policies on lifelong learning (OECD, 1996) have generally placed more emphasis on economic competitiveness than social cohesion but this is not always the case. The OECD's *Beyond rhetoric: adult learning policies and practise* argues that adult learning is equally a 'tool for achieving goals of economic development and social cohesion' (OECD, 2003, p. 8) 'At a macro level,' it argues 'equity and social cohesion, the inequity of market outcomes, the development of democratic values, and the improvement of skills to participate in the economy and labour market, are all stated as vital reasons for government participation in adult learning' (ibid, p. 70). Adult learning is only part of VET but the document provides some evidence of OECD concerns beyond economic growth.

1.3.2. Continuing policy differences

Policies and visions of international agencies generally advocate a social role for VET. However, the necessarily generalised – sometimes rather bland – language of their reports tends to mask the different policy perspectives of national governments and those advocated by academic commentators of different persuasions. Here we may return to the marked regional differences which persist in VET traditions noting the continuing

importance of Greinert's distinctions between the social model, the state model and the market model. However, we would say that although these models are exemplary as a method of categorising the education systems of most of continental Europe (particularly Germany and France) and England, there is not an exact correspondence between these models and the vocational education systems of other countries. In this section, we consider as well as Germany, France and England, the nature of the vocational education systems in Norway, Poland and Portugal. Although there is some relation between these education systems and the social, state and market models there are also important differences.

French VET continues to emphasise the primacy of school-based routes, the unambiguous location of VET in the national education system of institutions and diplomas, and the importance of marrying general and vocational education within vocational programmes. Despite attempts in recent years to revive the apprenticeship system, the school based route for VET, centred on the vocational *lycées*, dominates provision and is substantially integrated with the general education system through the location of the vocational baccalaureate within the overarching system of baccalaureate qualifications. Even the more craft-oriented CAP (*certificat d'aptitude professionnelle*) programmes, and the lower general vocational BEP (*brevet d'enseignement professionnel*) programmes, are located in the general education system and act as staging posts to higher qualifications. General education still occupies between a third and a half of the time spent by students on these courses and civic education is compulsory on all programmes, including the CAP. Promoting *la culture générale* remains a central aspect of vocational education. Arguably it has become dominant as vocational courses have become increasingly academic in the past two decades (Green et al., 1999; Mas and Werquin, 2005; Tanguy, 1991a and b). Vocational education is seen as being centrally about promoting French citizenship, defined, in

the French republican tradition, in a state-oriented and political fashion (Brubaker, 1992).

Initial vocational education in Germany and other German-speaking countries and regions, has placed an equal stress on the social role of vocational learning. However, the emphasis is more on developing civic values through professional socialisation. Being run along sectoral lines, and largely regulated through the joint actions of the social partners, the German dual system of apprenticeship tends to promote the professional values of the industry sector in which it is embedded (Brown et al., 2001; Crouch et al., 1999). Apprenticeship training is explicitly designed to develop in apprentices a *Beruf* (occupational) identity and an affinity with the professional values associated with it. According to Streeck, the concept of *Beruf* signifies 'a body of systematically related theoretical knowledge (*Wissen*) and a set of practical skills (*Können*), as well as the social identity of the person who has acquired these' (Streeck, 1996, p. 145). Broader civic values are also promoted by inculcating professional values, still, in a sense, in the way Kerschensteiner advocated. The (part-time) *Berufsschule* (vocational school) has a broad mission in dual system training including general education and occupational theory. Its terms of reference are drawn up by both the *Länder* Ministries and the BIBB. According to the general 1991 framework agreement for vocational schools the *Berufsschulen* have among their objectives to:

- (a) 'impart professional competence, specialised competence in conjunction with human and social capabilities';
- (b) 'develop occupational flexibility to cope with the changing demands of the working world and of society, as well as having regard to the growing together of Europe';
- (c) 'encourage preparedness for continuing and further professional training';
- (d) 'provide the ability and willingness to act responsibly in terms of the individual shaping of one's own life and in the public sphere' (1) (Brown et al., 2001).

(1) Translation by Jana Haerberlein with assistance from Caroline Steenman-Clark.

The German dual system has been under strain in several respects in the past two decades, not least as a result of unification. The growing needs of modern production for labour flexibility, multi-skilling and job mobility put in question the long established notion of *Beruf* and a singular occupational identity. Apprentice programmes have consequently been reduced in number and made somewhat more generic in terms of the jobs for which they qualify apprentices (Green et al., 1999). There has also been more emphasis on generic or transversal skills. This has led to pressures to slim down the general education part of the training and for a new stress on competences as general skills. This can be seen in the widespread debates about key qualifications (*Schlüsselqualifikationen*). However, even here concern for the broader civic purposes of VET has not been entirely lost since key qualifications include a broad notion of social competences and thus can be clearly distinguished from the significantly narrower notions of core skills in Anglo-Saxon literature (Kämäräinen et al., 2002).

There is a relationship between the German system of vocational education and those of Nordic countries. They all support strong social partnerships grounded in a supportive social welfare model and they emphasise apprenticeships leading to employment routes. For young people, these have been historically constituted under youth guarantee systems where young people receive a promise of employment after training (Hummeluhr, 1997). In Finland, for example, there has been an emphasis on models of lifetime employment where vocational education is premised on the willingness of social partners to provide work (Kivinen and Rinne, 1998). German and Nordic models emphasise the role of education in enhancing social cohesion. In Nordic countries, vocational education is part of the socialisation of what might be called the citizen worker (Hernes, 1988) with a strong emphasis on participation in social democratic institutions in and outside the workplace. Unlike the British model, the state is responsible for funding and regulating vocational education. However, collective, national agreements for vocational education have more recently been

superseded by local agreements suggesting some need for flexibility with regard to regional labour-market conditions. This is not to say that the Nordic countries are identical in terms of vocational education systems. Denmark has a more traditional system of apprenticeship than other Nordic countries (with parallels to the German system) whereas Finland introduced a competence based model of vocational education (with similarities to the English qualification system) (Lankinen, 1999).

Since 1994, vocational education in Norway has been based largely on the 2+2 model with two years in vocational education followed by two years in a training enterprise. This form of study was promoted as part of the package of education reforms known as Reform 94 (updated by a further set of education reforms known as Reform 97). Reform 94 gave young people the right to three years of upper-secondary education, specifically promoting vocational pathways around 30 subject areas (*Studieretninger*). At the tertiary level, many vocational qualifications have been adapted along the lines of general higher education accredited at Bachelor, Masters and PhD levels.

However, the curriculum characteristics of the vocational system of education in Norway are not necessarily as important as the system characteristics. In common with other Nordic systems of education, there is close cooperation between providers of vocational education (particularly schools) and other social partners. The *Rådet for fagopplæring* (National council for vocational training) which has democratic representation by various social partners advises the government in matters such as the demand for vocational skills and participation in reforms concerning vocational education (Shapiro, 2004). Like the German system of vocational education, globalisation and changes in labour-market structures have placed the Norwegian system of vocational education under strain. However, the statutory nature of instruments to maintain participation in vocational education and the importance of social partnerships in continuing these instruments has been maintained.

In comparison to the Nordic and Germanic models, in Britain and, to a lesser extent, in

other English-speaking countries, a quite different conception of the role of vocational educational and socialisation has developed. As we saw earlier, vocational education in Britain has historically always been somewhat marginalised from mainstream education, often marooned in a rather indeterminate place between education and work. General education never occupied a central place in vocational training programmes and vocational qualifications, which were always separate from general qualifications and awarded by independent bodies. They never required proficiency in any but the most basic of general educational skills. Developments since the 1970s in Britain have in many ways served to exacerbate this singularity.

During the 1980s a widespread reform of vocational education, including of the apprenticeship system, was undertaken by the then Conservative government through its agency the Manpower Services Commission. The reforms had a number of objectives, including to rationalise the so called 'jungle of vocational qualifications' (de Ville, 1986) offered by private awarding bodies and to ensure that vocational training better served the needs of employers. In pursuit of the latter objective the government sought to wrest control of apprenticeship from trades unions by abolishing the time-served criteria for qualification and replace them with new standards for skills required in different occupations developed through scientific skills profiling and linked to performance rather than mode or length of study. The result was the new framework of national vocational qualifications based on competences (Green, 1998). This process, in effect, severed the link between vocational training and professional socialisation, at least in as much as this was understood by employee organisations, and took the training system off in a direction quite different from that typified by social partner-based systems in German-speaking countries. Whereas the old apprenticeships in the UK had involved a considerable emphasis on professional socialisation, as in Germany, through learning the customs and mores of the occupation in question, now all such elements, deemed to

identify too much with trade union interests, were removed from training programmes. The objective was no longer to develop occupational identities and the values associated with them but rather to promote competences which were clinically isolated from any of the old labourist values and interests.

Vocational education in Britain, marginalised as it was from mainstream education, had always embodied a rather limited conception of general education. With the development of the competence paradigm a yet more impoverished conception of general learning was put in place. In line with the highly utilitarian and behaviourist underpinning philosophy of the competence movement, general education subjects were deemed not relevant to VET for work and were removed from the programmes. At the same time it was recognised that employers did require some generic or transferable skills from new employees, above all the basic skills of literacy, numeracy, listening to instructions, punctuality and so on. Using the now dominant methodology of occupational skills profiling a set of core competences or core skills were developed to be incorporated in all VET programmes. The national vocational qualification framework thus adopted core skills units in: communications; problem-solving; improving own learning and performance; working with others, application of number; and IT. When the broad general national vocational qualifications were introduced in 1992 they likewise included compulsory units in: communication; application of number and IT, and as additional and desirable outcomes: foreign language; problem solving and personal skills (working with others and improving learning performance). These core skills – later re-labelled key skills – acted as a surrogate for general education in vocational education (Green, 1998). In practise they represented a decisive move away from any broader notion of the social function of VET. Professional socialisation was replaced by competence acquisition.

The model of vocational education in Britain would appear, at first sight, to make few claims as regards the socialising function of VET since the social and values dimensions have been

largely removed from the curriculum. It is hard to see how, in this model, VET can contribute towards citizenship and social cohesion. However, in recent years, Labour governments have developed a different conception of the social role of VET which relates not so much to values and socialisation but to the idea of employability and its putative role in enhancing social inclusion.

The concept of employability was used widely in human resource management circles in the 1990s to replace the notion of employment security which was deemed to be increasingly obsolete in an era when few employees would be lucky enough to experience it (Hillage and Pollard, 1998). The idea of employability recognised the increasingly uncertain nature of employment and the need for individuals to be prepared for successive job changes. In doing so it transferred responsibility for maintaining employment from the employer to the employee and job-seeker. It was up to individuals now to maintain their ability to find and keep employment by continually updating their skills and presenting their employment credentials effectively to employers. This could also imply a greater facility in managing individuals' careers autonomously and effectively. Hillage and Pollard, in a report for Government in 1998, wrote that 'employability is the capacity to move self-sufficiently within the labour market to realise potential through sustainable employment' (Hillage and Pollard, 1998).

After coming into government in 1997, New Labour rapidly adopted the employability agenda as the mainstay of its policies on VET. It has become a central component of government thinking on social inclusion. Employment, it is argued, is the primary means to integrate people into the mainstream of society. Employment helps individuals avoid the social risks are associated with unemployment and social exclusion, including those of poverty, illiteracy, ill-health, social marginalisation, crime and lack of self esteem. Employability is the key to finding and keeping work, and thus the main objective of VET. In this sense, then, VET policy in Britain still claims to have a social function – that of promoting social inclusion which is held

to be central to active citizenship, community renew and thus, indirectly, to social cohesion.

In the above discussion, we have been able to exemplify the social, state and market models with examples of existing education systems. However, it is worth remarking that not all vocational education systems in Europe can be simply allocated to these models. There are education systems which may be described as hybrid or transitional models for example. Two countries considered in this report – Poland and Portugal – may be regarded as not fitting comfortably with the cases described above. In Section 2 of this report (on social exclusion) we consider some similarities between the systems of vocational education in Poland and Portugal. In particular, these systems emphasise academic education and rarely use VET to target issues of social exclusion (which are culturally not given the same level of priority as in other European economies). However, in terms of what might be called the integration functions of vocational education there are substantive differences.

Vocational education in Portugal is often considered to form part of a southern model of VET with parallels drawn between the Portuguese system and those of other countries (in particular Spain and Italy). These countries have historically low participation in VET and a weak link between systems of VET and the labour-market. In Italy, this may be due to an emphasis on a classical system of education which favours academic education as a route into high status occupation. In Portugal, however, this is more likely to be connected to the preponderance of locally based and informal routes into the labour market. There is no strong, socially partnered apprenticeship system in Portugal and firms are particularly resistant to expenditure on worker training (Leney, 2004, p. 11). However, vocational schools provide a growing function in the socialisation of technical workers and a new form of vocational school (*escolas profissionais*) is designed to integrate academic and vocational education (Meijer, 1993; Da Cunha, 1993, p. 219). These schools do not necessarily require students to attend a training centre or work place, rather the curriculum will be orientated towards

vocational and technical subjects – 30-40 % in the pre-vocational stages (ages 13 to 15), rising to 50 % in the later stages (1-3 years). These arrangements also encourage public-private partnerships (rather than social partnerships – a substantive, rather than linguistic distinction. It is envisaged, for example, that the vocational schools should eventually become self-financing) between employers and education providers (Meijer, 1993, p. 20). However, it would be a mistake to consider that Portugal has a market approach to vocational education and integration. The Portuguese education system (including vocational education), at least following the reforms of 1974, was relatively democratic (even Frierean⁽²⁾ in some respects) in terms of involving teachers and parents in decision-making in schools. Despite democratic tendencies and integrating vocational/academic schooling there is still high demand for general education and for retaining the academic emphasis of elite schooling. There are, therefore, important parallels between French and Portuguese models of education (Da Cunha, 1993).

The classification of the vocational education system in Poland is also difficult to depict as an ideal type using the categories of social, state and market models. Perhaps best described as a 'transitional' model of vocational education, there are clear historical reasons to consider that there was formally an extraordinary level of integration between vocational education, work and forms of citizenship. This was under the forms of socialism which existed in the central-European countries in the 20th century. While not romanticising this form of vocational education, it proposed a unique form of vocational socialisation. In these centrally planned economies, polytechnical education was designed '[...] to achieve all round development of the pupil's personality, to inculcate in him the materialist outlook and communist morality and to prepare him to play an active part in building a society striving for world peace and friendship between all nations' (Shatkin, 1963, p. 17). In practice, forms of polytechnical education stressing integration of

theory and work through practical interaction with socialist enterprises were most established in the former Soviet Union (Shapovalenko, 1963) and the German Democratic Republic (Kohn and Postler, 1975), but they also had a major effect on institutional and curriculum design in Poland (Anweiler, 1975). It is important not to underestimate the legacy of polytechnical education in the transitional VET system of Poland. There are obvious similarities between polytechnical education and integration between vocational education, work and citizenship proposed by Kerschensteiner and Dewey. They and polytechnical education are similarly modernist in scope in the application of science to the social. Indeed, Lewis (1998) has argued that the legacy of polytechnical education (in the former centrally planned States) and Dewey's (in the US) ideals have influenced the nature of the new vocationalism. This emphasises education about work (its nature and relationship with human activity such as democratic participation) rather than education for particular occupations. Therefore, the foundations of what might be now considered to be a market system of VET were statist. This has had an impact on VET in the newly marketised system of education in Poland. For example, Poland continues to experience high enrolments in VET at ISCED 3 (Cedefop, Strietska-Ilina, 2001, p. 222). It is not necessarily apt to describe Poland as a market system of VET (as in England). It is a transitional system which is undergoing a double transformation (Strietska-Ilina, 2001, p. 223) in terms both of marketisation of VET and shifting expectations of VET, the labour market and citizenship.

There are, therefore, multiple visions of social cohesion and the role of vocational education in promoting it. These can be characterised as social, market or state systems but complex histories involving states, market and civil society (as in Poland and Portugal) mean that it is sometimes complex to allocate countries to particular models. In Portugal, for example, there are some similarities with the French (social) model, but also elements of what might be called a southern European system. In

(2) According to Da Cunha, Portuguese education involved the democratic involvement of learners and study techniques (such as study circles) in adult learning derived from the work of Friere.

Poland, the transition to a marketised system of VET has been inflected by the legacy of polytechnical education under socialism. This does not mean that the social, market and state models are redundant methods of describing the relationship between VET and social cohesion. Rather we should recognise that there is movement within systems and that historical legacies do not automatically disappear with policy borrowing.

An obvious generalisation from the above analysis is that the vision of social cohesion, and the role of vocational education in promoting it in England, clearly differs substantially from that embodied in visions proffered by the European Commission and in the social and state models of VET which Greinert identifies in continental Europe. In contrast to the latter, vocational education is not seen as having a socialisation mission, in terms of professional socialisation of citizen formation. Nor is it particularly concerned with the nature of work relations, the quality of

working life or the identity of the worker. Its central claim is about the potential of vocational training to enhance employability and enhance social inclusion in a very limited form. Critics of the employability model point out, as they do in relation to market economies generally, that they show no concern with low pay, work and environmental quality, or income equality, and as such is a very impoverished conception of social cohesion. Critics of the social and state models say that these fail to reduce unemployment and promote social solidarity and income equality among the waged at the cost of exclusion of the unemployed. The question of which model most effectively enhances social cohesion remains at the heart of contemporary debates about the future models of the European knowledge economy. In this report we draw on the historical and contemporary themes discussed in this section to address this very question with regard to VET.

2. Social exclusion and VET

2.1. Defining social exclusion

As we have shown in our discussion of the role of VET in socialisation (Section 1), there are different national models of VET – this is also true for conceptions of exclusion. Social exclusion has come to mean different things in different political and national contexts and it is useful to track the concept back to its origins. As the discussion in our first section indicates, the objectives of VET are broader than a particularly Anglo-Saxon emphasis on employment and there are various national models of VET and cohesion/inclusion. Extending the concept of the social beyond this employment emphasis, Silver (1994) traced the historical development of the discourse of social exclusion in terms of its association with paradigms of social solidarity. She attributed the first use of the term to René Lenoir (1974), Secretary of State in the Chirac government. Lenoir estimated that around a 10th of the French population were socially excluded and categorised them as ‘[...] the mentally and physically handicapped, suicidal people, aged invalids, abused people, drug addicts, delinquents, single parents, multi-problem households, marginal asocial persons’ (Silver, 1994, p. 532). These objective dimensions of social exclusion were complemented by subjective dimensions of exclusion. This mix of subjective and objective dimensions of exclusion makes it a multi-faceted and highly contextualised (and contentious) variable. Social exclusion is multi-faceted in that individuals may be considered excluded in terms of many social aspects including wealth, income, cultural resources and political participation. It is contextual in that social exclusion may operate in various fields so that individuals who are socially excluded in one particular context, or field, are not in others. This has led to criticisms by some authors that social exclusion refers to a subjective and field specific state which

has no conceptual purchase on the reality and persistence of material poverty.

To account for these differences across societies, Silver (1994) describes social exclusion as a polysemic variable which has different meanings in various political cultures. In the context of French republicanism, exclusion is not only considered to be a social or economic phenomenon, but as a lack of social solidarity – hence it is intimately connected with discourses of social cohesion. Exclusion can be perceived to be a breakdown in the social bond between the individual and society (Silver, 1994, p. 541) and she refers to this as the solidarity paradigm of social exclusion. In the Anglo-American tradition, exclusion is primarily in the economic domain, or exists in one of many independent social spheres (economic exclusion, social exclusion, cultural exclusion). Methodologically, this means that the Anglo-American tradition relies on definitions of social exclusion around multiple barriers and hardships in an individual’s life (Hills et al., 2002) although there are also liberal-communitarian strands of this thought which connect social exclusion to meso-level concepts such as social capital or community cohesion. Silver refers to the Anglo-American conception of social exclusion as the specialisation paradigm as it perceives social exclusion to result primarily from individual choices and the division of labour. Finally, Silver defines monopoly (perhaps better described as a hierarchical, or power, or corporatist) paradigms of social exclusion whereby certain social groups can collude to control access to labour market and other social positions. In this position, social cohesion and social exclusion are not necessarily in opposition. Exclusion is part of the maintenance of social order.

From this discussion, it can be seen that the concept of social inclusion is not necessarily equivalent to that of social cohesion. In some paradigms of social inclusion (the specialisation paradigm, the monopoly paradigm) social exclusion can co-exist with social cohesion. In

the specialisation paradigm, social exclusion is taken to result from individual preferences and, therefore, not something that necessarily threatens the stability of social order or collective value systems. Social exclusion is, therefore, seen to be as arising from perverse incentives, or moral failures, among the underclass. According to neo-liberal discourses of social cohesion (Murray, 1994) this underclass may, in extremis, threaten the security of the majority population but the simple application of market mechanisms (such as the reduction of welfare benefits) is sufficient to reduce this problem. Therefore, social exclusion is seen to arise not due to market mechanisms, but due to the insufficient application of market mechanisms in areas of social and moral life. In the monopoly paradigm of social exclusion, social exclusion may be believed to be an acceptable consequence of securing welfare for nationals or majority groups. In such circumstances, social exclusion may actually support a narrow and reactionary form of cohesion in that the socially excluded provide a political justification for maintenance of a corporatist system of welfare provision. It is only in the solidaristic paradigm of social inclusion that social exclusion is considered to be truly antithetical to social cohesion.

2.1.1. Social exclusion: implications for growth and cohesion

Social exclusion is thought to inhibit both social cohesion and economic growth. In terms of cohesion, social exclusion is associated with a range of social problems such as crime (Oberwittler, 2005), increased support for extremist parties (Preston et al., 2005) and urban riots (Olzak et al., 1996). In each of these studies, the authors are cautious to posit an inevitable relationship between social exclusion and lack of social cohesion. Temporal and spatial contexts are particularly important in understanding exclusion. For crime, Oberwittler (2005) uses a multi-level analysis of European crime data to conclude that although social exclusion leads to youth crime, in practice spatial contexts are important. The activity

patterns of youth (networks, activities, time use) in each neighbourhood need to be understood as there are major deviations between crime patterns between youth. Similarly, Preston et al. (2005) reveal a strong relationship between low levels of skill and support for extremist parties. However, it should be noted that degrees of support for extremist parties can change dramatically over the life course. Urban riots (Olzak et al., 1996), occurred in areas of social exclusion, but this was not always the case. It must also be noted that there is a danger of over-estimating the impact of social exclusion on social cohesion at the national level. These problems mainly impact upon community cohesion at the local level, rather than damaging the functioning of the nation state or national democracy (although in extremis this is the case). For example, recent riots in France and support for extremist parties in the UK (both 2005-06) were concentrated in specific localities where social exclusion is a problem. Therefore, social exclusion increases the risks of reduced cohesion although this may be at the community level rather than social (national) cohesion.

In terms of economic growth, there is not the same quality of evidence connecting social exclusion with growth as there is in terms of unemployment. In general, the literature shows a negative impact of unemployment on economic growth and there is no evidence that there are positive Schumpeterian creative-destruction effects associated with unemployment in terms of re-skilling after periods of unemployment (Fanati and Manfredi, 2003)⁽³⁾. There is other evidence that inequalities may be harmful for economic growth (Persson and Tabellini, 1993). In general, as much as social exclusion can be correlated with unemployment and inequalities, we may say that it is probably detrimental to economic growth. There is some evidence that social problems are associated with slower economic growth. According to Knack and Keefer (1997) and Woolcock (1998) lower levels of trust are associated with poor economic growth and economic performance. However, for the

(3) Slow economic growth obviously increases unemployment. However, long-term unemployment causes depreciation of skills and other forms of human capital with the possibility of impacts on long-term growth. Fanati and Manfredi support this position, denying that there are positive impacts of mass unemployment in terms of unemployed workers relocating or re-skilling.

most part these studies are correlational, rather than making strong inferences about causality (Cedefop, Descy and Tessaring, 2004, p. 210).

Therefore, although causality of the impact of social exclusion, lack of cohesion and economic growth is not always necessarily established, exclusion carries a risk of reduced cohesion (particularly at the level of the community if not necessarily national social cohesion) and (through mechanisms such as unemployment) reduced growth.

2.2. Modelling social exclusion

2.2.1. Justification for use of cluster analysis

Given that social exclusion is a multi-dimensional variable where individuals experience different types of exclusion in various fields we employ a '[...] typological approach, focusing on people rather than variables [...] researchers try to identify groups of people with similar personalities, focusing on the unique patterning of attribute within the person' (Kagan et al., 1998, p. 139). The particular strength of the typological (or person-centred) over a dimensional (or variable-centred approach) in this study is its ability to isolate groups of individuals with qualitatively distinct characteristics. In dimensional approaches, identifying individuals with extreme characteristics, such as the socially excluded would be a matter of examining overlapping distributions at a particular point (for example the bottom 5 % of individuals by economic and social capital). This approach has been identified as using the bimodal distribution (Bergman, 1998, p. 141). However, in a typological approach, similar individuals can be identified using a '[...] method for determining the similarity between individuals' personality profiles and for identifying distinct groupings of individuals' such as cluster analysis (ibid, p. 142). Each group thus established is considered to be qualitatively and substantively different from other groups rather than arbitrarily different as in variable-centred methods which depend on where the distribution(s) are cut. In particular, excluded groups are of emergent interest in psychology and sociology: 'the domination of

research in both personality and development by statistical treatments that rely on analysis of covariance and regression has frustrated a small group of investigators who have had the intuition that some samples were qualitatively different from the majority of their sample' (Kagan et al., 1998, p. 66). Exclusion is not just a matter of degree. There is also a qualitative difference between the types of exclusion experienced.

Individuals are grouped in this analysis of social exclusion is through cluster analysis (or pattern centred analysis). This method attempts to identify groups of people thought of as particular types. It can also be thought of as a technique of data reduction whereby respondents are grouped on the basis of their scores on various dimensions, including economic, cultural and social scales. Hence individuals are grouped in terms of their scores on variables and it is these groupings of individuals (rather than the variables themselves) which are the primary source for data analysis. Cluster analysis is increasingly being used in the analysis of political attitudes (Keulder and Spilker, 2002; Delhey, 1999; Moon et al., 2001) and other adult-developmental variables. It is also a recommended and innovative strategy for the current analysis of social exclusion when comparative data is available (SEU, 2005).

2.2.2. Dataset, variables and analysis

We use the latest sweep of the EVS for the European countries in this analysis and the closely related WVS for the US. We use the 1999-2000 sweep of the EVS and the 1999-2001 sweep of the WVS in the combined file issued by ICPSR (Inter-University Consortium for political and social research) and coordinated by Ronald Inglehart et al., 2004. The questions used on the WVS/EVS are compatible between countries and between the EVS/WVS. These surveys are intended to provide a basis for cross-cultural and cross-national comparison of attitudes, values and socioeconomic variables. The latest 1999-2000 sweep of the EVS and 1999-2001 sweep of WVS contains data for 60 countries. In this analysis we select five of these countries – Great Britain (being for the purposes of this survey England and

Wales) (N=1095), Norway (N=1127), Portugal (N=1000), Poland (N=1000) and the US (N=1200) to provide coverage of the variety of European lifelong learning systems and one non-European comparator. We weight the data in accordance with the guidelines provided by ICPSR. Our analysis is exploratory in not only of applying cluster analysis techniques to this data, but also of more generally exploring the potential of the WVS/EVS data in examining social exclusion.

To operationalise social exclusion we use two types of exclusion: economic exclusion (represented by income decile) and social capital (represented by memberships).

We use social capital as an indicator of social exclusion following the pioneering work of Granovetter (1973), who indicated the importance of social networks in job search, and Putnam (2001) who associated poor health, crime and lack of participation in democracy with low levels of social capital. Recent work on social exclusion (Hills et al., 2002) confirms the importance of social capital as an indicator of social exclusion. It can also be considered that economic and network exclusion are related in that resource limitations can lead to lack of participation in social groups and lack of social contacts can limit informal job search. In using social capital as an indicator of social exclusion we are working on developing social exclusion indicators in the ways suggested by key researchers in this area. For example, Robinson and Oppenheim (1998) suggest that social capital would be an essential part of developing a wider social exclusion indicator, 'in the future, we hope further indicators will be developed to assess disadvantage from poor housing, high crime environments, family breakdown, and social and political exclusion, omitted from this report as they are difficult to extract from existing data sources. It is essential to develop indicators of social capital at a later date. Initial suggestions include the proportion of population who are members of a civic organisation and the extent of social support networks' (Robinson and Oppenheim, 1998, p. ii).

The relevance of social capital as a factor in social exclusion has recently been made in EU regional policy. Social capital is seen as

relevant to the European Employment Strategy (EES) both through the importance of networks in finding employment and in terms of capacity building of institutional and community trust (Norris, 1998).

We use questions from the WVS/EVS on income deciles and on types of membership to allocate each individual in the samples to a level of economic and network resource. The question on income asks the respondent to specify the income band in which they find themselves which are compatible with country income deciles. The question on social capital asks the respondent to specify whether they are a member of a particular association or not. Cluster analysis is then used to determine groups of excluded individuals (in each country we differentiate between those individuals who are most socially excluded and those who are social capital excluded). With reference to VET we then use logistic regression to consider whether VET and other types of education reduce the probability that an individual will be socially excluded.

One contentious point in our analysis is the lack of differentiation between forms of social capital. According to Putnam (2001) it is important not to over emphasise differences between forms of social capital in terms of associational memberships. The use made of an associational membership cannot automatically be read *a priori* from the membership type. For example, memberships of a church or membership of a sports group are equally likely to develop positive externalities associated with social capital. In terms of the WVS analysis presented here, the questions used to create the social capital variable were a summation of memberships of fifteen groups – church, cultural, union, national political party, local political party, human rights organisation, consumer organisation, professional association, youth, sports/recreation, women's, peace movement, health promotion, consumer groups and other groups. Following Putnam, we consider that it is not necessarily possible to rank these associations in terms of which are more likely to generate fewer risks of social exclusion. However, we accept that there might be inter-cultural differences in social capital that mean

certain types of memberships may be particularly important in combating social exclusion within particular national contexts. Pragmatically, though, there are as yet no quantitative indices for such ranking and significant analysis on the empirics of social capital use a quantitative, aggregated measure of social capital (Knack and Keefer, 1997). In addition, of all social outcomes in the WVS, social capital has the most complete data for the countries covered in this study.

2.2.3. Who are the socially excluded?

In our analysis we concentrate on social exclusion as an outcome category rather than one which is always inhabited by a particular group of individuals. Although some approaches to social exclusion focus on particular groups of individuals, intersections between individual areas of disadvantage mean that it is more appropriate to focus on outcomes. To illustrate this point, Table 1 shows the proportions of individuals in 'socially excluded' (and 'not socially excluded') groups who fall into various outcome categories, these being low income (household earnings less than 20 % of mean country income), the poorest social capital category (no memberships), and those with incomplete secondary education, interest in politics ⁽⁴⁾ and self-reported 'poor health' ⁽⁵⁾.

There are two things that are apparent from Table 1. First, there is a wide inter-country variation both between proportions in each category and differences in the proportions in each category between 'excluded' and 'non-excluded' groups. For instance, in England and Wales and Norway only a small proportion of households fall into the lowest income category. However, in Norway the discrepancy between workless and working households falling into the lowest income category is very small (in fact, from EVS it appears that there is a marginally greater proportion of working households in this category) whereas in Poland the discrepancy is far larger. In Poland, 24 % of workless households are in the lowest income category compared to 10 % of working households. Naturally, this could be connected to the difference in welfare regimes between

Norway and Poland. Second, falling into a 'socially excluded' category is not always an indicator of extreme poverty, network exclusion and educational exclusion. Although we have not mapped cumulative exclusion in Table 1, there is a fair proportion of individuals who might not be considered to be socially excluded (in a working household, in a dual parent family, non-immigrants) but face some forms of exclusion. For example, in the US although 9 % of immigrants are in the lowest income category, 5 % of non-immigrants and 2 % of working households are also in this category. Another example in terms of schooling would be that of England and Wales, where although 68 % of respondents in non-working households do not have recognisable levels of secondary graduation qualifications, 42 % of those in working households also lack such qualifications. As this analysis shows, an approach to social exclusion which focuses unduly on those who may (on the basis of measurable characteristics) be excluded (e.g. immigrants with low skills, the long-term unemployed) may neglect those who experience similar disadvantage but are often not considered as excluded in a similar manner (e.g. working, but low waged; the citizen excluded from democratic process; the dual parent household with poor collective skills). Therefore, indicators of social exclusion which stress descriptive categories (citizenship status, family structure, working patterns) rather than outcomes may not fully capture the dimensions of social exclusion.

In Table 1 we include two indicators – no interest in politics and (self reported) poor health – which we do not consider in the analysis of social exclusion in subsequent sections of the report. This is due to the absence of data for the countries studied on these measures of social exclusion and because the small number of categories in these measures makes cluster analysis difficult. However, these dimensions of social exclusion are also strongly related to education (Tables 2 and 3) and in future analysis of social exclusion these further categories could be employed.

(4) A proxy measure for the degree with which the respondent feels 'included' in the political system.

(5) For which data for only Norway and the US was available, but which provides a useful indicator of social exclusion.

Table 1: Proportions of individuals, by social category and income/network/educational exclusion

	%				
	Norway	Poland	Portugal	England and Wales	US
Income exclusion					
Workless households	8	24	27	4	9
Working households	11	10	2	1	2
Single parent households	N/A	25	22	18	N/A
Dual parent households	N/A	15	21	5	N/A
Immigrants	12	20	11	3	9
Non-immigrants	12	10	21	6	5
Social capital exclusion					
Workless households	45	83	78	77	14
Working households	37	76	76	66	11
Single parent households	N/A	72	80	78	N/A
Dual parent households	N/A	76	74	68	N/A
Immigrants	37	80	55	71	13
Non-immigrants	42	76	75	68	11
Incomplete secondary education					
Workless households	49	70	70	68	31
Working households	30	49	36	42	18
Single parent households	N/A	44	40	39	N/A
Dual parent households	N/A	56	53	42	N/A
Immigrants	27	60	10	37	8
Non-immigrants	30	56	53	43	20
No interest in politics					
Workless households	10	31	45	48	11
Working households	6	26	38	39	12
Single parent households	N/A	20	50	63	N/A
Dual parent households	N/A	26	35	34	N/A
Immigrants	7	0	33	29	9
Non-immigrants	7	27	36	37	11
Poor health					
Workless households	19	N/A	N/A	N/A	5
Working households	5	N/A	N/A	N/A	1
Single parent households	N/A	N/A	N/A	N/A	N/A
Dual parent households	N/A	N/A	N/A	N/A	N/A
Immigrants	10	N/A	N/A	N/A	2
Non-immigrants	5	N/A	N/A	N/A	1

Table 2: **Poor health, by qualification level**

	%	
	Norway	US
No qualifications	11	4
Incomplete secondary vocational (lower than ISCED3)	7	3
Complete secondary vocational (ISCED3)	5	2
Complete academic secondary and higher qualifications	3	3

Table 3: **No interest in politics, by qualification type**

	%				
	Norway	Poland	Portugal	England and Wales	US
No qualifications	12	44	53	50	17
Incomplete secondary vocational (lower than ISCED3)	12	23	43	NA	16
Complete secondary vocational (ISCED3)	7	9	34	35	16
Complete academic secondary and higher qualifications	3	16	23	27	8

For Tables 1, 2 and 3: Great Britain (N=1095), Norway (N=1,127), Portugal (N=1000), Poland (N=1000), the US (N=1200). All data extracted from WVS/EVS. N/A indicates insufficient observations to perform a calculation.

2.2.4. Results of cluster analysis and logistic regression

2.2.4.1. Social exclusion: which groups exist in which countries?

We have conducted cluster analysis for five countries: Norway, Poland, Portugal, Great Britain and the US (as an outside of EU comparator). For all countries we conducted the cluster analysis along two axis, networks ⁽⁶⁾ and relative income ⁽⁷⁾. We used Duda/Hart stopping rules to determine the optimum number of clusters for each country which we discovered to be 9 (in the case of Portugal) to 15 (in the case of the US).

Figure 1 shows the cluster analysis conducted in England. Categories 1-11 represent groups of individuals which the cluster analysis identified as discrete groups. Each dot in the analysis

represents at least one individual. Individuals in group 4 represent a particularly socially excluded category in terms of low incomes and a small social network. However, there are other groups which have a higher income but similar network exclusion. For example, groups 5 and 6 would perhaps not be considered excluded in terms of income, but possess poor social networks. In England, network exclusion and low incomes are not always connected. For example, at the highest end of the income spectrum are a group of individuals (group 8) who are not particularly well networked (although this may represent self-exclusion, or social closure, rather than social exclusion). There is also a disparate group of individuals with relatively high incomes and high levels of social networking (group 11).

(6) A scale representing number of memberships running from 0 to 15 for all countries except Norway where the scale ran from 0 to 9.

(7) In deciles for all countries except Portugal and Norway. For Portugal the scale ran from lowest/middle/highest income. For Norway, we did not have accurate data on incomes so we constructed a scale of financial precariousness based on the relation between income and debt in the last year from least stable to most with four categories.

Figure 1: Cluster analysis of social exclusion for England

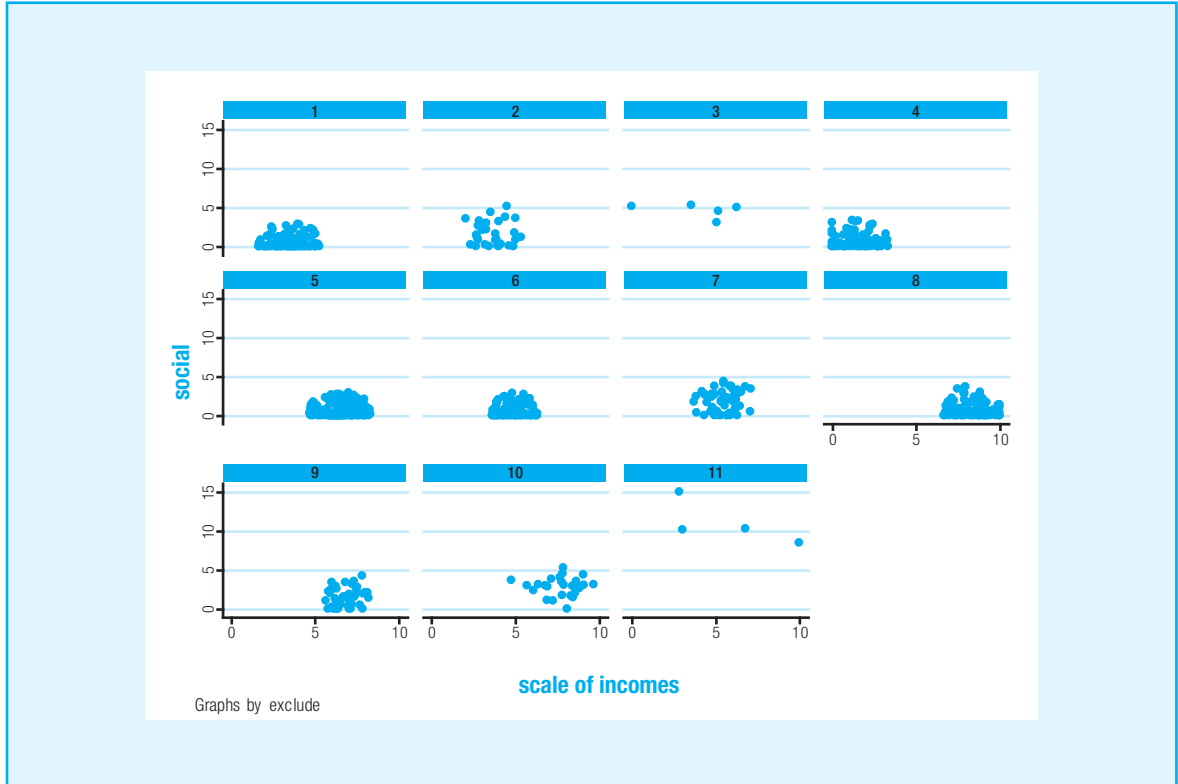
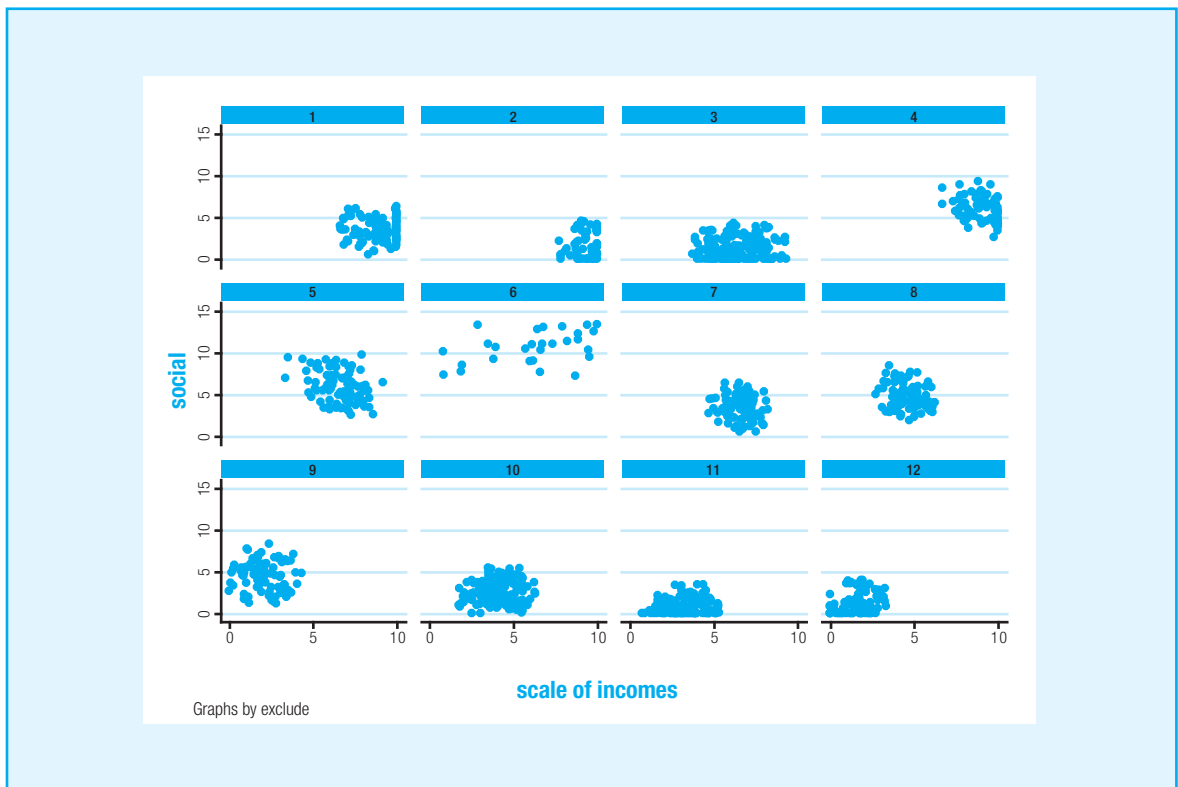


Figure 2: Cluster analysis of social exclusion for the US



For purposes of comparison, Figure 2 shows the result of the cluster analysis for the US. Unlike EU Member States in the analysis (including Great Britain) the US sample has higher levels of social capital. As can be seen from the cluster analysis, even those groups with relatively low incomes can have reasonably high levels of social capital. For example, group 9 has a wider dispersion of social capital levels than similar groups in the European sample countries. This shows the markedly different dynamics of social capital in exclusion in the US. There are other differences in patterns of social exclusion in countries as discussed in Section 2.3.4.2. We can use these different patterns of exclusion in logistic regression analysis to ascertain whether vocational qualifications act as a protective factor (Section 2.3.5).

The Annex provides figures for each country showing the results of the cluster analysis discussed in Section 2.3.4.2. In addition, we have identified particular groups from the cluster analysis as ‘most excluded’ and ‘excluded’ (in Table 10 in the Annex, the most excluded groups are indicated in bold, and the excluded in italics). ‘Most excluded’ groups are those where there is significant economic and network exclusion whereas ‘excluded’ groups experience network exclusion. For example, in Figure 1 for England, individuals falling into group 4 are most excluded, whereas those in groups 1, 5 and 6 are network excluded on a wider social network dimension of exclusion. Notes to Table 20 in the Annex explain the rationale for allocating groups to these categories.

2.2.4.2. *Patterns of exclusion in each country: similarities and differences*

The figures and Table 10 of the Annex show differences between the patterns of social exclusion in each country. Here we describe differences in the patterns of social exclusion, or what may be considered the dynamics of social exclusion in terms of the relationship between network and economic exclusion.

In Norway, one group (group 11) can be considered as the most excluded in terms of income and social networks. However, there are two groups which are formally socially excluded in having no formal social network (groups 1

and 2) and one group where there is low income with some form of social network (group 12). Similarly, in Poland there is one group which is most socially excluded in terms of low income and no formal network (group 5) and a number of groups with no formal networks and a variety of incomes (groups 2, 3, 6, 8 and 9). Therefore, the dynamics of social exclusion are similar in Norway and Poland with one group which is most socially excluded, but several groups which although socially excluded in terms of civil society, are not so excluded in terms of income.

However, in Portugal there is a difference in mapping social exclusion. There are groups with a range of income and no formal networks (groups 1, 3 and 4) but no group with simultaneously low income and low social networks. Members of the group with the lowest income, group 5, have on average a greater social network than the network excluded groups with higher incomes. This is similar to England where members of the group with the lowest income (group 4) have on average a greater social network than the network excluded groups (groups 1, 5 and 6). This difference between income and network excluded groups is much clearer in the US where members of the lowest income group (group 12) have a reasonable social network. The group which has a low social network has a moderate income (group 11).

Therefore, we can identify two major typological groups of social exclusion from these country studies. First, countries where there is a group of socially excluded individuals both in terms of networks and income (Norway and Poland) and several network-poor but not income-poor individuals. Second, countries where income-poor individuals participate in social networks and where there are simultaneously richer groups who do not participate extensively (Great Britain and Portugal) – the extreme case of which is the US. This may be due to the generally higher levels of social capital existing in the US as commented upon by Norris (1998) among others. This suggests that the dynamics of social exclusion may be different in the US where lack of welfare provision may make it necessary for less well off individuals to maintain social networks.

The different dynamics of social capital and income exclusion in these countries reflects their different histories including the degree to which different countries valorise civic engagement. Obviously, developing this analysis would have to involve a qualitative appreciation of the relative importance of cultural factors in social exclusion. However, the benefit of using cluster analysis is that the groups created are specific to the countries involved. Hence rather than defining social exclusion in terms of levels of income or social capital (or other characteristics), the groups generated are based on the patterning of data within each country.

2.2.5. Vocational qualifications and social exclusion

In this section we consider whether vocational qualifications and other types of advantage may prevent individuals from being socially excluded using the categories derived from the cluster analysis (Section 2.2.4). We conduct two forms of analysis using the technique of logistic regression. First, we examine whether the highest level of qualification obtained by an individual prevents the individual from being socially excluded using what we consider to be the most excluded category from the cluster analysis (the clusters selected are indicated in bold in Table 10 in the Annex and

explained in the notes following this table). Second, we examine whether the highest level of qualification obtained by an individual (and other factors) prevent the individual from being socially excluded on the basis of what may additionally be considered to be categories of low social capital (the clusters selected are indicated in italics in Table 10 in the Annex). The analysis below provides odds ratios for each country with the comparison category being those individuals with no qualifications. Where possible we use controls for other qualification levels or characteristics of the household, although the conditions required for estimation in terms of sample size did not always make this possible.

As can be seen in Table 4, in Portugal vocational qualifications (completed or not) act as a protective factor against being in the most socially excluded category (significant at the 1 % level). The odds of an individual with incomplete secondary vocational qualifications falling into this category are 0.2 and with complete secondary qualifications 0.17. In the US, although vocational qualifications do not seem to be a protective factor, academic secondary and higher qualifications do where individuals have odds of 0.3 of being in the most excluded category.

Table 4: Odds ratios for falling in most socially excluded category

	Norway	Poland	Portugal	England
Incomplete secondary vocational (lower than ISCED 3)				
	0.913	2.149	0.225	0.494
	-0.15	-0.62	(3.20)**	-1.49
Complete secondary vocational (ISCED 3)				
	0.587	.	0.177	0.863
	-1.02	.	(2.32)	-0.51*
Academic secondary and higher qualifications				
	1.27	3.602	.	0.31 .
	-0.64	-1.17	.	(4.76)**
Observations				
	1121	1060	924	1196

Absolute value of z statistics in parentheses

* significant at 5 %; ** significant at 1 %

Note: Analysis was not completely possible for Great Britain due to missing values

Table 5 presents odds ratios for falling in the most excluded or excluded category which is not necessarily a category with the lowest income, but also incorporates elements of network exclusion (these categories are explained in the Annex). As can be seen in Table 5, this means that educational qualifications do not always act as a protective factor against broadly defined forms of social exclusion in terms of exclusion from civil society. In Portugal, for example, those with vocational qualifications are more likely to be excluded in these terms than those with lower levels of qualification whereas those with academic qualifications are less likely to be excluded. Those with incomplete secondary vocational qualifications or even complete secondary vocational qualifications are more than twice as likely to be excluded in these terms as those who do not have these vocational qualifications. Taken together with the results in Table 4 this presents an interesting paradox in terms of the relationship between vocational

education and social exclusion in Portugal. That is, although vocational education may protect against the risks of falling in the most extreme socially excluded category in terms of exceptionally low income and social capital it is not protective against broader (social capital) forms of deficit. We also see that in Portugal, being a member of a household where an adult is in work reduces the odds of social exclusion. However, in Norway, vocational qualifications do act as a protective factor against broader forms of social exclusion. In the US vocational qualifications are not found to significantly to protect against falling into an excluded category although possessing academic qualifications (in the US) are protective factors. The results for Great Britain are difficult to interpret as it appears that being in a working household leads to low social capital. This could be an artefact for the low 'N' in the analysis of this result which may have biased the sample.

Table 5: **Odds ratios for falling in most excluded or 'low social capital' category**

	Norway	Poland	Portugal	England	US
Incomplete secondary vocational (lower than ISCED 3)					
	0.576 (2.31)*	1.098 -0.32	2.001 (2.14)*	.	0.898 -0.34
Complete secondary vocational (ISCED 3)					
	0.659 (2.25)*	1.838 -1.02	2.973 (2.38)*	1.113 -0.15	0.785 -1.05
Academic secondary and higher qualifications					
	0.447 (5.06)**	1.87 (2.31)*	0.545 (2.08)*	0.522 -1.51	0.602 (2.84)**
Working household					
	.	0.957 -0.19	0.412 (3.36)**	4.487 (3.70)**	
Not single parent household					
	.	1.501 -0.35	2.095 -0.97	.	
Observations					
	1119	467	482	220	1126

Absolute value of z statistics in parentheses

* significant at 5 %; ** significant at 1 %

This preliminary analysis of the WVS/EVS data obviously presents some interesting points. In particular, it does not reveal that for every country VET protects against social exclusion, defined broadly, and that there may even be country specific patterns. However, as an exploratory analysis there are caveats. First, the data is associational (cross-sectional) and in future analysis of this type it would be necessary to make use of longitudinal or panel datasets. Second, with richer datasets (perhaps with better indicators of social exclusion) the cluster analysis could be extended to encompass a wider set of categories. The development of indicators of social exclusion, beyond the economic, is at an early stage but in our analysis we have shown that it is possible to incorporate social indicators (although there may be future debate as to whether social capital, proxied by associational membership, is an appropriate indicator to use) and, if statistics on educational levels are available, that these can be used to assess whether VET or other educational qualifications may prevent exclusion.

2.3. Social exclusion and VET in five countries

As the above analysis has shown, social exclusion is a complex and multi-faceted phenomena and VET (or even employment) does not necessarily preclude individuals from social exclusion. To contextualise the above analysis, we consider how VET policies have been formulated to tackle social exclusion in the five countries considered. We pair England and the US in terms of marketised systems of VET and Poland and Portugal as sharing characteristics which may be considered to be transitional models of VET. We discuss Norway separately as having a Nordic model of VET and social exclusion. In our discussion we consider VET and social exclusion generally, as well as making reference to two particularly

socially excluded groups – immigrants and the disabled.

2.3.1. England and the US – marketised systems of VET, differences in dimensions of social exclusion

2.3.1.1. *England*

As discussed in Section 1.3.2 one of the primary policy motivations behind VET in the UK⁽⁸⁾ since the 1990s has been the desire to promote competitiveness and (since 1997) the articulation of a close relationship between the economic and social purposes of VET. Accordingly, the position of VET in the general education system has been promoted. According to Stanton and Bailey (2001) several initiatives are indicative of this move. For example, bringing together academic (A level) and general (GNVQ) qualifications under a single curriculum structure (Curriculum 2000) and creating a single funding body (the Learning and Skills Council) to fund of all post-16 provision. In general, the UK has pursued a policy of horizontal integration of VET (in terms of the integration of educational functions such as funding, provision, inspection) at the same age level while not particularly encouraging vertical integration (in terms of the integration of professional/vocational routes through a career trajectory). However, as we have commented earlier even the horizontal integration in VET is not as advanced in England as in other countries such as France. This leads Stanton and Bailey (2001) to consider that system is too strong a word to use for the English structure of VET, and that voluntarism may be a better way to describe the VET system. While the (2001) introduction of the Learning and Skills Council may encourage VET to address issues of social exclusion (focusing on employment), this is largely done through incentives rather than planning. This voluntarism can be evidenced by the modular nature of the vocational education system (there are very few equivalents to ‘licences to practice’ in the English VET

(8) In other parts of the UK, slightly different policies for VET have been followed. For example, in Scotland the Curriculum 2000 reforms did not take place as Scotland does not have a National Curriculum. However, the reform of the Scottish Highers system was similar to the reforms which took place in the rest of the UK. Other schemes referred to here such as modern apprenticeships apply across England, Scotland, Wales and Northern Ireland.

structure) which is dominated by competence based qualifications.

In terms of social exclusion, these output based approaches have led to a concentration on skills necessary for employment rather than (necessarily) relevant to other features of social exclusion. As Stanton and Bailey (2001) explain, the 1999 report *Bridging the gap*, by the government's social exclusion unit, called only for changes in certification, not for programme innovation in VET to tackle social exclusion. However, in more recent years Stanton and Bailey (2001) refer to three key developments in English VET since 2000 relevant to social exclusion.

First, the introduction of modern apprenticeships (MAs) in 1996 as a work based route leading to a recognised vocational qualification (either NVQ or GNVQ with embedded key skills – vocational competences designed to aid employability and/or workplace productivity). Modern apprenticeships have been criticised in terms of its uneven quality (with some sector modern apprenticeships equating to traditional apprentice provision and others very much less rigorous and leading to only low level skills). According to Fuller and Unwin (2003) modern apprenticeships indicate a move by government from earlier demand-led apprenticeship policies in England to supply-led policies (creating an entitlement to apprenticeships without necessarily the full time employment opportunities necessary to employ them). Fuller and Unwin criticise the approach taken to social inclusion as concentrating on the volume of skills created (in terms of meeting qualification aims) rather than on skill formation and the creation of long-term employment opportunities. In addition, the qualification to which the modern apprenticeships lead often do not meet the skill needs of employers.

Second, the introduction of vocationally orientated foundation degrees (in 2001) in higher education which are two year degrees providing a grounding in the vocational skills necessary for employment in a particular sector. These are mainly delivered in Higher Education Institutions (HEIs).

Third, the proposed introduction of a technical certificate to provide an over-arching

qualification certificate to cluster the various vocational competences and sub-qualifications acquired on a modern apprenticeship, for example.

However, these policy measures are aimed primarily at the 16-19 age group. As far as these policy measures have penetrated the post-19 age group in employment they have been to focus on the reliability of the measures of outcomes across sectors rather than the validity of the measures of vocational skill within a sector (Stanton and Bailey, 2001). As we argued in Section 1.3.2, this indicates the continued antipathy towards socialisation functions of VET in the English system.

Although the VET system in England has moved towards a marketised system in terms of course choice and route and a centrally planned one in terms of the regulation and organisation of qualifications/inspection routes for specific socially excluded groups, there is evidence of a bespoke and regionalised approach to reducing exclusion. This is partly based on a welfare model in the UK which sees the contracting out of services (including the provision of VET) as an increasingly important part of more general restructuring. This means that there are not necessarily coordinated policies in terms of the VET provision for 'socially excluded' groups such as immigrants, the disabled and low income households.

In terms of immigrants, there is emerging evidence that the impact of immigration on local labour markets has been small (Dustmann et al., 2006) on local wage rates and unemployment. According to the authors, there is even evidence of positive wage effects on the native population which plausibly means that immigrant groups may have skills currently not present or sufficient in the native population of the UK and/or possess additional entrepreneurial skills, creating endogenous sources of growth. In skill terms, therefore, immigrants to the UK may actually not be disadvantaged in terms of labour-market skills. Indeed, other evidence (Kempton, 2002) indicates that immigrants to England often have higher levels of qualification for their occupational position. However, immigrants may face some difficulties in entering the UK

labour market with an employment rate of 64 % compared to 75 % for natives. Given this more highly qualified (when compared to UK nationals), but heterogeneous, immigrant population, initiatives around training have mainly focused on local labour-market requirements or language training (Kempton, 2002).

In terms of disabled people, there are a number of 'bespoke' schemes designed to help with the employment related dimensions of social exclusion (access to work, new deal for disabled people). An evaluation of these training programmes in the new deal for disabled people (NDDP) (Pires et al., 2006) discussed their skill heterogeneity. As in the case of vocational programmes for immigrants this means there is not necessarily one type of programme of use to all clients. However, one finding in the NDDP evaluation was that VET providers occasionally acted as gatekeepers in terms of who gained access to the programme and the type of resources that they received. This led to an interesting paradox in that those in least need of the training programme (disabled people who had high levels of vocational skills) would self-exclude themselves from training in favour of using networked contacts/local information to find work. Those with low levels of skill would occasionally be excluded from training due to the demands of the providers of skills.

In summary, for England, social exclusion is tackled through local training markets with little direct employer intervention aside from in the setting of occupational standards. This has led to criticisms (Fuller and Unwin, 2003) that the reintroduction of an apprenticeship system through modern apprenticeships will not tackle even the employment dimensions of social exclusion. Participation of heterogeneous groups such as immigrants and disabled people in VET, is tackled through bespoke programmes of VET. However, there is evidence that the lack of universalism in provision may allow skills inequalities to increase. For example, in the recent evaluation of the NDDP there is evidence that participation is low due to its lack of relevance to disabled people with relatively high levels of skills and the inability of

the programme to deal with the requirements of those with very low level skills. It is worth noting that there is also some evidence of race inequality in VET in England with the proportion of skilled workers from ethnic minorities participating in apprenticeships and employment being worse than even that of the US (Penn, 1998).

2.3.1.2. *The United States*

The US faces similar issues to the UK in coordinating VET to tackle social exclusion, mainly connected with issues concerned with the separate funding of vocational/educational programmes by state and federal authorities. According to Finch (1997), although federal funding for vocational education programmes to tackle skill shortages had existed in the US since 1917, the implementation of the Carl D. Perkins *Vocational and applied technology education Act* of 1990 (Perkins II) was a significant piece of legislation that led to a national focus on VET for social exclusion. This act provides States with financial incentives for reskilling and up-skilling workers and encourages educational institutions to adopt VET programmes that are flexible in meeting the needs of various client groups. However, Finch (1997) considers that VET programmes at the local level are so heterogeneous that the ability of the vocational instructor/teacher is a significant component in the programmes ability to tackle social exclusion. The issue of variability in the delivery of VET was raised by Silverberg et al. (2004) in their report to Congress as part of the national assessment of vocational education (NAVE). The contribution considered that curriculum change would be unlikely to improve the quality of VET without significant improvements in teacher training.

As Penn (1998) explains, one of the purposes of VET and apprenticeships in the US (and to a lesser degree in Europe) has traditionally been social exclusion in terms of delineating occupations in terms of whiteness. In Roediger's (1991) *Wages of whiteness* the association between work, craft apprenticeships and the formation of white identity in America in the early part of the 19th century are made explicit. Roediger considers that white workers used craft

unions and skill formation to make etymological distinctions between 'white' work and that of slaves and free-blacks and create a cohesive, but exclusionary, homogenous white identity. For example, through apprenticeships, white skilled workers adopted the term mechanic to distinguish their work from slave and free-black artisans and the term boss to replace master or master mechanic to make a distinction between their work and that of other races. Although the European experience of whiteness is somewhat different to the American one, there are case studies which suggest that vocational skills and apprenticeships are powerful aspects of the formation of white working class identity. Therefore, the integrative potential of VET in terms of the formation of a vocational identity and in social exclusion in the US must be counter-posed with the, albeit moderate, role of VET in the formation and consolidation of racialised and class identities which may be exclusionary. However, this pattern has recently changed and Penn (1998) examines the ways in which patterns of apprenticeship and employment have differed according to ethnicity and immigration status. For those of Hispanic and Black ethnicity in the US, there has been an increase in employment in the areas of electricians, tool and die makers, and sheet metal workers⁽⁹⁾. Unlike in the UK where modern apprenticeships have done little to alter the ethnic balance of the workforce, in the US affirmative action movements have managed to influence government and employers (rather than necessarily unions) to reduce employment related social exclusion among ethnic minorities in the US.

As in the case of general apprenticeships and VET in the US, the provision of VET for social inclusion for disabled people in the US is characterised by considerable heterogeneity both between and within the states. According to Fairweather and Shaver (1991) this has led to variable and skewed patterns of participation by disabled people in VET in the US. Although for higher level (degree level) vocational courses, participation rates are similar for the disabled

and non-disabled population, for lower level (2 year) vocational post-school programmes a significantly lower proportion of disabled people attend these institutions. Plausibly, this is the opposite situation to that faced in apprenticeships by ethnic minorities and immigrants in the US. In the case discussed above, strong affirmative action lobbies and weak industrial unions have simultaneously led to high (relative) apprenticeship rates for these groups. However, in the case of disabled people in the US, weaker civil rights movements and marketised provision of vocational education has not led to a response in terms of opening places on vocational courses for these groups at the lower level.

In conclusion, England and the US share similar characteristics in the ways in which VET is directed towards social exclusion – that is to emphasise employment, reskilling and labour market participation for all. However, the strongly marketised natures of the VET systems in these countries means that inequalities persist in VET, although these may differ between countries due to the operation of countervailing forces in civil society. In the American system, for example, the racial bias of apprenticeships is less than in England due to affirmative action and weaker industrial unions.

2.3.2. Poland and Portugal – transitional models of VET and exclusion?

Geographically and historically, Poland and Portugal are not countries that should necessarily be grouped together. In terms of education systems, Poland could be described as transitional in terms of movements from a centrally planned to a marketised system and Portugal is an example of a southern European emphasis on academic, rather than vocational, education – although this emphasis is changing. However, in the dynamics of VET and social exclusion there are striking similarities between the countries. Both are in a period of substantive transition, at least with regard to the role of VET in tackling social exclusion.

(9) However, there had been a decline in participation in typesetting and compository work which Penn (1998) suggests is now dominated by white female workers.

2.3.2.1. Poland

The transitional status of the economy and the vocational education system of Poland led in the 1990s to a rush towards a marketised system of education which largely favoured academic education at the expense of apprenticeship and VET. The system of VET remains centred on schools. According to Mykhnenko (2005) the Polish VET system has much in common with Mediterranean countries in its emphasis on secondary academic education rather than vocational or further professional training, as in Portugal as we will see. Unlike the Ukraine, which did not rapidly dismantle its polytechnical and higher level vocational programmes, Poland favoured a marketised model with state funding directed towards schools rather than post-school or training programmes. This led to wide disparities in the provision of vocational education in Poland. In particular, rural areas have been poorly served by vocational provision with poor quality of courses and high drop out rates. This has obvious implications for the socially excluded from poor families in these areas. It also has implications for provision to minority ethnic groups in Poland – Ukrainians, Belarusians, Germans and the most socially excluded group in Poland, Roma (although the numbers of Roma remaining in Poland are small). Although special schooling projects are aimed at these groups (particularly the Roma) there is little extra funding aimed at targeted VET (Czesana and Matouskava, 2004). As wage inequality has been increasing in Poland with privatisation being a contributory factor⁽¹⁰⁾.

However, it is important not to generalise about the marketisation of the Polish VET system. It is arguable whether some remnants of the command economy mean that for the urban population social exclusion is not as marked, at least in subjective terms, as in other countries. According to Roberts (2001) the assumption that high and persistent unemployment leads to social exclusion can not be generalised for all countries. Roberts (2001) contends that in Poland and other former transition countries the instability of labour markets (the

shortage of permanent stable jobs) and the lack of clearly defined status hierarchies in employment mean that neither economically or socially are the unemployed particularly socially excluded. Although this may be considered to be a romanticised picture of the realities of unemployment in Poland, Robert's arguments indicate that social exclusion (close to the earlier formulation of the concept) is relative to the in context which an individual finds themselves.

For disabled people in Poland, vocational education is primarily seen as a particular branch of general education associated with rehabilitation rather than necessarily towards integration to the labour market. Interestingly, for those who are in employment who lose their position according to a disability, there is a requirement for the employer not only to continue to provide the employee with continued work, but also to seek to maintain the social networks of the disabled person. However, in terms of people with a long-term disability there is a considerable disintegration of vocational pathways with the disabled working in sheltered workplaces. This might be seen as a continuation of the system in existence under Polish communism where disabled people were expected to set up their own separate vocational cooperatives. As is the case for low income groups and immigrants, vocational provision for the disabled is *laissez faire* and uncoordinated with little integration with actual labour markets (Ostrowska, 1994).

2.3.2.2. Portugal

Similarly to Poland, Portugal has low levels of participation in VET and training when compared to the EU average and much VET provision is employer based and not necessarily targeted at those outside of work who might be considered (on the basis of an Anglo-American definition of the term) to be socially excluded (Asplund, 2005). These low levels of participation in training mean that the returns to low-skilled, socially excluded individuals are particularly high in Portugal although this does not seem to have led to an increase in participation in VET

(10) As private employers in Poland tend to pay much lower wages than the EU average at the lower end of the scale, and relatively higher wages at the upper end of the scale) (Newell and Socha, 2005) this may have implications for social cohesion as well as social exclusion.

activities by this group (Budria and Pereira, 2005). As in the case of Poland, this suggests systemic barriers to participation in VET by the socially excluded. There was some support for this position in a recent report by Cedefop, Gomez Centeno and Sarmento (2001) which indicated that a lack of flexibility in VET provision and an over-dependence on the European Social Fund had impaired the ability of the VET system to cope with specific skill needs. Portugal has experienced relatively low rates of unemployment in recent years which means that the necessity for remedial VET programmes is lesser than in other EU Member States. This does not mean that social exclusion is not a problem in Portugal which faces one of the worst rates of poverty, inequality and health inequality in the EU. The nature of social exclusion in Portugal is much deeper than unemployment and in a review of social exclusion in Portugal (arguably more so than other EU Member States) (Santana, 2002) the heterogeneity of socially excluded groups including the elderly, poor families and drug addicts was discussed. According to Santana, these groups are poorly served by social welfare agencies (including education and training) as they are hard to target with traditional welfare models.

In integrating immigrants and minorities into the general education system, Portugal has performed better than other countries with respect to one particularly marginalised group: the Roma (CREA, 2004). Between 1993 and 1998, for example, the numbers of Roma children educated in Lisbon increased by over 25 %. However, in Portugal (and in other EU Member States – Portugal is not exceptional in this regard), the Roma are not well represented in VET and the labour-market skills that they possess are not necessarily valued.

In summary, Poland and Portugal face similar issues in terms of social exclusion and VET and also paradoxes for countries operating (arguably) outside of traditional Anglo-American models of social exclusion. First, in terms of relative poverty (compared to the EU average) they score highly on these indicators although labour-market disadvantage may (subjectively) be felt less harshly in Portugal and Poland compared to other EU Member States. In

both States, the nature of labour markets (low unemployment in Portugal, non-socially exclusive unemployment in Poland) means that social exclusion is not necessarily judged in terms of failure to gain employment. This means that it is difficult to introduce VET which is sufficiently responsive to unemployed clients needs – they may not judge themselves to be excluded and have sufficient faith in informal contacts and local labour markets to gain (low skilled) jobs. Second, in both countries there are groups of socially excluded individuals who are not part of the conventional labour market – but general education (rather than VET) is seen as a mechanism for re-socialisation (for example, the Roma in Portugal). Conversely, where VET exists for socially excluded groups its aim is in terms of rehabilitation rather than labour market participation (as with the disabled in Poland).

2.3.3. Norway: Nordic exceptionalism in VET and social inclusion

The Nordic countries are often judged to possess exceptional social welfare systems which mitigate against problems of social exclusion, as well as possessing a social partnership model, similar to the German system. Although this may be true to some extent in other welfare programmes, in terms of VET and social exclusion the picture is mixed. Although it is the case that for the socially excluded the welfare state in Norway provides an adequate safety net in terms of social necessities, re-integration into the labour market VET is not necessarily targeted at the most excluded. According to Cedefop, Heikkinen (2004) the historical routes of this can be located in the ways in which VET was separated from general education in the first half of the 20th century with a more legalistic method of control and regulation in social partnerships when compared to models in other European countries – notably Germany.

This separation of vocational from general education led to political moves to reintegrate vocational and general education on the grounds of social exclusion. However, such institutional moves, without support from social partners, may be insufficient to remedy issues of social exclusion. According to Mjelde

(1997) the apprenticeship system in Norway has suffered from an over-articulation with the formal education system which has not benefited the socially excluded. Reforms since 1994 have meant that apprentices follow a two year school programme and the lack of integration of these programmes with the world of work and a shortage of apprenticeship places in manual trades has meant that both the employment and wider social integration objectives of apprenticeships have been compromised. Part of the problem, as in the UK, is due to weak employer involvement in the apprenticeship system other than through vocational training councils (*Opplæringsråd*) (Shapiro, 2004). The demand for places in training has meant that groups such as immigrants who do not possess Norwegian language skills and the disabled are unlikely to gain training places (OECD, 1997a). However, more recently Payne's (2002) policy analysis of the early outcomes of these reforms suggests that, despite implementation problems, the model of apprenticeship reform adopted in Norway has been much more successful than other VET changes in Europe at that time.

With reference to the above, recent research by Hammer (2000) based on extensive samples from European unemployment surveys is that socially excluded families in Norway possess high levels of gender segregation in terms of women's participation in the labour market. This has a dual implication in terms of VET. First, it means that the lack of opportunities to enter manual careers after apprenticeships discussed by Mjelde (above) means that men in socially excluded households are not necessarily able to enter 'masculine' fields of employment. Second, that women in these households are (due to familial gender relations) unlikely to be able to gain labour-market status.

Provision for immigrants offered by the general education system is comprehensive in terms of access to upper-secondary and higher education. Although there is competition for apprenticeship places it is not considered that immigrants are discriminated against with regard to their ability to gain places (OECD, 1997a). However, in terms of the funding and nature of VET there may be problems.

First, training for immigrants usually consists of language and cultural courses which are part of gaining a residency permit. Second, the funding of VET means that even in the poorer parts of Oslo there is little incentive for municipalities to fund training. Despite these issues a recent evaluation of the outcomes of various training programmes aimed at immigrants in Norway (Schøne, 1996) such as ALMP (active labour market programmes) and training programmes with sponsors showed that immigrants attending such programmes had better outcomes than those who did not attend. In particular, the sponsor scheme where immigrant trainees gain a sponsor who provides them with a guide to the enterprise was thought to be particularly successful and a model for other countries' VET systems (OECD, 1997a).

Like Poland, the proportion of disabled people working in sheltered vocational environments is high in Norway. However, the purpose is reintegration into an open labour market and there are many other vocational programmes – such as employer/employee workshops aimed at more active reintegration. However, as with apprenticeships for other socially excluded groups opportunities were limited for disabled people to find a manual occupation (Aakvik and Dahl, 2006). Myklebust (2006) is particularly critical of the separation of individuals with disabilities in vocational education into separate vocational tracks. Using a longitudinal study of Norwegian young people with special needs he finds that integrating disabled people within mainstream VET makes them significantly more likely to obtain vocational qualifications.

2.3.4. Social exclusion and VET – which measures are effective?

The statistical and policy analysis above point to several considerations in modernising VET for social inclusion. The polysemic nature of social exclusion means that it has different significances across nation states. In particular, a model of social exclusion which concentrates on one variable (employment) is too narrow to incorporate the dimensions of social exclusion. As our analysis indicates, an approach to social cohesion which focuses on categories of

excluded groups (by unemployment, citizenship or family structure) may not capture dimensions of social exclusion which can be experienced by groups not necessarily categorised as marginalised. Another issue is that there are different dynamics of social exclusion in different countries where low social capital and economic exclusion operate relatively independent of each other (Norway, Poland, to some extent England) and other countries where 'income poor' groups may have extensive access to social networks (the US). There are implications here both for targeting individuals in terms of VET and the applicability of different VET measures between nation states (policy borrowing). In targeting groups for VET according to group characteristics, there is a risk of resource misallocation as there are individuals in 'non-excluded' groups (for example, working households with dual incomes) who would also form part of a 'socially excluded' category in terms of outcome. In terms of policy borrowing, different relationships between economic and network exclusion between countries suggests that policies that combat social capital deficits and income exclusion simultaneously may not be appropriate for countries in which these types of exclusion are not codeterminate. Our conclusions here are tentative and we would again remind the reader that this is exploratory research using a recently released dataset (WVS/EVS). Although key authors in the field (Robinson and Oppenheim, 1998) suggest that social capital is a key element of social exclusion (and we have demonstrated here that such an analysis is possible) this is still a matter for debate.

Our statistical analysis also indicates that it should not be assumed that VET can always combat social exclusion. Interestingly, in Portugal we found that although VET could protect against the extremes of social exclusion, those with vocational qualifications were more likely to find themselves on the periphery of economic/network exclusion. Again, there are caveats concerning the associational nature of our analysis. Coupled with our policy analysis, this indicates that VET has not necessarily been successful in addressing social exclusion

problems. However, particular factors for successful VET in addressing social exclusion can be determined.

First, where civil society is also integrative of the socially excluded, exclusion can be reduced. For example, in the US, affirmative action programmes (and weak industrial unions) have led to better equity in apprenticeship provision than might otherwise have been expected in this country. In addition, the sponsor system in Norway has been successful in bringing immigrant workers into the wider spheres of employment relations. Where the socially excluded have not been particularly well integrated in civil society (the disabled in Poland, recent immigrants into England, arguably disabled people in Norway), although there are mechanisms to tackle social exclusion these are largely focused on separate vocational tracks for the socially excluded which are not necessarily conducive to labour-market participation or other forms of citizenship. To extend the analysis of Cedefop, Vranken and Frans (2001) in the second research report, this means that VET governance structures need to be considered in order not only to integrate the social excluded into society, but also include them in the governance of VET policies that are targeted at them.

Second, across the five countries there has been a focus on employment and competences rather than necessarily the social functions of VET. This has been mainly true of England and the US, although elements of this approach are creeping into the VET systems of Norway and Poland with approaches stressing language or basic competences. As we have stated, the multi-dimensional nature of social exclusion means that these approaches are not necessarily conducive to wider forms of inclusion other than at the lower ends of the labour market.

Third, the polysemic nature of social exclusion means that, unemployment should not necessarily be considered to coincide directly with social exclusion (as in Poland, and to a lesser extent in Portugal). This might suggest that different cultural approaches are necessary in the design of VET to tackle social exclusion, taking into account different national interpretations of the term 'exclusion'.

3. Social cohesion, growth and VET

3.1. Defining social cohesion

According to Gough and Olofsson (1999) the trajectory of theories of social cohesion follows a common pattern in the social sciences – orthodoxy, fragmentation and rediscovery. The origins of the concept are located in 19th century sociology and political economy where a concern with industrialisation and the division of labour presented challenges to local and even national concepts of community and solidarity. A concern with fragmentation and integration was shared by seminal theorists such as Marx, Spencer and Durkheim although the expression of this fragmentation and its possible resolution differed between these authors. For Marx, the actions of capital and the contradictions between capital and labour were destroying older forms of social solidarity and forming a new set of capitalist social relations. While these relations would establish forms of equality based on property rights and the free sale of labour, ultimately (and for Marx imminently) a new form of communist sociability would supersede capitalism. The problem of social order would thereafter be of historical interest only. Spencer's argument was wholly opposed to that of Marx, considering that spontaneously arising social forces would reintegrate individuals into capitalist society and maintain social cohesion. These would be mechanisms in civil society which maintain mechanical forms of solidarity and 'invisible hand' mechanisms such as changing labour-market signals: however, we would probably question whether these spontaneous mechanisms are sufficient to maintain social cohesion. Although much contemporary thinking on social cohesion often takes Durkheim as the critical starting point, the issues raised by other 19th century theorists are still alive in debates on social cohesion and VET. For example, concerns with capitalism's impact on social cohesion in terms of globalisation – resulting in dislocation caused by unemployment, changing labour markets

and increased product competition on local/national markets.

However, there is no doubt that much contemporary thinking on social cohesion owes a particular debt to Durkheim. For example, Mortensen (1999) refers to disintegration as being the converse to social cohesion with a number of negative social outcomes such as discrimination, suppression of ideas and poor health. This one-dimensional view of social cohesion as a single disease (disintegration) with multiple symptoms is similar (even if it includes) to Durkheim's concept of anomie. Durkheim's concept of anomie is a single societal sickness, not amenable to direct observation but which displays itself in terms of various societal dysfunctions – the prime example being anomic suicides. Similarly, Mortensen's view of disintegration is that it is a societal property which displays itself in a variety of ways. However, significantly, Durkheim perceived professional and vocational forms of socialisation as one way in which individuals could be integrated into society. For Durkheim the state and intermediate professional associations had a key role in maintaining social cohesion. The legacy of Durkheim was particularly important in influencing later functionalist work on social cohesion by theorists such as Talcott Parsons.

Although functionalist theories of social cohesion were criticised both for their lack of social and class dynamics (by Marxists and others on the left) and essentialism (by post-modern and post-structuralists) there has more recently been a renewed interest in macrosocial cohesion. David Lockwood (1976, quoted in Mortensen 1999) is one of the key theorists in re-establishing social cohesion. Lockwood critiques value consensus theories of cohesion as neglecting considerations of power in determining value formation and conflict theories for underestimating the role of institutional arrangements in accommodating intense social conflict. Lockwood charted two dimensions of social cohesion: social and

system integration: ‘whereas the problem of social integration focuses upon the orderly or conflictual relationships between actors, the problem of system integration focuses on the orderly or conflictual relationships between the parts of a social system’ (Lockwood, 1992, p. 400 quoted in Mortensen, 1999).

Social actors are micro (individual) or group actors (such as capitalists, workers, social classes, ethnic groups, unions) whereas parts of a social system are relations or processes (such as means of production, bureaucracy or branching points in education systems). Interactions between social and system integration produce different forms of cohesion in a non-determinant fashion (Mortensen, 1999, p. 19). There is no necessary movement towards social cohesion or integration although social integration and system integration are related. For example, social classes may make use of particular social systems and processes to enhance their social position, thus exacerbating inequality with negative impacts on social cohesion – ‘[...] class conflict is now increasingly conducted *de haut en bas* through market mediated mechanisms that simultaneously undermine the likelihood of inter-class corporate struggles’ (Lockwood, 1999, p. 63). Lockwood’s perspective on the importance of both social and system integration has been hugely influential in latter writing on social cohesion. In particular, the importance of system integration at the macro level is shared by a number of contemporary sociologists including Giddens, Mouzelis and Habermas: ‘in the different conceptions of system and social integration there seems to be some unanimity that system integration should be seen as a matter of macro-structural principles, and also that modern (late) capitalist societies suffer from a structural contradiction between “privatised” economic principles and “socialised” politics, or, in other words, a contradiction between “market” and “state”’ (Mortensen, 1999, p. 33)

Although the authors that Mortensen (1999) refers to differ on their views on social integration, there is a repositioning of the problematic of

social integration at the macro level. In addition, there is an acknowledgement if not of inequality, of the problematic of marketised values for social cohesion. As our discussions (below) suggest inequality and marketisation may compromise social cohesion. Mayes (1995) describes the issue of social cohesion and social inequality in an EU context as being one of tolerability: ‘[...] it is the political tolerability of the levels of economic and social disparity that exist and are expected in the EU and of the measures that are in place to deal with them. It is thus both a dynamic and a subjective concept. As time passes, constant or even diminishing disparities may become less tolerable. Widening disparities may be tolerated if major efforts are being made to ease the process and absolute levels are rising’ (Mayes, 1995, p. 1)

In our previous discussion of social exclusion and vocational socialisation, the reciprocal role of VET in social and system integration is also apparent. In terms of social integration for individual actors VET may act as a conduit for the formation of social values conducive to democracy as well as those attitudes favourable to a modern industrial environment. As our discussion of vocational socialisation has shown, these functions of VET are well established in German speaking systems of vocational education. In other countries, these functions have been compromised by a move towards competence based and decentralised systems of VET (see the discussion of English and US systems of vocational education above). However, social actors are greater than the individual. This means that social partnership is particularly important in securing social integration. In the case of Norwegian VET (above) this social partnership was not found to be particularly strong with regard to the participation of employers in the apprenticeship system. In terms of system integration, the role of VET in securing social cohesion is not so strongly established. For example, in Poland and Portugal VET does not play a particularly strong role in the allocation of rewards in the labour market where academic qualifications seem to take priority.

3.2. Indicators of social cohesion

The convergence of recent theoretical and policy interests in the macro and in inequalities, markets and competitiveness leads Gough and Olofsson to remark that there has been a re-emergence of interest in social cohesion but that the concept has re-emerged as a 'more diverse and complex issue' (Gough and Olofsson, 1999, p. 3). These complexities are mainly due to changed economic, political and social circumstances. However, there is also a theoretical and empirical drive to conceptualise social cohesion as a multi-dimensional phenomena rather than operating along a single axis. For example, contemporary writers on social cohesion have become interested in particular manifestations of lack of social cohesion. Lockwood (1999) adopts a taxonomy of symptoms of social cohesion adapted from his earlier work on social integration (Lockwood, 1976). He distinguishes between two forms of social integration: civic corruption by macro-social (or mega-social: individuals with great economic and cultural influence) actors which threatens the functioning of the core institutional order and declines in social cohesion at the communal level which he refers to as social dissolution. Crime would be an example of an activity which encompasses both forms of social integration. Economic crimes, such as corporate fraud, would be an example of civic corruption whereas crimes against the person or theft would be classed as social dissolution.

Using a number of statistical measures for the UK on social dissolution, Lockwood argues that civil society and family kinship is thriving whereas crime rates and fear of crime are high. However, this is not considered to be a threat to social cohesion as most crimes are property related and committed by individuals, rather than organised groups of criminals. There is also little evidence that the UK and other EU Member States have been particularly susceptible to urban riots. For family disorganisation, findings are mixed, but there appears to be a strong class basis in terms of family outcomes. Therefore, in terms of social dissolution there is little evidence that the UK has particular

problems in terms of social cohesion. In terms of civic integration, although economic crime is not a significant problem there is evidence of erosion of social citizenship and rights. The picture is, therefore, conflicted and Lockwood comments that: '[...] selecting measures of macro-social integration presupposes a close and agreed definition of its basic constituents. On this front little headway has been made in comparison with work that has been done on indicators of "social exclusion". This is all the more remarkable since more than a century has passed since Durkheim identified the study of social solidarity as the central task of sociology' (Lockwood, 1999, p. 82).

At European level, there are several collected statistics on social cohesion. Formally, Eurostat collects data on income distribution, at-risk-poverty rates, early school leaving, unemployment rates and numbers of jobless households as structural indicators on social cohesion. Some of these indicators may be considered to be social exclusion rather than social cohesion indicators (such as at-risk-poverty-rates and unemployment rates) which might be indicative of individual circumstances, or temporary economic difficulties, rather than systemic social cohesion problems. The OECD, on the other hand, has recently started to compile a range of indicators of social cohesion which are more indicative of systemic problems in social cohesion (strikes, suicide, crime, juvenile crime, teenage births, and number of prisoners).

3.3. Social cohesion, growth and VET: models and evidence

The links between human capital formation and economic growth have been convincingly shown in various endogenous growth models (Lucas, 1988; Romer, 1990). However, according to Greiner et al. (2005) these models do not account empirically for the relationship between exponentially expanding human capital in these countries and relatively slow growth in more recent years. They argue that by using a time-

series, cross-country approach this paradox in the relationship between growth and education may be resolved. In doing so Greiner et al. identify that there is considerable heterogeneity in the forces of growth between countries and that not only technology and preference parameters may differ between countries but also their institutional structures. In terms of social cohesion, this means that generalisations concerning growth and social cohesion are not easily made. This point was supported by Leney et al. (2004) in terms of the ability of European countries to meet the challenge of the Lisbon goals for 2010. Leney et al. argue that the Nordic countries are the closest in terms of VET and associated institutions to have the potential to meet the Lisbon goals. However, there are other institutional arrangements that countries are making which must be read in the context of their specific systems. For example, Leney et al. argue that while in some countries (Norway, Lithuania) centralisation of the system of VET is being followed – and may be appropriate in each country context – in other countries centralisation, or at least greater degrees of social partnership, may be required given the persistence of informal labour-market structures and lack of coordination in sectors of VET.

More generally, the incompatibility of social cohesion and economic growth may be considered rather *passé* in current social theory and policy. Many international institutions such as the OECD and EU consider that there are models of mutual growth and social cohesion. According to these models, institutions and governance are particularly important in securing growth and social cohesion. The OECD (1997b) considered that there were three factors which were necessary in ensuring that growth and social cohesion were not exclusive. First, the persistence of normative traditions within a society that supported citizenship rights outside of the political domain. This factor was necessary so that societies possessed the political will to redistribute resources towards those who might be disadvantaged through the processes of economic growth. Second, the existence of cosmopolitan institutions and governance structures which would guard against the rise of ethnocentrism and autarky

as a response to globalisation to secure an insular form of cohesion. Finally, elite innovation in terms of the formation of new governance structures which would (seemingly paradoxically) lead to an increase in democratic participation in processes of growth. More recently for the OECD, Ritzen et al. (2000) discuss the importance of measures to reduce corruption hence increasing the possibility that growth may have a positive impact on social cohesion. EU policies also stress the importance of institutions and governance in securing growth and social cohesion. However, there is also an emphasis on the importance of welfare provision in securing access to social necessities given that the main barriers to social cohesion in the EU's future are considered to be unemployment, low income levels and an ageing population (which increases the possibility of inter-generational conflict over the distribution of resources). This is supported by earlier empirical work which suggests that income equality is important to growth (Perotti, 1996). The main factors influencing social cohesion are, therefore, societal values, institutions and inequalities. This means that social cohesion is not necessarily dependent on a society achieving rapid rates of economic growth.

According to Beauvais and Jenson (2002), in policy terms, it is not necessarily helpful to consider the relationship between social cohesion and growth as being over-determined by either one factor or the other. In terms of EU policy, they consider that social cohesion has become a framing concept rather than a potential driver (or consequence) of economic growth. That is, social cohesion (as part of social policy) frames and contextualises economic or employment policies, rather than determines them. However, for the purposes of research it is useful to know something about the causality between social cohesion and growth. The difficulties of operationalising social cohesion as a single variable means that there are a range of studies in which elements of social cohesion are associated with forms of growth. In many cases, growth is depicted as a single dimension (GDP or GNP/capita), focusing on economic efficiency. However, in some studies a wider perspective on growth is discussed.

For example, Ritzen et al. (2000) consider what they call 'pro-poor' growth where growth with equity is considered.

Much political science literature on democracy and growth argues that direction of causality runs from economic growth to democratisation, rather than the other way around. An influential study in this field (Pourgerami, 1995) uses time-series data to establish that economic growth has a powerful influence on democratisation through education and physical capital formation. There is some reverse causality between democratisation and growth through the enhancement of labour quality that might result from positive welfare effects of democratisation, such as access to health and education, but these effects are relatively weak. They are also contingent of the nature of welfare regimes in countries. This contention has been strongly supported by Helliwell (1994) who uses a design based on aggregate statistics for 125 countries for the period 1960-85. Helliwell finds that there is a strong causal relationship between economic growth and democratisation, supporting Pourgerami that human and physical capital investments are the predominant mechanisms. He finds that there is no evidence to support that democracy leads to future economic growth (reverse causality).

Although this evidence might suggest that there is no causal relationship between political stability and economic growth (rather than economic growth is supportive of democracy) we should be cautious in arriving at this conclusion. Although democracy may be thought to be a precondition of any meaningful form of social cohesion (other than authoritarian forms) the analysis conducted by Pourgerami (1995) and Helliwell (1994) may be more appropriate for countries outside of the EU – most EU Member States have been, in general, democracies for much of the past century (however, there are obvious lessons from this research for the transitional economies, in that strong economic growth may be a pre-condition of establishing democratic structures). More appropriate for EU Member States may be evidence that suggests that political regimes (institutions and structures of governance) may be significant

in growth rather than simply democratisation (Przeworski and Limongi, 1993). Therefore, political factors such as trust, civil and political rights, and social policies on equality and crime are (possibly) more significantly associated with growth.

Knack and Keefer (1997) use data from the WVS to argue that levels of general trust are strongly associated with economic growth whereas associational memberships are not associated with growth. Although a useful contribution to the literature on social cohesion in how micro-social processes (trust is measured at the individual level in WVS) are linked with macroeconomic growth, there is no evidence that this process is causal. Rather, there is an associational relationship between these variables. More convincingly, Ritzen et al. (2000) conceptualise a model whereby social cohesion provides the foundation for sound political and institutional governance. Without social cohesion, politicians are engaged in satisfying factional interests and crisis management rather than building stable institutions. Social cohesion, therefore, produces the conditions whereby political reform, democracy and rights can be consolidated. In turn, this produces the conditions necessary for what they call pro-poor growth: that is growth with equity in terms of the distribution of income. Using civil and political liberties (the rule of law), measures of institutional corruption and democratisation they use growth models to examine the relationship between these factors and economic growth. As both social cohesion and growth are modelled over time, there is evidence that causality runs from social cohesion to economic growth.

According to Easterly (2001), forms of social cohesion and economic development that promote what he calls the middle class consensus are particularly important in fostering both future economic growth and social cohesion (in terms of political stability and democratisation). Easterly defines the middle class consensus as a society where there are few strong class or ethnic differences – that is societies which are relatively homogenous. There is some evidence that there is a causal relationship between a middle class consensus

in that the regression models used show that changes in homogeneity occur before changes in economic growth and social cohesion (although panel data would be more convincing). However, the explanatory mechanisms by which the middle class consensus might promote both growth and social cohesion are less obvious. Easterly (2001) concedes that there is no obvious social reason (other than deeply reactionary ones) why class and ethnic homogeneity should produce growth and cohesion. Instead, he argues that class and ethnic heterogeneity make a society open to division by political factions and politicians. This presents an alternative hypothesis whereby political and institutional factors are implicated in both social cohesion and growth.

Entorf and Spengler (2000) review the literature on crime and economic growth and seek to improve on this literature in terms of establishing forms of causality. They consider that although the literature is relatively silent on these issues there are important findings concerning the relationship between crime and efficiency/equity. In terms of economic performance, there are impacts of crime on job creation as crime imposes additional costs on households and businesses. According to Palle and Godefroy these costs are around 4-6 % of GDP each year. Entorf and Spengler (2000) show, through an analysis of regional data on 550 European regions, that there is a causal relationship between certain types of crime and household wealth. In particular, theft, robbery and drug offences are strongly causal in terms of decreased household wealth. Although the authors are cautious in making direct links between household wealth and GDP, they argue that the locations of these crimes (in poor areas) and their impact on economic activity mean that there are negative consequences in terms of sustainable economic growth.

In conclusion, although much of the evidence is associational there is some evidence of causality between elements of social cohesion and elements of economic growth. Although the political science literature on democratisation points towards a strong role for economic growth (rather than *vice versa*) this analysis does not tell us much about EU Member States

which (for the most part) are democratic States. Although much of the evidence on social cohesion and growth is associational (Knack and Keefer, 1997) or not fully convincing as to causality (Easterly, 2000) there is evidence that strong institutions can lead to pro-poor growth (Ritzen et al., 2000) and that crime is associated with a decline in household wealth (Entorf and Spengler, 2000). This presents some preliminary evidence that although growth and social cohesion are mutually reinforcing, there is some causal relationship between elements of social cohesion and types of economic growth (at least for those countries which are already democratic).

Turning to education, in OECD and EU approaches to models of growth and social cohesion the importance of education beyond the creation of human capital is central. In securing sound institutions, governance and guarding against corruption increasing levels of educational participation and political literacy are particularly important (Heyneman, 2003). This has been supported by work on levels of education which links education not only to qualifications and attainment but also to social outcomes. While research on the role of education in development has tended, historically, to focus most on the contribution to economic growth, interest in recent years on the social benefits of education has grown substantially. There is now a wealth of evidence on the benefits of education to health, population control, crime, equality and social cohesion generally. For economists these kinds of benefits are typically discussed in terms of externalities for instance benefits of a public character and which cannot be wholly captured by individual economic agents. In his pioneering work, *Education and development: measuring the social benefits* (1999), Walter McMahon sought to measure the social impacts of education across a range of domains. He distinguishes between various types of externality effects which may derive from education. Externality benefits may accrue to households and firms which benefit from higher levels of education and they can also accrue to communities in general. Benefits may take the form of market returns (economic

benefits) or they may have a pure non-market character, such as improvements to human welfare in environmental quality, that does not (directly) affect the economy. However, most non-market benefits also have an indirect effect on the economy. Education effects on social and economic outcomes may either be direct or indirect as, for instance, when education-driven enhancements to social cohesion or improvements in population control bring economic benefits.

Using data for 1965 to 1995 across 78 countries, and with a time lag analysis, McMahon found strong evidence of both direct and indirect effects of education on a wide range of social indicators. Controlling for other relevant variables, and with a sufficient time lag, McMahon found that educational enrolment correlated significantly across countries with human rights, political stability and democratisation, both directly, in the case of the first two, and indirectly in all cases through economic growth. Increases in primary and secondary enrolment, after a 20 year time lag, correlated significantly with reductions in poverty, whereas development with stable or declining income inequality was related to the extension of secondary education to rural areas subsequent to the generalisation of primary education. McMahon also finds that rising levels of secondary education are strongly associated with diminishing levels of violent crime, an effect which is produced indirectly through lower unemployment and income inequality. McMahon deals only with the impact of quantities of education (as measured by years of schooling or measures of educational inputs). However, more recent work (Gradstein and Justman, 2001) has also investigated the effects of education quality (in terms of numeracy/literacy skills) and distribution on the level and distribution of social outcomes and has found substantial evidence of impact. This means that increases in the level of educational attainment (including VET), or of numeracy/literacy may have a compensatory affect on some of the negative socioeconomic issues which may be associated with economic growth.

3.3.1. Individual monetary and non-monetary benefits of VET

There is also growing evidence that there are non-monetary impacts of VET at the individual level, which may enhance social cohesion and growth through improved human capital endowments and increased participation in civil society. The private benefits of investment in VET (that is the benefits which accrue to the individual) are well documented in terms of labour-market returns. In particular, as Cedefop, Descy and Tessaring (2004, p. 247-255) point out, European Social Fund evaluations show that the private benefits of VET are particularly salient when programmes are concentrated on disadvantaged groups and offer work experience as well as training. Although it is disputed whether, in general, investment in VET is more favourable to individuals than investment in other types of qualification (in particular academic qualifications) across Europe, VET has been found to increase wage returns, reduce periods of unemployment and increase other non-pecuniary workplace benefits such as status at work. The broad review of econometric studies on the workplace benefits of VET by Cedefop, Pfeiffer (2001) finds almost universal support that VET increases wages, leads to improved promotion prospects and increases productivity in the workplace. These general findings of econometric studies for European countries have been extended by work which uses the ECHP (European Community household panel survey) by Bassanini and Martin (2005). Although this study does not comment on specific country effects, the pooled data from the ECHP produces some interesting extensions to this review. First, young and workers with good initial education qualifications are the major beneficiaries of VET in terms of wages. Second, older and poorly educated workers are the major beneficiaries of VET in terms of job security. This study suggests that wage rigidities for younger and well educated workers in Europe means that those workers who do not invest in VET (and increase their productivity) are more likely to lose their jobs than experience a wage cut. For less well educated workers wages are more flexible in a downward direction.

Outside of the workplace other non-pecuniary private benefits of VET (those benefits which accrue to the individual which are not easily monetarised such as improved health) and externalities of VET (spill over effects) have not been awarded as much attention. Broadly, although the social benefits of general education (being the summation of both private and external benefits of education) have been well documented, the benefits of specific educational activities (VET, adult education, training) have less often been considered. In this section of the report, we focus on longitudinal studies of the social benefits of VET from which we can more likely ascertain the persistence of VET effects over the life course. At present, the focus of these studies appears to be in countries such as the UK and northern Europe (probably as these countries have well established longitudinal studies).

In reviewing the studies on the non-pecuniary benefits of VET in Europe it is apparent that many studies focus on one form of social outcome such as intergenerational impacts, crime or health. Exceptionally, in the UK the Centre for Research on the Wider Benefits of Learning (CRWBL) has conducted both qualitative and quantitative study on the non-pecuniary benefits of VET (among other qualifications) over the life course. In a broad study of the wider benefits of VET (Feinstein et al., 2003) a longitudinal study (the *National child development study, 1958* – a birth cohort study of individuals born within one week in 1958 with over 17 000 respondents) is used to examine whether there is a relationship between the acquisition of vocational qualifications and (non certified) on-the-job training between the age of 33 and 42 and significant life-course changes. In ascertaining effect sizes, ordinary least squares and logistic regression techniques are used with controls for prior education, social class and gender. In general, adult learning (including VET) during this period is found to have positive and significant effects on social capital, political attitudes and health (smoking and exercise) although effect sizes are small. In some areas (drinking and depression) academic adult education has no effect. However, taking accredited vocational courses reduces alcohol

consumption whereas non-accredited work related training increases it. This perverse effect of adult education could be connected to specific UK cultural practices. Although perusal of accredited vocational qualifications is associated with professionalism (albeit in an individualised fashion compared with practices in other countries) non-accredited workplace training is often seen as an escape from work, with heavy drinking commonly reported among staff following such events. Vocational accredited qualifications and work-related training also lead to beneficial changes in social and political attitudes – decreasing racism, authoritarianism and political cynicism. Participation in accredited vocational courses does not lead to increased political and civic participation. This may be linked to the market model of vocational education in the UK, which is premised more on individuals gaining qualifications to advance their careers rather than as part of an apprenticeship with social and political (as well as economic) outcomes. Heinz et al. (1998) use longitudinal data to suggest that the apprenticeship system in Germany provides enhanced opportunities for civic and political participation arising through occupational orientations, such as trade unions.

The CRWBL has also focused attention on specific areas of social benefit. The inter-generational impact of VET on child outcomes has been particularly important. In a recent study, again using the *National child development study*, Feinstein and Duckworth (2006) analyse the impact of mother's education on their parenting and children's outcomes. Staying on to study VET courses post-16 is found to have a significant effect on children's verbal ability and produces a more educationally stimulating home environment. However VET did not affect child self esteem, reading and mathematics scores. The authors argue that socioeconomic status is a more powerful influence on these factors than education. Again, in a marketised education system such as the UK, qualifications alone (or the skills associated with them) may not always be sufficient to produce social benefits. In longitudinal studies in other countries, intergenerational effects of VET are found to be more persistent. Gødde and Schnabel (1998)

use data from the German Socio-Economic Panel (GSOEP) to show the effects of parental education on the wages of their children. Using an instrumental variable approach they find that incrementally all types of parental education (including VET and apprenticeships) have a positive impact on their children's wages. Jæger and Holm (forthcoming) hypothesise that in Denmark, and other Scandinavian countries, non-monetary assets such as VET qualifications (human capital) are more powerful forces in inter-generational mobility than economic capital due to the small (and relatively inefficient) private sector in Scandinavian education. This means monetary investments in children's education are unlikely to yield substantial returns as compared to other countries in Europe (such as the UK). Using the youth longitudinal study a representative sample of 3 151 respondents, Jæger and Holm analyse whether parental possession of VET qualifications influences the educational performance of their children. Using latent class analysis, the authors demonstrate that if mothers hold vocational qualifications there is a much higher chance of their children attaining higher tertiary education. For fathers there is a significantly greater chance of their children attaining an apprenticeship if they themselves have an apprenticeship/VET. This analysis suggests that there might be different mechanisms by which VET has intergenerational social benefits across different education systems. Specifically, in market models of VET (such as the UK), VET has less of a socialisation function across generations (as apprenticeships have faded) and would have more of a function in terms of access to economic resources. So although mother's possession of VET may increase their parenting skills and their child's verbal ability, the marketised and individuated nature of the schooling system does not mean that these qualifications will be valorised in terms of increased school performance. In contrast, in social models of VET (such as in Germany, and to a lesser extent in Denmark) educational qualifications may be more important than economic capital.

As well as across generations, there are individual level benefits associated with VET. In terms of health we have already considered

the CRWBL research (Feinstein et al., 2003) where evidence is strong that (for the majority of cases, but not in terms of depression) participation in VET leads to better health. This message is strongly reinforced in other European studies. Setter et al. (1998) show that in Germany although prevalence of smoking is strongly associated with those in lower level service occupations (hairdressers, shop workers, butchers) that even within these occupations, level of vocational education could positively effect smoking behaviour. Karvonen et al. (2000) show for Finland (using the longitudinal adolescent health and lifestyle surveys) that over a range of health-related behaviours (including smoking, coffee drinking and exercise) vocational qualifications were a protective factor in preventing youth from engaging in unhealthy behaviour. In each of these studies the mechanisms by which VET has an impact on health are slightly different.

In the CRWBL study, personal efficacy is thought to be most significant mechanism by which VET impacts on health, whereas in the Karvonen et al. (2000) studies it is suggested the status gains through VET increase the likelihood of healthy behaviours.

Finally, there is a role for VET in not only increasing individual, family and community benefits but also in reducing the pernicious effect of crime. Much of the research on VET and crime focuses on the role of VET in the rehabilitation of criminals. Willson et al. (2003) conduct a useful meta-analysis of the impact of vocational education programmes on the subsequent criminal careers of imprisoned offenders. Although they criticise the studies for lack of methodological rigour (in particular lack of adequate controls) the authors consider that those prisoners participating in VET have a significantly lower probability of committing crimes afterwards than those who did not participate. Although valuable, the impact of VET on reducing the probability of reoffending by former offenders is only a small part of the function of VET in this area. More significant is the impact of VET in reducing the risk of entering a criminal career initially. A core message repeated across several countries and studies is that lack of VET is a risk factor in adopting a 'criminal career' for

young people. Christoffersen et al. (2003) use a number of longitudinal profiles for Danish youth aged between 15 and 27 to establish that lack of vocational training opportunities are associated with higher risks of criminal activities. Loeber and Farrington (1998) also consider a longitudinal study of youth (selected on the basis of risk factors) to consider that lack of vocational opportunities within schools is one risk factor associated with delinquency. It must be noted that the Christoffersen et al. and Loeber and Farrington studies are based upon bespoke longitudinal studies rather than national studies. This is because questions on crime are rarely asked on national longitudinal studies (as survey designers wish to avoid drop out). Therefore, it must be remembered that conclusions raised as to the effectiveness of VET in addressing crime are based on non-representative samples.

3.3.2. Educational inequalities and social cohesion

Beyond the monetary and non-monetary impacts of VET reducing inequalities in levels of education may have an impact on growth and social cohesion. There are several reasons why educational inequalities may be negative for social cohesion. First, at the level of value formation, educational inequality might be expected to increase social distance between individuals and groups though creating divergent norms (Gradstein and Justman, 2001). This is facilitated by differences in symbolic resources between individuals in terms of cultural and social capital (Bourdieu, 1986). Differences in social and cultural capital between social classes mean that it is more difficult to mediate between forms of political expression and resolve conflicts. A useful way to think about this is to consider differences between societies with small scientific/technical elites compared to societies with a mass system of vocational education. In the former, elite values are used as a form of distinction and isolation to a greater extent than in the latter. If VET reduces educational inequalities between groups it may lead to shared societal norms, although obviously this depends on the nature of the provision. Second, educational inequality, like income inequality, contributes

towards individual levels of stress as has been shown in studies on societal health (Wilkinson, 1996). Marked disparity of educational resources makes transactions with other individuals more difficult as knowledge and norms are not shared. Educational inequality might also increase resentment and encourage invidious comparison. The aggregated effect of such stress is lack of social cohesion. Third, there is a close correlation between social class and educational attainment. This means that increased differentials in educational qualification by social class might lead to increased competition in labour markets and other social arenas. Class conflict may be exacerbated by increased educational inequality. There is also a close correlation between educational attainment and political participation (Emler and Frazer, 1999). Increased educational inequality means that there will be increasingly unequal levels of participation in political and civic arenas. This skews democratic processes and outcomes towards individuals and groups who possess higher levels of education (Nie et al., 1996). VET may provide individuals with access to political resources, both in terms of civic skills associated with general education and through participation in employee organisations. It must be noted that VET also has an important role in reducing other social inequalities – not least by increasing labour-market participation by previously excluded groups.

Research by Cedefop, Green et al. (2004) has shown that cross-sectionally there are correlations between levels of educational inequality and social cohesion including aggregate crime levels. More recently (Green et al., 2006) and more convincingly in terms of causality it has been shown that educational inequality has an impact on social cohesion over time using cross-sectional time series analysis for several OECD and non-OECD countries. Moreover, there is an institutional relationship between educational inequality and the structure of education in regional groups. Although the causality of the relationship is not clear, those countries (particularly the Nordic countries) with comprehensive education systems and socially supported access to lifelong learning

and vocational training appear to have lower levels of educational inequality. This position is supported by Gradstein and Justman (2001) who develop an econometric model to argue that decentralisation of schooling and the introduction of privatisation in schooling (and, implicitly other forms of education such as VET) decreases social cohesion by increasing the social distance between groups. Further, Gradstein et al. (2005) argue that not only do decentralised schooling systems reduce social cohesion, but separate schooling for immigrant groups increases social polarisation. As we have argued in the analysis of immigrants and social exclusion above, it is better to integrate immigrants into mainstream VET provision.

In the following section this analysis is elaborated using new data on educational inequality for European countries to analyse educational inequality and social cohesion for these countries alone. We also consider whether there is a relationship between enrolments in vocational education and education inequality more generally.

3.4. Modelling social cohesion, growth and VET

In our earlier research for the third research report (Cedefop, Green et al., 2004) we considered that there may be a cross-sectional relationship between educational inequalities and social cohesion at the aggregate level. For this research report we extend this analysis in two dimensions. First, we will consider the temporal dimensions of educational inequality and social cohesion by constructing a cross-national panel dataset of educational inequalities, educational level, GDP/capita and social cohesion measures for 1960-95. We use the updated Thomas, Wang and Fan dataset for the measure of educational inequality (education gini) and the ACLP dataset for our measure of social cohesion (Alvarez, Cheibub, Limongi and Przeworski – details can be found in Przeworski et al., 2000). This enables us to test hypothesis concerning the relationship between education, educational inequality,

real GDP/capita and social cohesion over time. Second, we use measures of national vocational education, being enrolments at ISCED3 (from OECD) to test whether there is a relationship between educational inequality and participation/inequality in VET.

3.4.1. Results of modelling: inequality, growth and social cohesion

Using the latest dataset on educational inequality from Thomas, Wang and Fan (Thomas et al., 2001), the Deininger and Squire (1996) income inequality dataset and sociopolitical indicators from ACLP (Przeworski et al., 2000) we created a panel dataset of European country measures of educational inequality, social cohesion indicators and income inequality from 1960 to 1990. This dataset includes 17 countries (Belgium, Bulgaria, the Czech Republic, Denmark, Finland, France, Greece, Hungary, the Netherlands, Poland, Portugal, Romania, Spain, Switzerland, Turkey, West Germany and Yugoslavia). Using these data we considered whether there is a relationship between educational inequality and social cohesion using a fixed effects cross-sectional time series model. We provide estimates for the following variables: *edgini* (educational inequality); *gini* (income inequality); *GDP* (real income/capita).

We consider three outcome variables – civil liberties, political liberties and unrest from the ACLP dataset. Unlike economic growth (which is easier to operationalise), social cohesion cannot be directly observed, so it is important to choose measures which might be indicative of this underlying societal property. Political and civil liberties are important indicators of what Ritzén et al. (2000) refer to as being indicative of the rule of law. According to Ritzén et al., civil and political rights are enhanced by social cohesion which enables politicians to put into place the political and institutional structures necessary to enhance those rights. This analysis is supported by Heyneman (2003) who considers that civil and political rights are the most important indicator of social cohesion, and are one area where education can have a particularly strong impact. However, social cohesion does not necessarily manifest itself in terms of the formal legal and institutional structures of a country. Hence we

also consider unrest which is more representative of disputes and public dissatisfaction.

Political liberty is ranked on a seven point scale through an index derived by Freedom House (a non-profit making institution which publishes regular surveys of liberties). We have reversed this scale so that higher scores indicate greater political liberty. In our new scale, 1 indicates regimes where political rights are non-existent and there is severe oppression, 6 represents regimes where there is political corruption, violence and political discrimination against minorities. Regimes ranked 7 have free and fair elections and there is self-government or genuine participation for minority groups.

Civil liberty is also ranked by Freedom House on a seven point scale which we have reversed. Regimes ranked 1 on this scale have no freedom and no developed civil society. Regimes ranked 6 have deficiencies in some civil liberties, but are still relatively free. Regimes ranked 7 have freedom of expression, assembly, education and religion.

Unrest is an aggregated scale of riots, strikes and peaceful demonstrations. Przeworski et al. (2000, p. 192-193) argue that this variable is often called 'mobilisation' in the literature on the transition to democracy and 'unrest' in the literature on political stability. We aggregate these events to form a meaningful scale variable. Riots are defined as the number of demonstrations or clashes of more than 100 citizens involving the use of physical force. Strikes are the number of strikes of 1 000 or more industrial or service workers that involved more than one employer and were aimed at national-government policies or authority. Peaceful demonstrations were defined as any peaceful public gathering of at least 100 people for the primary purpose of displaying or voicing their opposition to government policies or authority, excluding demonstrations of a distinctly anti-foreign nature.

Table 6 shows the estimate for the outcome measure civil liberties. As can be seen, there is a significant negative relationship between educational inequality and civil liberties with greater inequality leading to a reduction in civil liberties (significant at the 10 % level). We also find that a relationship between educational inequality and political liberties (Table 7) with greater educational inequality being associated

with a reduction in political freedoms (significant at the 10 % level). However, in terms of more general types of unrest (riots, strikes and demonstrations – civil disorder) we do not find a relationship between educational inequality and this variable (Table 8). This is contrary to our finding for a wider group of world advanced industrial countries (Green et al., 2006). The lack of a significant effect could be due to the small sample size in this analysis of unrest, but this issue demands further investigation.

For vocational education the implications are that if investment in this type of education leads to a reduction in general educational inequality, then over time there could be an increase in general civil and political freedoms in European countries, or more realistically, that equity in education contributes to the maintenance of civil and political liberties. We also find that when educational equality is taken into account there are no significant effects (at the 10 % level) of economic activity (real GDP) or income inequality on these variables. This means that it is plausible that educational equality (rather than necessarily income inequality) is a key mechanism in maintaining social cohesion. A plausible mechanism for this in terms of rights is that reducing educational inequalities strengthens systems and institutions against abuses of rights and corruption.

3.4.2. VET and the education gini coefficient

As there is currently no time series data available for 1960-90 on equity in VET (in terms of access by initial qualifications, for example), we consider the correspondence between the level of vocational enrolments and general education inequality. If there is an association between VET and education equity we may assume that VET can be used as a lever to influence the level of educational equity. To explore relationships between educational inequality, social cohesion and vocational enrolments for European countries we considered, first, whether there was any relationship between proportions of vocational enrolments and educational inequality. In Figure 3 we provide an indication of the correspondence between these two statistics for the countries in our dataset using historical OECD data for 1985 and 1990. We

Table 6: **Inequality, GDP and civil liberties**

	Civil liberty
Edgini	-12.555 (1.57) †
Gini	-0.025 -0.24
GDP	0 -0.06
Constant	9.597 -1.62
Observations	43
Number of group (country)	15
R-squared	0.12

Absolute value of t statistics in parentheses
 † significant at 10 %

Table 7: **Inequality, GDP and political liberties**

	Political liberty
Edgini	-20.126 (1.85) †
Gini	0.036 -0.25
GDP	0 -0.7
Constant	8.626 -1.07
Observations	43
Number of group (country)	15
R-squared	0.23

Absolute value of t statistics in parentheses
 † significant at 10 %

Table 8: **Inequality, GDP and unrest**

	Unrest
Edgini	-26.298 -0.98
Gini	0.259 -0.73
GDP	0 -0.31
Constant	1.973 -0.11
Observations	56
Number of group (country)	15
R-squared	0.06

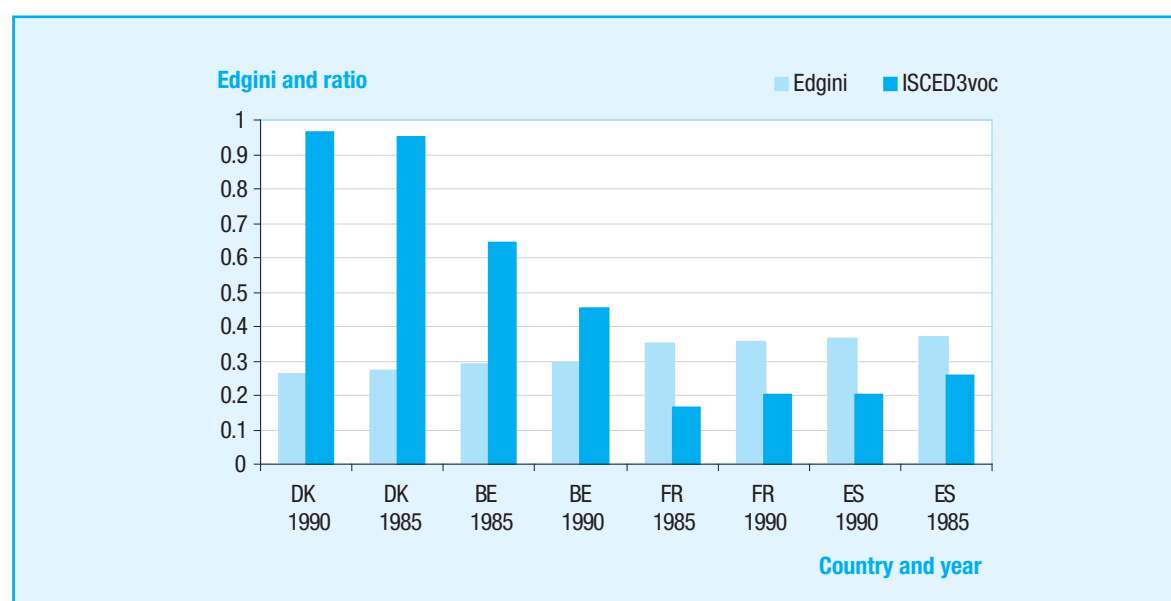
calculate the ratio of those who have received vocational qualifications at ISCED 3 as opposed to those who receive qualifications in academic or other areas and compare this to the edgini for each of these years. This gives a very crude indicator of the general vocational orientation of education systems. The combined dataset meant that we have data for Belgium, Denmark, Spain and France for both 1985 and 1990. The correlation between what might be called the vocational orientation of these countries education systems and educational inequality was highly significant with a correlation coefficient of -0.93 (significant at the $p < 0.01$ level). This means that there is a negative correlation between vocational orientation and educational inequality. Although we cannot specify causality, there is an association between high vocational enrolments and low degrees of educational inequality. Tentatively, this might mean that systems whereby vocational qualifications are seen to have status (as enrolments are high relative to academic enrolments) are less generally unequal in terms of the edgini.

As can be seen in Figure 3, Belgium and Denmark have relatively high numbers of individuals obtaining vocational qualifications in both 1985 and 1990 at ISCED 3 whereas Spain and France have relatively low numbers.

Belgium and Denmark also have relatively low levels of educational inequality (< 0.3) as opposed to Spain and France (> 0.3), at least as measured by the education gini coefficient.

It must be noted that these are not a strong tests of the relationship between vocational qualifications and inequality as they are cross-sectional. If vocational graduations have an effect on inequalities and social cohesion then we may expect a time lag between changes in the output of educational systems and social and economic effects. In McMahon's (1999) study of the social outcomes of education, for example, there is a time lag of around 10 to 20 years between changes in output of the education system and an impact on social indicators. However, these results indicate that there may be some relationship between general educational equity and system characteristics. The vocational orientation of an education system over this time appears to be connected to educational inequality. Although simple generalisations concerning the prevalence of vocational against academic qualifications in inequitable education systems cannot be made (especially with a small sample of countries) in as much as vocational qualifications can redress earlier inequalities in education then they may have a role to play in improving general educational equity.

Figure 3: **Qualifications at ISCED 3 as a proportion of all qualifications and educational inequality**



3.4.3. Social cohesion and VET – summary

Theoretically, VET has a key coordinating role in terms of social and system integration in maintaining social cohesion. Although growth and social cohesion are not necessarily mutually exclusive, VET may promote both by maintaining strong participation in institutions and reducing general educational inequality. As our earlier discussion of vocational socialisation and social exclusion has shown there is strong support for the contention that VET can be used to promote value systems favourable to

social cohesion (although this is highly path dependent on a country's culture, institutions and the nature of VET). In this section we find that educational equality is associated over time with greater civil and political liberties and we find some evidence that VET is associated with general educational equity. However, the test we use to measure this is fairly crude and greater research effort needs to be conducted to produce time-series data on vocational enrolments and equity.

4. Conclusion

4.1. Social inclusion, cohesion and VET: towards a conceptual model

In Table 9 we adapt the categories of social exclusion first posited by Silver (1994) to create a conceptual model of various social cohesion regimes. We include Silver's categories of solidarity and specialisation regime but drop his category of 'monopoly' it does not particularly exemplify modern European welfare systems in favour of social democratic and social welfare regimes. However, it should be noted that there are similarities between the social democratic and social welfare regimes in terms of their democratic orientation. Heuristically, though, we separate them to distinguish between possible alternative policy objectives. We consider models of the new political economy and the orientation of VET in each regime.

In the first column, we give a model of a social cohesion regime orientated towards solidarity through moral integration with the

state. This typifies a French republican model of social inclusion. In terms of social inclusion, this model is orientated around value integration into a national polity which includes (for social cohesion) national targets and planning. This system prioritises values education through VET. As discussed in Section 1.3.2, the role of VET in promoting cultural values (particularly citizenship) has been a particularly important part of civic-republican traditions. Our second social cohesion regime is liberal and relies on a narrow conception of solidarity in terms of separate market/state, public/private spheres. In terms of social inclusion, employment is the priority of VET. Although social cohesion is not a priority, models of endogenous growth provide empirical and ideological support to market mechanisms for enhancing social cohesion. Again, this relates back to our discussion in Section 1.3.2 of the British system of vocational education which focuses on competence and employability rather than broader forms of citizenship. The third model – social democracy – is based on democratic

Table 9: **Social cohesion regimes with respect to VET**

Regime type	Solidarity	Specialisation	Social democratic	Social welfare
Conception of integration	Group solidarity/ cultural boundaries	Separate spheres/independence	Consensus	Equality
Source of integration	Moral integration	Exchange	Citizenship rights	Equity
Ideology	Republicanism	Liberalism	Social democracy	Social justice
Discourse	Exclusion	Discrimination/underclass	Exclusion	Inequality
Models of the new political economy	Integration	Skills Networks	Partnership	Inclusion
VET orientation for social inclusion	Values	Employment	Socialisation	Clientism
VET orientation for social cohesion	Targets/planning	Endogenous growth	Democratisation	Equity
Closest national exemplars	France	US/England	Germany	Norway

participation and social partnership. In terms of VET for social inclusion this means that socialisation is particularly important. For social cohesion, socialisation as an active citizen is relevant in terms of democratisation. This typifies the German (statist or social) model of vocational education. The last column in the table indicates a social welfare model, guided by principles of social justice, which may well be socially democratic. In terms of social inclusion, 'clientism' means that VET is orientated around the needs of specific excluded groups with the aim of delivering a relatively high minimum standard of education and training. With regard to social cohesion, equity is an important social principle. This mirrors our earlier discussion of the Nordic systems of vocational education where combating inequality is seen as being of major importance.

Although the above models are abstractions of reality (and do not describe well transitional countries or those undergoing rapid reform of VET such as Poland or Portugal) they provide a useful way of considering the relationship between VET, social exclusion and social cohesion. Within each system, VET has a specific function of what might be thought to be a particular regime. These are somewhat determined by the conceptions and sources of integration in each model. So in the solidarity model, for example, it makes some sense that the aims of VET should be towards the adoption of certain values (with respect to exclusion) and towards national targets (with respect to cohesion). It also means that the difficulty of policy borrowing within regimes is apparent. For example, it would be difficult for policy-makers in England to transfer VET methods of combating social exclusion which were based on equity, rather than market principles.

However, this model also represents a useful way for thinking about the modernisation of VET for social exclusion/cohesion within the EU. As our conclusion (below) will show, the nature of participation of the socially excluded in VET and the difficulties of targeting VET towards social exclusion are two major findings of this report. Examining the conceptual model shows the tensions involved in resolving these issues in existing welfare regimes. In terms

of participation in VET (perhaps in aspects of governance) by the socially excluded the social democratic model would seem most suitable in terms of adaptation. In other regimes, it is clear that mechanisms for participation might be different. For example, within a liberal model, networked (civil society) forms of participation might be more appropriate whereas within a social welfare model this may involve a more active conception of the welfare 'client' for VET.

Similar issues are found in issues around the difficulties of targeting VET. In solidaristic regimes, problems with targeting would not necessarily occur if it is believed that all citizens should receive a national model of VET, although this may create its own forms of exclusion. In such systems, securing access to VET for excluded groups may be a policy priority. This may also be an issue in social-democratic systems where excluded groups may not be active participants in decision-making processes over VET.

As this model shows, even when broad principles of social exclusion and cohesion in VET are reasonably clear (that vocational socialisation benefits inclusion, that inequality is bad for cohesion) their implementation into national models presents a further difficulty for policy-makers given the histories and assumptions made in particular social cohesion regimes. This does not, though, mean that this task is not possible – but policy borrowing needs to be complemented by putting in place the democratic and inclusive structures to modernise VET for inclusion and cohesion in Europe.

4.2. Findings and policy considerations

This contribution has considered the micro and macro social benefits of VET with regard to social exclusion and social cohesion. What we have found is that the correspondence between VET and these societal features is not necessarily deterministic. VET cannot be considered to be a social panacea in combating problems

of exclusion or lack of social cohesion. This should not, perhaps, be surprising given the corresponding literature on VET and economic growth where a deterministic relationship is not always found. However, this does not mean that we should dismiss the role of VET as being inconsequential in combating these issues and there are many significant ways in which it can contribute.

In terms of social exclusion, although VET arguably has a large role in increasing labour-market participation (a narrow form of inclusion) when wider issues of social inclusion are considered (such as citizenship) it is arguable whether models of VET premised on competences and employment alone can deliver the types of social inclusion desired by EU Member States. We have shown that social exclusion is much broader than employment and that it is best defined by outcomes (for example, in terms of income or other social categories). It is telling that within the competence movement in VET there has been a rediscovery of socialisation in the incorporation of soft and key skills into a competence framework. However, these soft and key skills are so abstracted from workplace environments that there are serious doubts as to whether they may deliver the types of socialisation necessary to combat exclusion and enhance cohesion. There are other models of VET which may be more suitable for combating social exclusion in its wider sense. We have commented positively on the German speaking countries systems of VET with regard to socialisation. It may not be appropriate to integrate these models of VET into other countries educational systems as the above discussion of social cohesion regimes implies. A more general point is that the origins of these systems provide an indication of the types of policies that countries may decide to follow. As Thelen (2004) explains, the origins of the strong German system of vocational education were not (initially) concerned with social partnership. Rather, there was a desire on the part of the state to protect the interests of artisans and craft workers against the interests of the growing industrial unions. This led to the construction of VET systems of mutual benefit to artisans, industrial unions and

employers. The reactionary protection of the artisanal sector led to a VET system of benefit to all parties, which eventually became a strong social partnership.

Because of the nature of social exclusion, similar institutional processes have not occurred in the design of vocational training systems to benefit these groups. The socially excluded do not form a viable political group – their background characteristics and interests make them too disparate. However, when their interests are represented in civil society, it may lead to VET systems that mitigate social exclusion. As discussed, racial equity in apprenticeships in the US was forced by affirmative action and coordinated groups acting in civil society. In Norway, sharing of responsibility for vocational integration by employers for immigrant apprenticeships by the sponsor scheme is another example of how group interests may be represented in civil society. Where groups are not involved or integrated in VET – such as disabled people across the five country case studies (particularly in Poland) – there are poor outcomes in the ability of VET to tackle social exclusion. These small examples imply that consumer orientated design in vocational education for the socially excluded (using focus groups and other feedback techniques) needs to be reconsidered in terms of more active, democratic participation by the socially excluded in creating VET which meets their needs. As Cedefop, Vranken and Frans (2001, p. 169) state in their review of targeting VET, there is often a cultural clash between trainers and trainees over the objectives of training (trainers emphasise skill outcomes and trainees gaining a job or increasing wages). Participation by socially excluded trainees in the governance of VET may be one way of resolving this clash. This would need careful handling by training organisations, but in other areas of the welfare state (particularly housing and communities) there are models of how the socially excluded can be democratically involved. A future research agenda might posit as to whether, and how to extend these mechanisms to VET.

A cautionary note on targeting VET and the usefulness of bespoke programmes for social exclusion should be raised. As has been seen

throughout the country case studies, targeted programmes for immigrants and the disabled are often not truly vocational, but rather focus on language/cultural skills or rehabilitation. As important as these are for the groups concerned, the wider functions of VET in terms of socialisation must not be forgotten. It could even be (cynically) argued that these bespoke programmes are a method for native and (to a lesser extent) non-disabled workers to maintain their position in the labour market by rationing access to VET as in previous times (Roediger, 1991; Thelen, 2004). Additionally, social exclusion is not just concentrated in those groups with specific racial, class or disability profiles. As seen in our above analysis there are groups of individuals in work and dual parent families who (on the basis of our analysis from EVS/WVS) can be considered to be socially excluded (Table 1). Targeting VET on the basis of client class, race, family type or disability means that clients who do not necessarily need VET to combat their social exclusion will benefit whereas clients who do not fit the profile would not. Even supposedly homogenous groups of the socially excluded are actually heterogeneous with regard to skill and qualification needs. For example, immigrants and the disabled have been found to be very heterogeneous groups with regard to their skills. More evidence on these arguments is required, but it should certainly not be assumed that targeting VET is the optimum method of addressing social exclusion. Perhaps thinking in terms of tailoring (modifying mainstream VET to meet the needs of excluded groups) rather than targeting VET is more appropriate. For example, the continued success of ALMP across Europe may require that the specific skill needs of unemployed groups are met (for example, those of illiterate adults or women returners to the labour market) (Cedefop, Descy and Tessaring, 2004, p. 177). This does not mean that separate forms of ALMP should be created for these groups, rather that existing programmes can be modified appropriately to meet the skill needs of trainees. The emphasis on tailoring by skill is substantially different from targeting by social characteristic and more appropriate in terms of the modernisation of VET. In terms of our

discussion of disabled people and immigrants, targeting often implies separate tracks of VET with little participation by client groups in the design of VET. For us, a tailored approach means not separating disabled people and immigrants from other trainees and involving them more fully in the design of VET to meet their needs. To some extent, the distinction between targeting and tailoring may be semantic, but differences between VET which is aimed at differentiated clients by social characteristics (targeting) and that which is designed to meet the needs of clients in an inclusive training environment (tailoring) are meaningful.

Enhancing social cohesion, value formation, institutional integrity and reducing inequalities are areas where education – and VET – can make a contribution. With regard to the latter, we found that in European countries educational equality was particularly important in maintaining civil and political rights. On the basis of current evidence we cannot conclude that there is a strong association between vocational enrolments and/or vocational equity and general educational equity. However, from the vocational and professional socialisation literature there is strong evidence for a value socialisation mechanism for VET and social cohesion.

4.3. Further research

In data and modelling terms, there is a need to reconstruct time series data on educational equity, VET and social cohesion over considerable periods of time. This would enable researchers to test more robustly considerations of VET, equality and social cohesion. Additionally, a concentration of econometric and statistical effort in modelling these factors appears necessary. If data were available, this would not be a particularly onerous task. This would enable policy-makers to make informed decisions considering the future roles of equity in VET in delivering social cohesion. There is also further work to be done in considering the dynamics of social exclusion. In the above analysis, although we have used cluster analysis to identify groups of socially excluded individuals this has been performed

at one point in time and with a dataset which although comparative lacks detail on many additional indicators of social exclusion. Using longitudinal data would enable researchers to examine the dynamics of social exclusion in terms of duration of social exclusion and levels of exclusion over time. More significantly, this would enable researchers to gain a better purchase on the causal relationship between VET and social exclusion. There is also the need to obtain better data on facets of social

exclusion such as memberships, health and political participation.

However, the issues raised in terms of research by this report are not just about the need for further statistical or econometric analysis. A concrete issue for political scientists and institutional theorists is the ways in which the socially excluded have (and could) influence the nature of and delivery of VET through truly participatory mechanisms. This report has intimated that this could be an important factor in the ability of VET to tackle social exclusion in the future.

Annex: results from cluster analysis

Figure 4: Cluster analysis of social exclusion for England

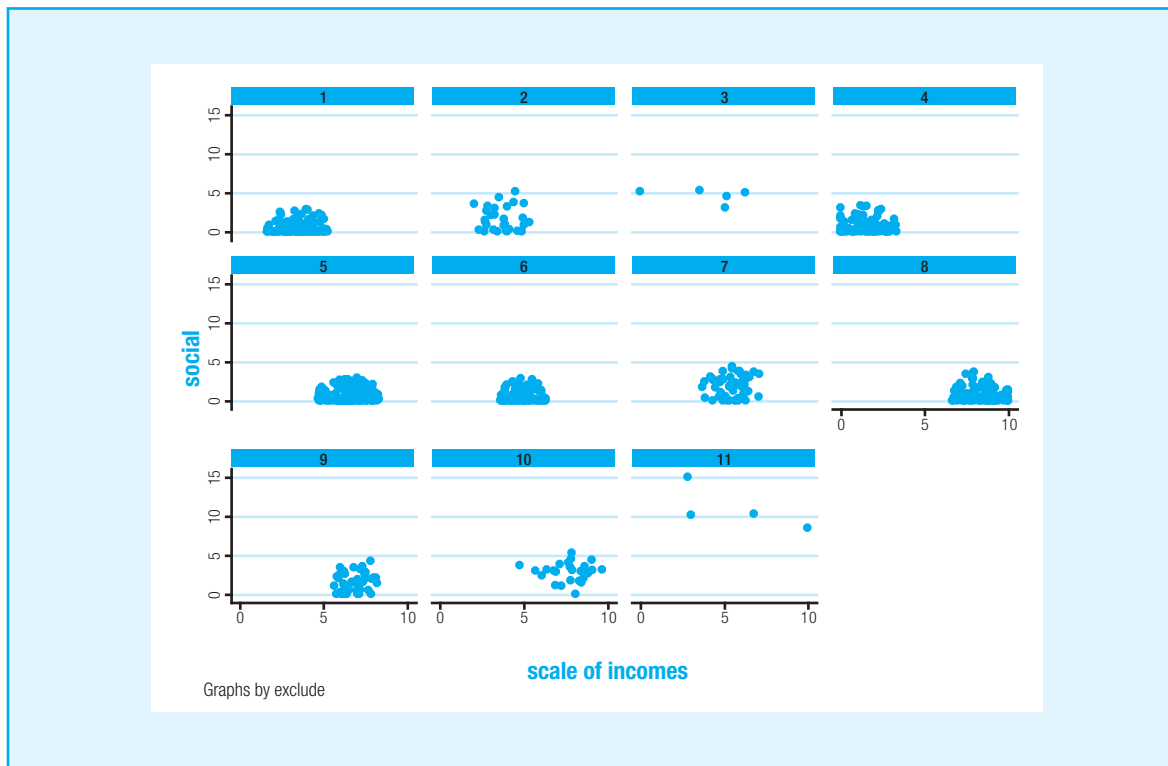


Figure 5: Cluster analysis of social exclusion for Poland

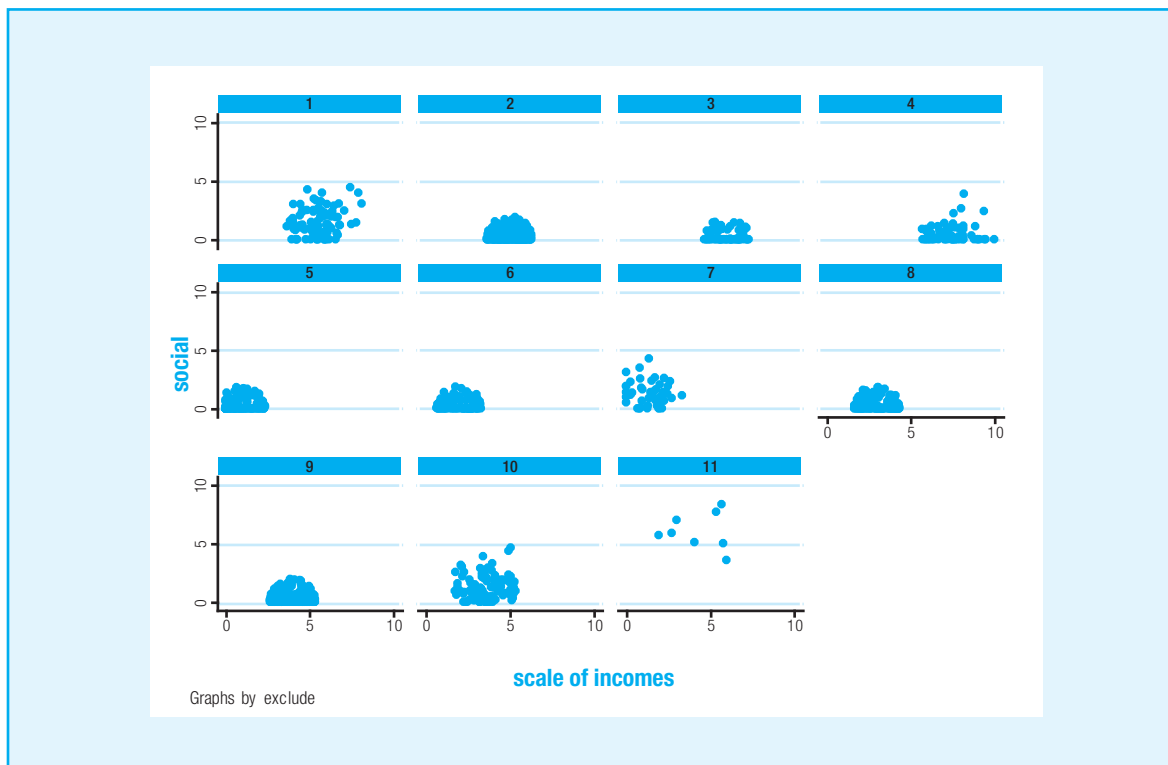


Figure 6: Cluster analysis of social exclusion for the US

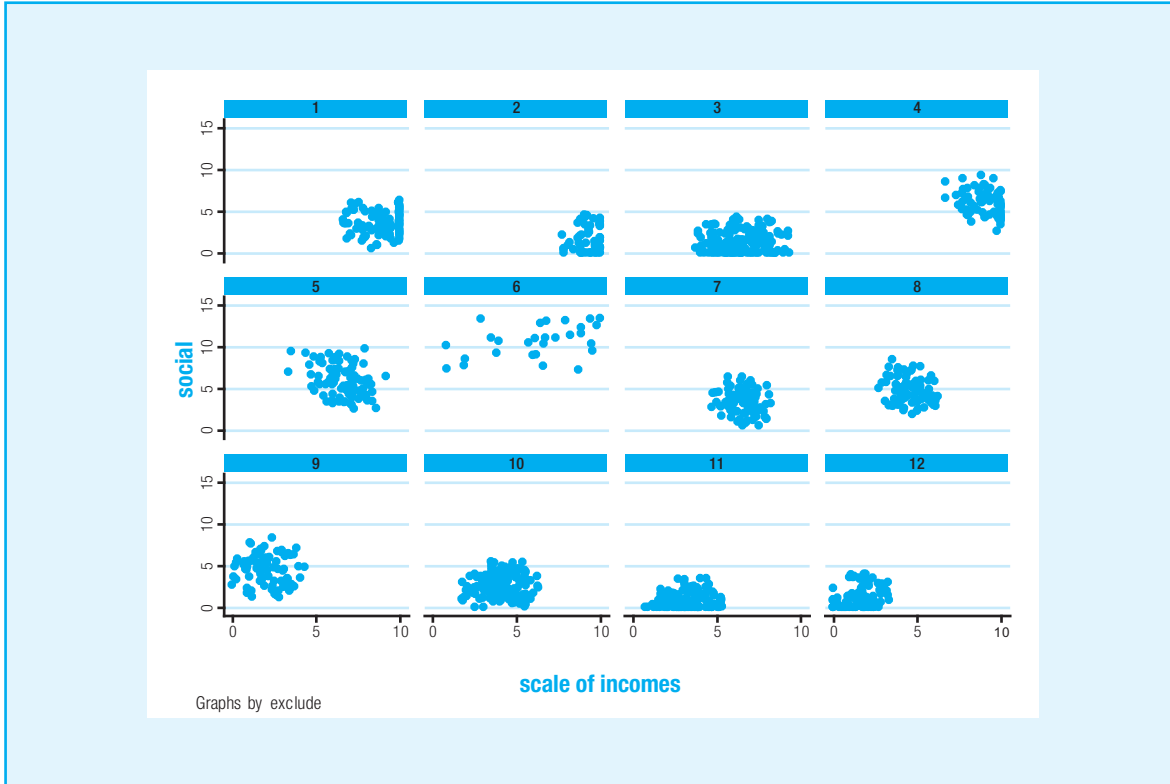


Figure 7: Cluster analysis of social exclusion for Portugal

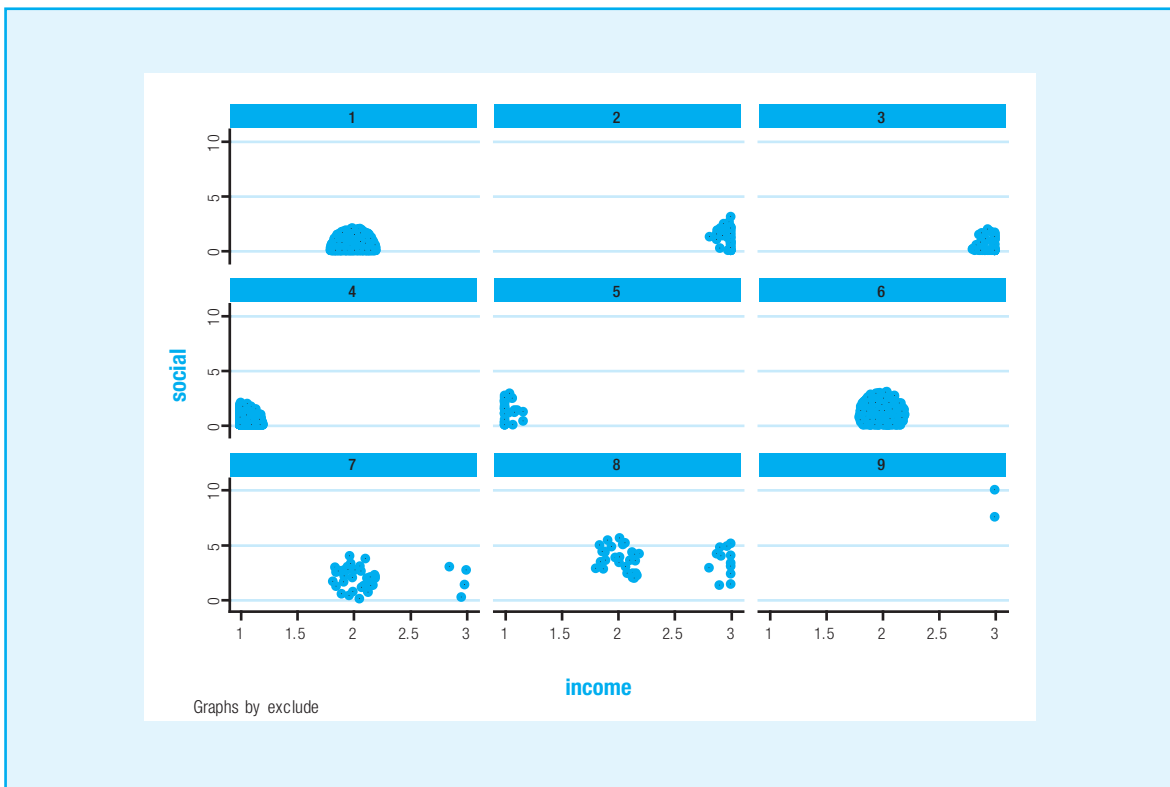


Figure 8: Cluster analysis of social exclusion for Norway

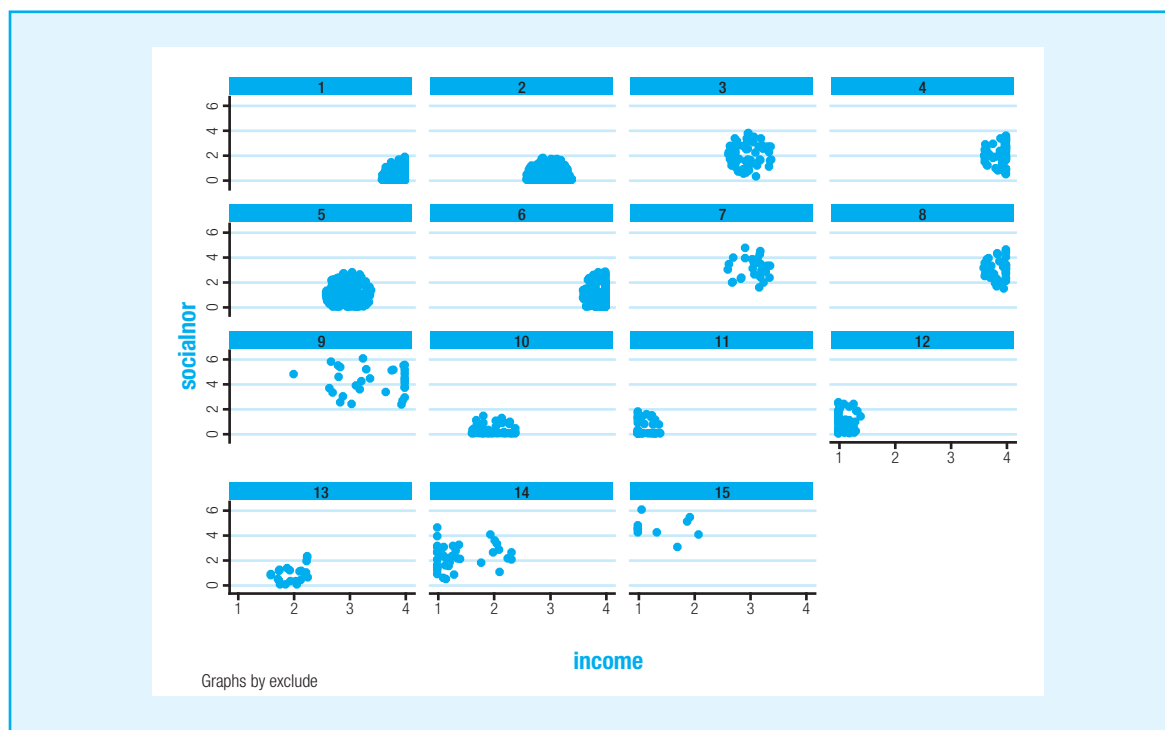


Table 10: Descriptive statistics for clusters

Country	Group	Social capital	Income	Excluded/ most excluded	Description of excluded groups
Norway	1	0	4	<i>Excluded</i>	No formal network
»	2	0	3	<i>Excluded</i>	No formal network
»	3	2	3		
»	4	2	4		
»	5	1	3		
»	6	1	4		
»	7	3	3		
»	8	3	4		
»	9	4.3	3.4		
»	10	0	2	<i>Excluded</i>	No formal network
»	11	0	1	Most excluded	Low income, no formal network
»	12	1	1	<i>Excluded</i>	Low income
»	13	1	2		
»	14	2.3	1.2		
»	15	4.1	1.4		
Poland	1	1.5	5.5		
»	2	0	5	<i>Excluded</i>	No formal network
»	3	0	6	<i>Excluded</i>	No formal network
»	4	0.3	7.4		
»	5	0	1	Most excluded	Low income, no formal network

Country	Group	Social capital	Income	Excluded/ most excluded	Description of excluded groups
Poland	6	0	2	<i>Excluded</i>	No formal network
»	7	1.4	1.2		
»	8	0	3	<i>Excluded</i>	No formal network
»	9	0	4	<i>Excluded</i>	No formal network
»	10	1.3	3.5		
»	11	6.3	4.4		
Portugal	1	0	2	<i>Excluded</i>	No formal network
»	2	1	3		
»	3	0	3	<i>Excluded</i>	No formal network
»	4	0	1	<i>Excluded</i>	No formal network
»	5	1.1	1	Most excluded	Low income
»	6	1	2		
»	7	2	2.1		
»	8	3.4	2.3		
»	9	9	3		
England	1	0	3.6	<i>Excluded</i>	No formal network
»	2	1.4	3.5		
»	3	4.6	3.8		
»	4	0.4	1.6	Most excluded	Low income
»	5	0	6.5	<i>Excluded</i>	No formal network
»	6	0	5	<i>Excluded</i>	No formal network
»	7	1.3	5.5		
»	8	0.5	8.3		
»	9	1.3	7		
»	10	2.8	7.6		
»	11	11	6.3		
United States	1	3.6	8.9		
»	2	1.3	9.4		
»	3	1.1	6.5		
»	4	5.9	9.2		
»	5	5.9	6.8		
»	6	10.6	6.4		
»	7	3.5	6.5		
»	8	4.8	4.5		
»	9	4.2	2		
»	10	2.5	4.1		
»	11	0.5	3.3	<i>Excluded</i>	Little formal network
»	12	1.1	1.5	Most excluded	Low income

'Most excluded' groups are indicated in bold

'Excluded' groups are indicated in italics

Note: Cluster analysis is a technique of data reduction and so some researcher discretion is used in the allocation of groups to certain categories.

However, 'most excluded' groups were based on the lowest mean income category for each country. In cases where there was more than one group with the lowest mean income, the dispersion of income (standard deviation) was used to ascertain the group which appeared to have low dispersion of incomes around this mean. 'Excluded' groups were based on those which did not have any or substantive (in the case of the US) social networks. In the case of Norway, an additional 'excluded' group (group 11) was included (on the grounds of low income). This was a pragmatic decision to increase the N of the excluded groups to enable the logistic regression analysis by vocational qualifications.

List of abbreviations

ACLP	Alvarez, Cheibub, Limongi and Przeworski [dataset]
ALMP	active labour market programmes
CRWBL	Centre for Research on the Wider Benefits of Learning
Edgini	educational inequality
EVS	European values survey
GDP	real income per capita
Gini	income inequality
ILO	International Labour Organisation
NDDP	New deal for disabled people
VET	vocational education and training
WVS	World values survey

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Skill shortages

Olga Strietska-Ilina

Abstract

This contribution reviews selected literature on skill shortages mostly at European level and partly in Member States, focusing on existing concepts related to skill shortages and on methods of measurement. It attempts to identify main skills and occupations in which shortages are reported, putting together results of available statistics, irregular surveys and analyses mostly at European level and as far as possible in Member States.

Skill shortages have adverse effects at company, regional, national and eventually European levels. They mostly affect technology – and knowledge –intensive industries with the highest potential for growth and positive spin-off on the whole economy and employment.

The following main reasons for skill shortages are identified: labour-market tightness – small labour reserve; economic, social and institutional conditions; skills mismatch; and deficiency in recruitment practices, work organisation, wage policies and working conditions.

The analysis shows that high-skill intensive as well as elementary occupations are expected in shortage but increasing demand for higher skilled people is expected across all occupations due to technological change and innovation. According to various reports from individual Member States, the current shortage occupations are: healthcare professions, IT specialists, managers, marketing specialists, financial analysts, scientists, engineers, teachers, construction workers, hotel and catering professions, truck drivers, childminders, sales representatives, cleaners, etc. Member States report labour shortages in similar occupations and the projections identify analogous shortages in terms of level of education and occupations throughout the EU (European Union). It is, therefore, important to recognise the skill/labour shortage as a European-wide problem which needs European-level policy measures.

The specific skills gaps are also similar across countries and sectors. Apart from technical skills which are occupation and industry specific, and apart from ICT skills and foreign languages, companies require social and personal skills and often rate them higher than technical and theoretical knowledge and formal qualifications. These skills are: team working, interpersonal communication, initiative, creativity, entrepreneurship, leadership and management, presentation skills, ability to learn, etc. Additionally the new discourse on the changing nature of skills required on the labour market reveals that personal characteristics appear most frequently, such as flexibility, motivation, loyalty, commitment, self-presentation (aesthetic labour).

The contribution concludes with several suggestions to improve the knowledge base on skill shortages in Europe, such as improvement of vacancy statistics, introduction of comparable enterprise surveys at national level or alternatively conducting a European-level survey on skill deficiencies and recruitment difficulties among companies, and further support to the project of developing a pan-European forecasting of skill needs.

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1. Introduction

1.1. Rationale and objectives of the study

The European summit in Lisbon set an ambitious target 'to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion'. After a mid-term evaluation of implementation of the Lisbon strategy, the agenda was refocused on growth and jobs. The renewed strategy puts emphasis on the development of productivity and competitiveness based on knowledge economy, research, innovation and development. A more dynamic European economy is expected to create jobs and secure high employment rates. Skill shortages and skill mismatches on the European labour market may appear as serious obstacles to implementing the agenda.

Research in Member States confirms that skill shortages have adverse consequences at various levels. At firm level skill shortages may result in higher wages, higher recruitment costs, lower productivity, lower quality, increased investments in current personnel, market losses, greater workload and pressure on current personnel, etc. Skill shortages may result in lower company competitiveness and, with a higher concentration at regional and greater spread at national level, could eventually deteriorate the overall competitiveness and prevent growth of the regional and/or national economy. Skill shortages prevent investments in and development of knowledge-intensive and innovative industries, for instance, economic sectors which have been recognised as a driving force of growth. This may eventually cause withdrawal to new markets outside the EU.

The challenge for experts and policy-makers, therefore, appears to identify geographical areas, sectors and occupations where skill shortages are most acute and most likely to have a significant negative long-term impact

on the European economy, so that policies to combat and prevent skill shortages can be designed and addressed effectively.

In the framework agreement of the European social partners on actions for the lifelong development of competences and qualification (2002) the identification and anticipation of competences and qualifications demanded on the labour market is considered the first priority. In the integrated guidelines for growth and jobs for 2005-08, the European Commission introduced a guideline 'improve matching of labour market needs' through several measures including better anticipation of skill needs, and labour-market shortages and bottlenecks (Integrated guideline No 20; European Commission, 2005a), and a guideline 'adapt education and training systems in response to new competence requirements' through better identification of occupational needs and anticipation of future skill requirements (Integrated guideline No 24; European Commission, 2005a).

1.2. Delimiting the scope of the contribution

The subject of skill shortages is rather broad and is covered by vast academic and policy-applied research literature, especially at national level. The wealth of literature in some Member States appears conceptually and methodologically useful but not helpful for shedding light on the skill-shortage situation at European level. National-level data and research conclusions are not genuinely comparable. At the same time only limited research results are available at European level. These are mostly performed at sectoral level and stay beyond the primary angle of this contribution.

It is, therefore, necessary to delimit the scope of this paper. It reviews selected literature on skill shortages mostly at European level and partly in Member States, focusing on existing concepts related to skill shortages and on

methods of measurement. The contribution attempts to identify main skills and occupations in which shortages are reported, putting together results of available statistics, irregular surveys and analyses mostly at European level and as far as possible in Member States.

1.3. Operational terminology and concepts

The lack of uniformity of definition has been a major problem in research of skill shortages. The term ‘skill shortage’ is used very loosely in Anglo-Saxon and European literature. Sometimes ‘recruitment difficulties’ imply all forms of skills problems; in others, ‘skill shortages’ is used as the overarching phrase. In the present contribution we shall be operating with several terms: skill shortages, labour shortages, skill gaps, recruitment difficulties, adopting the following definitions:

‘Skill shortage’ is a genuine lack of adequately skilled individuals available in the accessible labour market with the type of skill being sought and which leads to a difficulty in recruitment (NSTF, 1998). A skill shortage characterises the situation where employers are unable to recruit staff with the skills they are looking for at the going rate of pay (EEO, 2001b). This could result from basic lack of people (when unemployment levels are very low), significant geographical imbalances in supply (sufficient skilled people in the labour market but not easily accessible to available jobs), or a genuine shortfall in the number of appropriately skilled individuals – either at new entrant level, or for higher level skilled occupations (NSTF, 1998). The term, therefore, refers to both quantitative and qualitative shortages of skills. The term ‘skill shortage’ will be used throughout this report as an overarching concept, which substitutes more specific terminological expressions provided hereinafter.

According to the European Employment Observatory (EEO, 2001b) the term ‘labour shortage’ stands to denote the situation of an overall shortage of labour at national level across sectoral and occupational levels (although often the labour shortage is sector and occupation related), often used to refer to the quantitative lack of labour.

‘Shortage occupations’ define the situation of the shortage of labour with types and levels of qualifications suitable – as perceived by employers – for specific occupations. The term however is often used to describe the situation on the labour market in quantitative terms, where ‘shortage occupations’ and ‘surplus occupations’ are identified as the result of a macroeconomic forecast.

‘Skills gaps’ is used to describe the qualitative mismatch between the supply or availability of human resources and the requirements of the labour market. ‘Skills gaps’ exist where employers feel that their existing workforce have inadequate skill types/levels to meet their business objectives; or where new entrants to the labour market are apparently trained and qualified for occupations but still lack a variety of the skills required (NSTF, 1998).

‘Recruitment difficulties’ is an umbrella term incorporating all forms of employer recruitment problems, not specifying the reason. Such problems can be caused by skill shortage but also by poor recruitment practices, poor perceived image of the industry, low remuneration, or poor terms and conditions of employment, and can occur even where there are sufficient skilled individuals available and accessible for work. Terminologically we should distinguish ‘difficult-to-fill vacancies’ and ‘difficult-to-fill occupations’, where the latter manifest a higher concentration of recruitment difficulties in certain occupations either nationwide or geographically-bound and may be seen as symptoms of skill shortages.

2. Approaches and methods of measuring skill shortages

2.1. EU-level measurement – state of art

A major problem in identifying labour shortages and skill gaps in Europe is the absence of detailed and reliable statistics, with sufficiently long-time series, on vacancies, unfilled vacancies, the length of time to fill vacancies and specific qualitative requirements for the pursued workforce. While public employment services (PES) in some Member States have some or all of the necessary data, many Member States face the problem of incomprehensive coverage and lack of reliability of vacancies reported by PES. In spite of the obligation for employers to register vacancies in PES databases in many countries, penalties for disrespecting the requirement are rare, and thus vacancy statistics cover only 15-60 % of all vacancies according to various estimates (EEO, 2001a; EEO, 2001b, Strietska-Illina, 2003).

At the European level there is an attempt to improve and analyse PES vacancy statistics with the help of European network of PES and as a result of collaboration between national PES and the Directorate General for Employment, Social Affairs and Equal Opportunities of the European Commission (Ricciardi, 2004) ⁽¹⁾. The network and its expert group attempt to establish the European PES vacancy monitor (EPVM) to derive supplementary information on sectors with recruitment difficulties. The monitor, for instance, uses a stock-flow indicator of processing time (SFIPT) to interpret the average processing time of vacancies. Sectors with high SFIPT rates indicate potential recruitment

difficulties. The monitor works on ISCO 3-digit level, and although not all countries are involved and time series are not long enough, and regardless of many technical problems, work is in progress. There is a vivid interest among national PES to continue work on the monitor, which has been explained by a strong feeling of recruitment difficulties in certain sectors and occupations. The current database includes all quarterly data on vacancy notification from most Member States and it allows to do time trends on notifications by occupation and sector. The network appointed representatives to explore ways in which the usefulness of the database as a means of identifying skill shortages can be improved ⁽²⁾. This work at European level will hopefully bring some useful results in the near future after they are discussed with national PES representatives.

Another EU-level source on vacancy statistics is Eurostat's vacancy survey. The data are obtained from representative stratified sample surveys of businesses in participating Member States. The quarterly collection started in 2001 but only in a few Member States; for most countries only data from 2003 are available and to date not all Member States provide all data in a comparable format. The Eurostat vacancy survey includes several indicators: number of job vacancies, number of occupied jobs, job vacancy rate, job vacancy rate quarter on quarter change, job vacancy rate year on year change by the industrial classification of economic activities (NACE). Especially the job vacancy rate ⁽³⁾ (and its dynamic indicators when sufficiently long time series are available) would be a very useful tool to measure the

(1) See also the web page of the European employment strategy (European Commission Directorate General for Employment and Social Affairs) on PES: http://ec.europa.eu/employment_social/employment_strategy/pub_empl_services_en.htm [cited 14.3.2007].

(2) Information from John McGrath, FÁS – the National Employment and Training Authority in Ireland, member of the PES European network.

(3) The job vacancy rate measures the proportion of total job vacancies to the number of occupied posts plus number of job vacancies multiplied by 100.

demand for workers by sectors. Unfortunately at the moment only partial and provisional data are available at EU level and none are available by sector. The job vacancy rate using provisional data for EU-25 is 1.9 % (2006 second quarter) which means less than two job openings for every 100 jobs filled, with some variations across Member States showing above-average rates in Germany and the Netherlands (3 %), Estonia (2.9 %), Finland (2.7%) and the UK (2.3%)⁽⁴⁾. Too short time series make it impossible to produce the Beveridge curve – the tool to measure efficiency of the labour market⁽⁵⁾.

There are many other gaps in general data on employment, unemployment, earnings and other fields in standard EU-level statistics, which could be helpful as contextual and additional indicators to pinpoint the skill shortage situation in Europe. For instance, employment rate statistics by ISCO and education level, dynamic of earnings by NACE and in skill-intensive NACE, where only partial Member States level data are available, dynamic of earnings by ISCO, etc.

There is no major European-level enterprise survey on skill shortages and recruitment practices which could provide comparable results across countries and shed light on the situation from the employers' point of view. Many Member States use such surveys at national level (Section 2.2) and it may be useful for the future to consider a possibility of either harmonising these efforts or establishing a regular EU enterprise survey which would help to identify skill gaps, shortage occupations and recruitment difficulties, and ways to overcome those in Europe. The latter can be done using an existing EU-level regular business survey or using positive practice of ad hoc surveys.

For instance, the European Commission conducted labour-market surveys of employers and employees as part of its joint harmonised programme of business and consumer surveys. In 1999 the Directorate General for Economic and Financial Affairs commissioned a special ad hoc survey to gather the views of employers and employees on actual and expected labour-market evolutions and assessment of the work situation in manufacturing, retail trade and service sectors among old Member States (Boswell et al., 2004). A similar ad hoc survey was conducted in 2004 in EU-25 (Buscher et al., 2005). Among others the survey asked about plans for business expansion/reduction in the coming one to two years and related reasons including the impact of technological change on demand. The survey gathered information on the skills composition of employment in given sectors (however non-comparable between 1999 and 2004 surveys). This type of survey may, therefore, be useful for providing a more detailed breakdown of what sorts of skills are in demand, and how this is affected by technological change. Such data may also help inform models for projecting future demand or extrapolation (Boswell et al., 2004, Buscher et al., 2005).

There is no tool at European level to measure future shortages (and surpluses) occupations and types/levels of education, which could be done with the help of econometric forecasting by occupation and education. At European level forecasting has not been developed yet. In autumn 2005 a feasibility workshop on establishing European skill needs forecasting was organised by Cedefop's early identification of skill needs network (Skillsnet). Participants unanimously supported the idea of developing

(4) The above-average vacancy rate does not necessarily indicate labour-market tightness/labour shortages. It may result also from inefficiency of PES in matching the demand for workers and available jobseekers, or mismatch in the demand and supply of labour (structural unemployment). In composition with high employment rates and low unemployment (limited pool of jobseekers) a higher vacancy rate may signal labour-market tightness. This may be the case in the Netherlands, Finland and the UK. The data however are provisional and not very instructive since no information is available on specific sectors and occupations of potential tightness.

(5) The Beveridge curve is a graphical representation of the relation between unemployment and the job vacancy rate and can indicate easy match or severe mismatch of workers to employment (OECD, 2003). The lack of reliable data has been long a problem for producing the curve for EU and Member States. One attempt was the OECD Employment Outlook 2003, relying on individual data provided by national PES, which were not entirely robust and comparable. The analysis suggested the growing mismatch of vacancies and those looking for work in Europe as a whole and in particular in Austria, Belgium, Germany and Norway, whereas the curve indicated an improved matching situation in the Netherlands (see explanations about the Beveridge curve and related graphs in OECD, 2003, p. 31-35).

European level forecasts, concentrating on the demand side and using available standardised European data. Such an approach will only bring limited data in the short run but will help identify data gaps and methodological problems. Due to its focus on the demand side, information on shortage and surplus occupations/education categories will not be available as it can be measured only against supply. However, in the longer term the project intends to include the supply side and actively involve Member States in filling data gaps and in harmonising forecasting systems which differ substantially from one country to another and, therefore, are not comparable now. This project will, therefore, hopefully bring some comparable data on future skill shortages at European level in the long term.

Several EU-level reports produced employment projections and depicted possible areas of tension from the point of view of demographic changes that Europe would witness in the next 10 to 15 years. Effects of the ageing society on the labour force in the knowledge-based economy and possible labour shortages as a consequence was the angle of research conducted by the Institute for Prospective Technological Studies as a part of the foresight activities (Coomans, 2005). The study estimated employment growth based on current employment rates by levels of educational attainment and produced demographic projections and projections of labour supply. Another example of the supply-side projection was analysis of the prospective consequences for employment which derive from demographic trends across the EU (Alphametrics, 2005) based on analysis of changes in the structure of employment in its sectoral and occupational composition and associated skill requirements. These trends were confronted with the projected labour supply assuming certain GDP and productivity growth rates, and finally projecting labour-market imbalances.

An attempt to evaluate the situation of skill shortages across old Member States was made by the EEO, which gathered country

reports in 2001. The information provided by Member States was very useful, although it differed greatly in its character and structure and there was no intention to compare results. Some information from the analysis is provided below in the next section.

2.2. Approaches and methods used in Member States

Given the aforementioned lack of reliable vacancy statistics most Member States use alternative quantitative and qualitative methods and sources for identifying skill and labour shortages. Here we provide a short review of methods and approaches.

Employer surveys, which ask questions on the difficulties experienced in finding suitable personnel, are a widely used source of information on skill shortages in most Member States. Although questionnaires tend to include similar questions across Member States, their structures, samples and methods of data collection are very different and thus results are not comparable. The surveys are mostly used to produce an analysis of short-term skill shortages at national, regional, local and/or sectoral levels. However, evidence from such surveys is often criticised for not being representative and for producing a static picture. Both problems however can be solved by conducting surveys with a large and representative sample at regular intervals. The reliability of information gathered through surveys is very questionable when the data gathered are evaluated in quantitative terms because they present the situation not entirely objectively but as perceived by employers and thus usually arrive at inflated figures⁽⁶⁾. This causes major problems for interpreting the results of such surveys. Nevertheless, they can often yield some interesting information on employer perceptions of the skills of potential recruits as well as of any existing skills deficits within their organisation. The greatest value of such surveys is their qualitative approach in identifying skill gaps – information

(6) There is also evidence from case studies that skill problems are under-reported by respondents – not all skill shortcomings are necessarily recognised as such by managers in companies (Mason, 2004, p. 5). It is, therefore, difficult to conclude to what extent and on what aspects reporting from companies is either exaggerated or undervalued.

which can never be discovered by quantitative analysis or forecasting which uses occupations as the proxy for skills. The most active in using employers' surveys is the UK, which applies comparable questionnaires for skill audits commissioned regularly by the skills task force covering large employer samples. Data analysis is performed in combination with other available statistics (Box 1).

Box 1: Employers skills surveys in the UK

The first report of the national skills task force (NSTF) was published in 1998. It gave important definitions and framework for identification of skill shortages (NSTF, 1998). A regular employer skills survey (ESS) was introduced in 1999, and examined the nature, extent, causes and implications of skills deficits in the UK. The main objective was to provide policy advice on the priority skill areas to which resources should be allocated. The methodology was based on a telephone survey of 23 000 employers and a face-to-face survey of 4 000 employers, case studies, analysis of employment projections by occupation through 2009, estimates of rates of return on vocational qualifications and basic skills, and comparisons between Germany, France and the UK (NSTF, 1999). The later 2003 and 2004 surveys were commissioned by the Learning and Skills Council in partnership with Sector Skills Development Agency and the Department for Education and Skills. Both used representative sample surveys among employers in England (72 000 interviews in 2003 and 27 000 interviews in 2004). The 2003 survey was the largest and followed the ESS of 1999, 2001 and 2002. An earlier longer-time series on skill needs in Britain (1990-98) in combination with ESS provides valuable time-series data on employers' recruitment difficulties, skill deficiencies and workforce development activities in companies (IER and IFF, 2003). The most recent study revealed that although skill shortages continue to affect around a quarter of employers, overall there was a slight easing of skill gaps among existing staff and in several vacancies where skill shortages were experienced in comparison with previous surveys (LSC et al., 2005).

The survey is a valuable source of information on skill deficiencies and hard-to-fill vacancies, including the reasons, and it is a valuable tool for formulating short-term policy responses to skill shortages, including migration measures.

Source: NSTF, 1998, 1999; IER and IFF, 2003; LSC et al. 2004.

Deficiencies of vacancy data and their insufficient coverage of real vacancy posts sometimes are solved by analysis of job advertisements in media and on the Internet. For instance, the Federal Institute for Vocational Training (BIBB) conducted research of job advertisements for the IT sector in Germany in 2002. The analysis used a representative sample of job advertisements in the sector and a subsequent survey of the advertisers. The objective was to compare the skills and qualifications employers were looking for with what proved to be available in the market. The study found that about a fifth of job vacancies remain unfilled six months after being advertised. Employers described the lack of multiskilled specialists and soft skills as candidates' principal shortcoming (Cedefop, Bott, 2004). Studies of advertisements are often used as an additional tool to measure skill shortages along with forecasting and employers' surveys (Strietska-Iliina, 2003).

One of the most frequent methods of measuring future skill shortages is a forecasting macro model with an occupational and qualification matrix. Such models are widely used in the Netherlands (produced by ROA, see Box 2), Ireland (ESRI), Germany (WZB, IAB), France (BIPE), Finland (NBE), UK (IER) and others (Cedefop, Tessaring, 2003) (7). The models vary across countries but use in principle the same approach: they project demand side information derived from employment demand by industries and the supply side information on demography, education and training, comparing demand and supply, and eventually arriving at identification of future surplus and shortage occupations and qualifications. The main strength of such an approach is nationwide level of projection and a possibility of longer-term forecasts (5-10 years), predicting future skill shortages and thus giving policy-makers the potential for policy adjustment. The weakness of such forecasts is roughness of the information, level of aggregation and lack of information on quality of skills and qualifications

(7) ROA: Research Centre for Education and the Labour Market, Maastricht University; ESRI: Economic and Social Research Institute; WZB: Social Science Research Centre Berlin; IAB: Institute for Employment Research; BIPE: Economic Studies and Strategic Counselling; NBE: National Board of Education; IER: Institute for Employment Research, University of Warwick.

required. A serious deficiency of forecasting models is extrapolation of previous trends to the future, which appears especially flawed in the circumstances of reforming economies, policy interventions and exogenous shocks.

Box 2: **Forecasting model in the Netherlands**

The Research Centre for Education and the Labour Market (ROA) of Maastricht University has developed a forecasting model for the labour-market situation of different types of education on the Dutch labour market. Every two years ROA compiles forecasts of changes in the labour market in the medium term (for a period of five years) to give those making choices on further studies the best possible information on the state of the labour market. The projection is broken down into 34 economic sectors, 127 occupational groups and 104 types of education. The most recent forecast was produced for the period 2003-08. ROA's forecasts encompass expansion demand as well as replacement demand. An indication of future labour-market prospects for newcomers to the labour market is calculated, for each type of education, by comparing the expected flows of demand and supply, and surplus as well as shortage education categories are identified. The National Careers Guidance Information Centre (LDC) incorporates ROA's labour-market information in various information products for vocational and educational guidance. Besides various ministries (education, social affairs, economic affairs, agriculture), PES, educational institutes, personnel managers, advisory councils, etc., all use different parts of the information system for their decision-making.

Source: Cedefop, Cörvers, 2003.

Measuring adjustment behaviour as a reaction to skills shortages is another method to monitor skill shortages. Such measures (training provision, higher wage costs, lower productivity, etc.) mostly include self-observations of companies and thus are not totally objective and measurable. They are mostly based on employers' surveys mentioned above. The major difficulty in the analysis of behaviour as perceived by employers is to determine what situation can be regarded as normal. However, there are some attempts to measure

adjustment behaviour externally. One example was in Austria. The level of skill shortages was attempted to be mirrored in the number of job-to-job movements where a wage premium of more than 15 % was paid. The study⁽⁸⁾ was based on a microdata set (3.5 million employees and 350 000 employers). The inter-firm flows of employees were measured. According to the figures gathered there were 305 000 job-to-job transactions in Austria in 2000 and in 97 000 of these cases a wage premium of 15 % as paid to attract skilled workers (EEO, 2001b, p. iii). About 66 % of these jobs concerned employees with certified skills: 87 % of those white-collar occupations and 13 % blue-collar employment (EEO, 2001a, p. 41). The tighter the conditions on a skills market, the larger the share of inter-firm employee flows accompanied by wage rises (EEO, 2001a, p. 40-41). Such methodology, however, can hardly be used under the conditions of an ongoing wage adjustment to market conditions in transition economies or in conditions of economic restructuring. Furthermore, the method cannot record skill shortages which are covered by alternative, non-financial, arrangements (e.g. training the existing personnel, attracting foreign labour force).

Another method of determining skill shortages is comparisons (Borghans et al., 1997). This method is used in several countries (the Netherlands), but most often at international level. Such comparisons can be done across time, between different occupations, sectors, or skills, and between countries or regions. For instance, analyses of general employment trends by sector/occupation/skill level across countries or regions sheds light on employment demand at the aggregate level. Comparisons with competitive economies (the EU versus Canada, Japan and the US) or comparisons with sectors of expected similar development (trends in the ICT skills demand analysed from the perspective of other new technologies and their demand for skills) provide a useful

(8) The study was performed by Synthesis Forschungsgesellschaft, Wien, commissioned by the Federal Ministry for Economy and Labour.

benchmark. There are three major difficulties with such comparative approach:

- (a) lack of standard comparable data;
- (b) roughness (aggregate level) of the data suitable for comparisons;
- (c) lack of comparability of systems and contexts.

Nevertheless, if interpreted with caution, such comparisons provide interesting insights and offer useful information on the level of general trends.

Box 3: Elaboration of the system of identification of skill shortages in the Czech Republic: a complex approach

The study on skill shortages in the Czech Republic was conducted in 2002-03. The study identified main skills gaps, shortage occupations, and effects of shortages and advised on measures to tackle them. It combined available data and included several surveys. The study included analysis of trends in employment and skills by sectors, industries, occupations and education levels in the Czech Republic and, where possible, in comparison with selected Member States. The study further analysed PES vacancy statistics, conducted an enterprise survey among 900 enterprises, an opinion survey among PES counsellors in all labour offices in all regions, an additional survey of 277 private employment agencies (headhunters). The study also included content analysis of vacancy advertisements in selected printed and Internet media. It additionally analysed dynamic of wages by occupation. As deficiencies of individual data and methods were compensated by a complex approach, an objective picture of the situation of skill shortages was obtained. Some new aspects of the methodology may be included in the future when, for example, data from the econometric forecasting model, time series of vacancy statistics and others are available.

Source: Strietska-Ilina, 2003; Cedefop, Strietska-Ilina, 2004.

The most complex approaches to measuring and understanding the phenomenon of skill shortages include measurement and interpretation of results of various sources, such as econometric analyses, international comparisons of the number of skills available, a survey of employees and/or school leavers, a vacancy survey including corrective actions,

a survey among employers, measurement of trends in certain industries and occupations and verification of results by expert panels and social partners. Such approaches are mostly used at sectoral and regional levels and they are especially popular in France (network of regional observatories of employment and training (OREF) and some sectoral observatories, Céreq network), Spain (Forcem, regions), Ireland (Forfás), Portugal (Ministry of Employment), UK (QCA, IER, others), etc., (Cedefop, Tessaring, 2003)⁽⁹⁾. Such holistic approaches (Box 3) can measure skill shortages both quantitatively and qualitatively to provide information on the shortage and surplus skills, skill gaps, labour costs and other adjustment policies and perceived skill shortages by labour-market actors.

2.3. Sectoral studies in the EU

Although sectoral approaches go beyond the interest of this contribution, it is worth mentioning that sector-level analyses are rare examples of information provision on skill needs in general and skill gaps/shortages in particular at cross-country level.

For instance, the ICT sector was a good example of European-level collaboration of researchers, business and social partners. The sector considered facing significant skill shortages. It was estimated at the time that one million ICT workers were at shortage, mostly system designers and analysts as reported by Member States (EEO, 2001b, p. iv). Career space was created as a forum of cooperation and expertise in 1999 and started analysing the nature of skill shortages and gaps in the ICT sector. The major finding was that Europe needs a public-private partnership to improve the situation. It was also found that the skills mismatch was often addressed at the wrong level of education (graduate engineering level), whereas lower levels of training and skill shortages among users often were not adequately addressed (Niitamo, 2004).

(9) OREF: Regional Observatory of Employment and Training; Céreq: Centre for Research of Education, Training and Employment; Forcem: Foundation for Continuing Training; Forfás: expert group on future skill needs; QCA: Qualification and Curriculum Authority; IER: Institute for Employment Research, University of Warwick.

Subsequently the e-skills forum was created by the European Commission's Directorate General for Enterprise in 2002 as a forum where big ICT companies could share their views with other stakeholders in the industry to address the skill shortage situation. The forum started to develop e-skills framework to harmonise national good practices (Niitamo, 2004). A study on supply and demand of e-skills in the EU was prepared by a research team (RAND) on behalf of the European Commission and the European e-skills forum (Frinking et al., 2005). Among others, the study addressed skills shortage, mismatch and gap in e-skills, the latter being defined as three different types of skill: ICT user skills, ICT practitioner skills, and e-business skills. The study confirmed that in 2004 there were no widespread significant shortages of ICT practitioners at aggregate EU level and, therefore, many forecasts and predictions made earlier in 2001 proved to be wrong. Nevertheless, skill mismatch (gap) is the key issue rather than shortage in absolute numbers of ICT practitioners (Frinking et al., 2005).

Several sectors have been included in sectoral analyses in the framework of cooperation in Cedefop's international network on early identification of skill needs (Skillsnet). In particular

Skillsnet looked at the situation in tourism as a sector of high mobility in Europe where one can speak of an emerging European labour market. The work demonstrated that although tourism is one of the most dynamic sectors in Europe and it enjoys high growth prospects, success of its development may be hindered by the oft-reported skill deficiencies among the workforce. Tasks and activities in the sector are changing in line with technological, economic and social changes (Cedefop, Strietska-Illina and Tessaring, 2005).

Skillsnet also looks at new technology sectors, such as nanotechnology. Nanotechnology has a large range of applications, for example automobile industry, pharmacy, textile industry, chemical industry, medicine, etc. It offers enormous potential that can open up new production routes. The study on nanotechnology identified that Europe has already a shortage of specialists and scientists with tertiary education, and this shortage is expected to increase in the future. Experts predict that in three to five years the need for workers with related skills at intermediate level education and training will grow significantly (Cedefop, Abicht et al., 2006). Skillsnet plans to focus on other sectors, such as agri-food chains and forestry-wood processing chains, biotechnology, etc.

3. General employment trends

The overall employment rate in 2005 reached 63.8% and remained 6.2 percentage points below the employment rate target for 2010 set by the Lisbon agenda (European Commission, 2006a). Despite several economic and labour-market measures, employment in Europe responded slowly to an upturn in economic growth in the first half of 2004 that followed the slowdown in the 2000-03 period. Employment growth was however limited at 0.6 % and remained low (around the 0.5 % mark or below) for three years in a row (European Commission, 2004c).

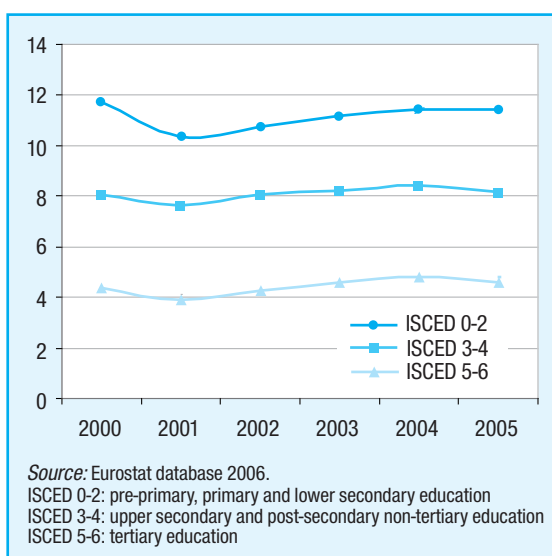
There is a close relationship between economic growth and labour-market performance and the slowdown in 2001-05 was responsible for lack of job creation. Economic growth in the EU averaged 2.4 % for 2004 as a whole (1.1 % in 2003) but dropped back to 1.6 % in 2005 (see Table 1A in annex). The forecast for 2006 and 2007 expects a GDP growth rate of 2.1 and 2.6 respectively. If the slowdown is over and economic growth will become more pronounced in the coming period, it will positively influence employment prospects, as aspired to by the renewed Lisbon strategy ⁽¹⁰⁾. Labour-market bottlenecks may, therefore, be expected to rise, especially in geographical areas of higher growth rate where employment demand may increase (new Member States but also Ireland and Finland): the pool of the unemployed and inactive population (especially older workers and women) may solve labour-market bottlenecks only to a certain degree.

Unemployment in Europe in 2005 remained high – at 8.7 % – and decreased only slightly compared to 2003, and youth unemployment remained twice as high – 18.7 % (EC, 2006a; 2005b). However, there is persistent unemployment and long-term unemployment and reported labour and skill shortages on the labour market reported by many Member States (see further in Chapter 4).

Only about 34 % of the unemployed population in the EU is low-skilled (Eurostat, second quarter 2005): it is, therefore, not only necessary to have an adequate level of skills per se, but also equally important that these skills correspond to the changing requirements of the labour market.

It is true that the higher the level of educational attainment, the lower the unemployment rate, nevertheless rates by level of educational attainment remained almost unchanged since 2000 (Figure 1). The data by country (Table 3A in the Annex), however, demonstrate that in several Member States (Czech Republic, Germany, Poland, Slovakia) the unemployment rate of the low qualified increased significantly depicting the structural changes in demand but also reflecting the overall deteriorating unemployment situation. The Member States which managed to significantly increase employment, also better managed to keep the low-qualified in employment.

Figure 1: **Unemployment rate by level of educational attainment between 2000 and 2005 in EU-25**



(10) It is however important to bear in mind that the impact of economic growth on labour demand is dependent on several factors, such as productivity growth, regulatory frameworks, working hours, and economic growth may not necessarily translate into more jobs (Boswell et al., 2004). Productivity growth is an important factor which may prevent creation of additional jobs. The factor will remain important especially in new Member States where economic restructuring is ongoing.

Also labour force survey data on employment rates in EU-25 between 2000 and 2005 (Table 1) demonstrate that the highest and the most stable rates are enjoyed by those with tertiary-level education, whereas the employment rate of low-qualified (ISCED 0-2) is more than twice

as low and it suffered from a further drop by 2.2 percentage points between 2000 and 2005.

The situation does not look so straightforward when analysing employment trends by occupation ⁽¹¹⁾.

Table 1: **Employment rate in EU-25 by level of educational attainment, 2000-05**

	2000	2001	2002	2003	2004	2005
Total (ISCED 1997)	51.1	51.4	51.4	51.4	51.3	51.8
ISCED 0-2	35.6	34.5	34.3	34.1	33.5	33.4
ISCED 3-4	63.3	63.1	62.8	62.3	62.0	62.2
ISCED 5-6	76.7	77.0	76.7	76.5	76.3	76.1

NB: ISCED 0-2: pre-primary, primary and lower secondary education;
ISCED 3-4: upper secondary and post-secondary non-tertiary education;
ISCED 5-6: tertiary education

Source: Eurostat database 2006, labour force survey data, 2nd quarter.

Figure 2: **Employment change by occupation in EU-25 in 2000-05 (000)**

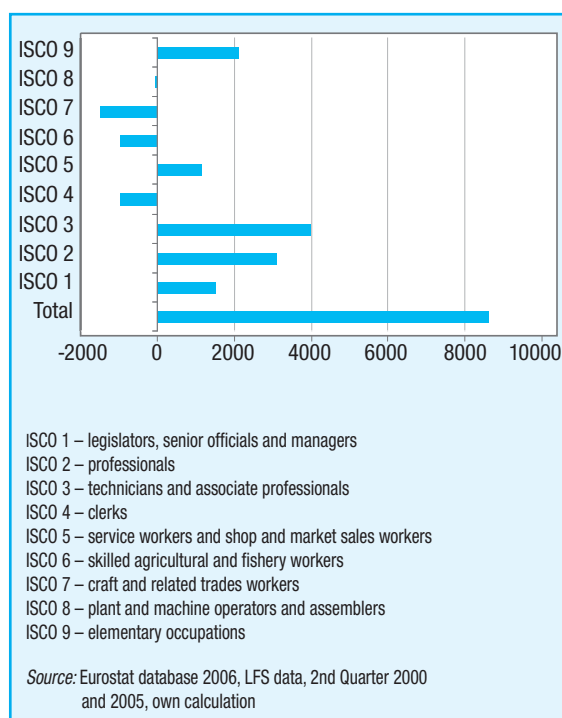
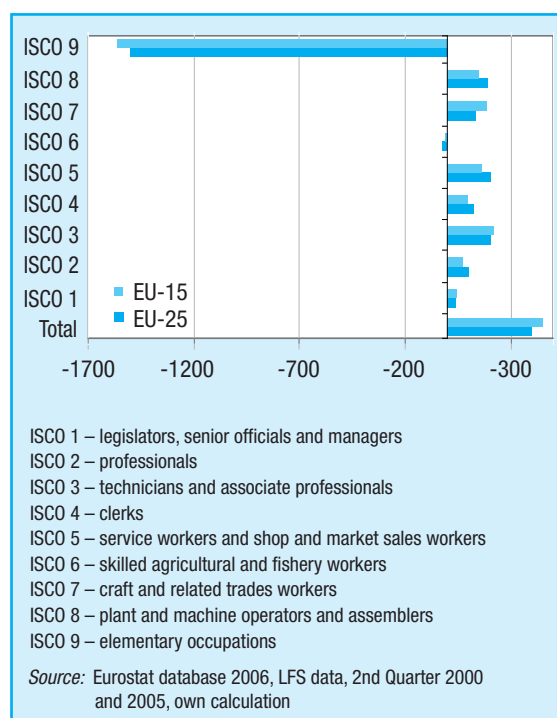
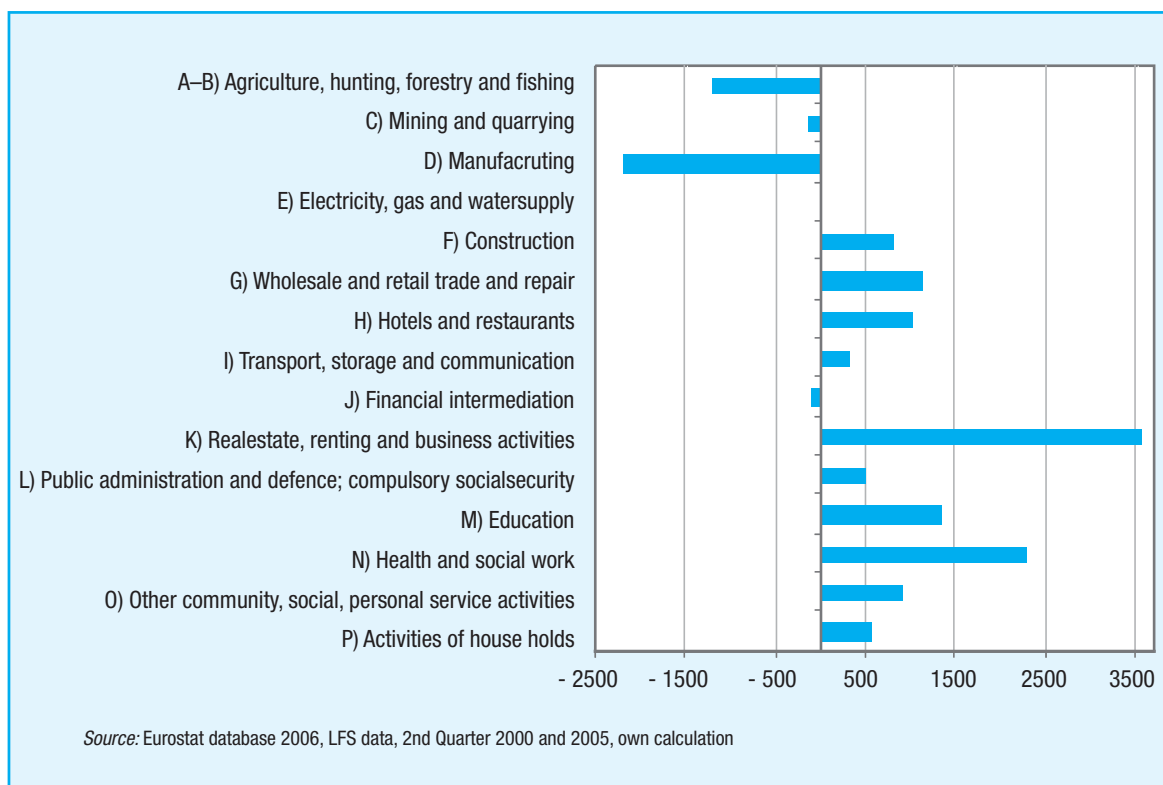


Figure 3: **Unemployment change by occupation of previous employment in EU-25 and EU-15 in 2000-05 (000)**



(11) ISCO-88 (international standard classification of occupations) distinguishes three groups according to skill intensity: low (ISCO 8-9: plant and machine operators and assemblers, elementary occupations), medium (ISCO 4-7: clerks, service workers and shop and market sales workers, skilled agricultural and fishery workers, craft and related trades workers) and high (ISCO 1-3: legislators, senior officials and managers, professionals, technicians and associate professionals). Besides, two groups of workers are differentiated, non-manual (ISCO 1-5) and manual (ISCO 6-9).

Figure 4: **Employment change by sector (NACE) in EU-25 in 2000-05 (000)**

Employment growth in the period between 2000 and 2005 (Figure 2) was particularly significant among skill-intensive occupations: technicians and professionals (ISCO 3 and 2), legislators, senior officials and managers (ISCO 1). Growth however was also notably significant among elementary occupations (ISCO 9). To the contrary, there was a decline of employment among medium-skill intensive occupations of craft workers (ISCO 7), agricultural and fishery workers (ISCO 6) and clerks (ISCO 4).

Overall a number of the unemployed in the EU between 2000 and 2005 according to occupation of previous employment (Figure 3) increased in all occupations with the exception of elementary occupations (ISCO 9) where a significant decrease of the unemployed was recorded. The situation changed little among skilled agricultural and fishery workers (ISCO 6) and legislators and managers (ISCO 1) and professionals (ISCO 2).

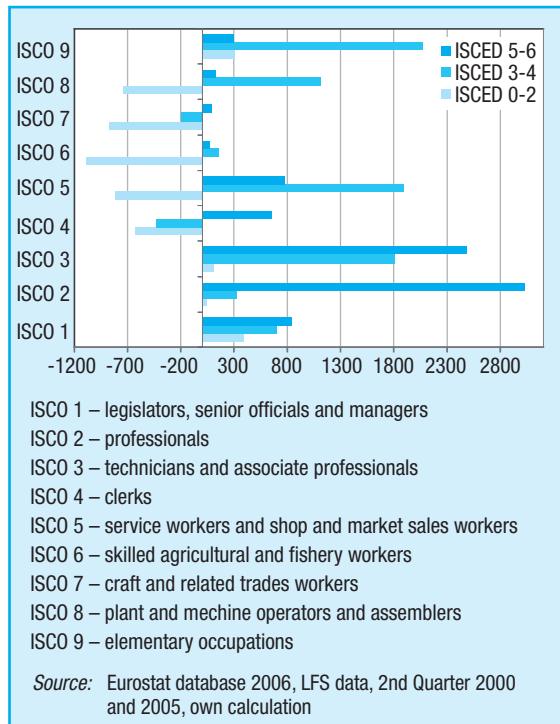
The employment change by sector (Figure 4) demonstrates significant declines in manufacturing

and agriculture, and to a lesser extent in mining and quarrying. Particular growth was enjoyed in the real estate sector, renting and business activities, health and social work, education, as well as in wholesale and retail, hotel and catering, and construction. Overall primary and secondary sectors demonstrate decrease in employment whereas services, both skill-intensive and less demanding for skills, and construction enjoy growth in employment.

Development of the skill composition of employment by occupation (Figure 5) demonstrates a drop in significance of low-qualified in majority of occupations but elementary ones, yet also surprising increase of low-qualified among legislators, managers, professionals and technicians, for instance the most skill-demanding occupations. Interestingly, the share of secondary and tertiary educated workers among elementary occupations is also significant.

Both trends may signify substitution of qualifications (occupational attainment mismatch) as a result of shortage of workers with relevant

Figure 5: **Employment by occupation and highest level of education attained (change 2000-05 in 000) in EU-25**

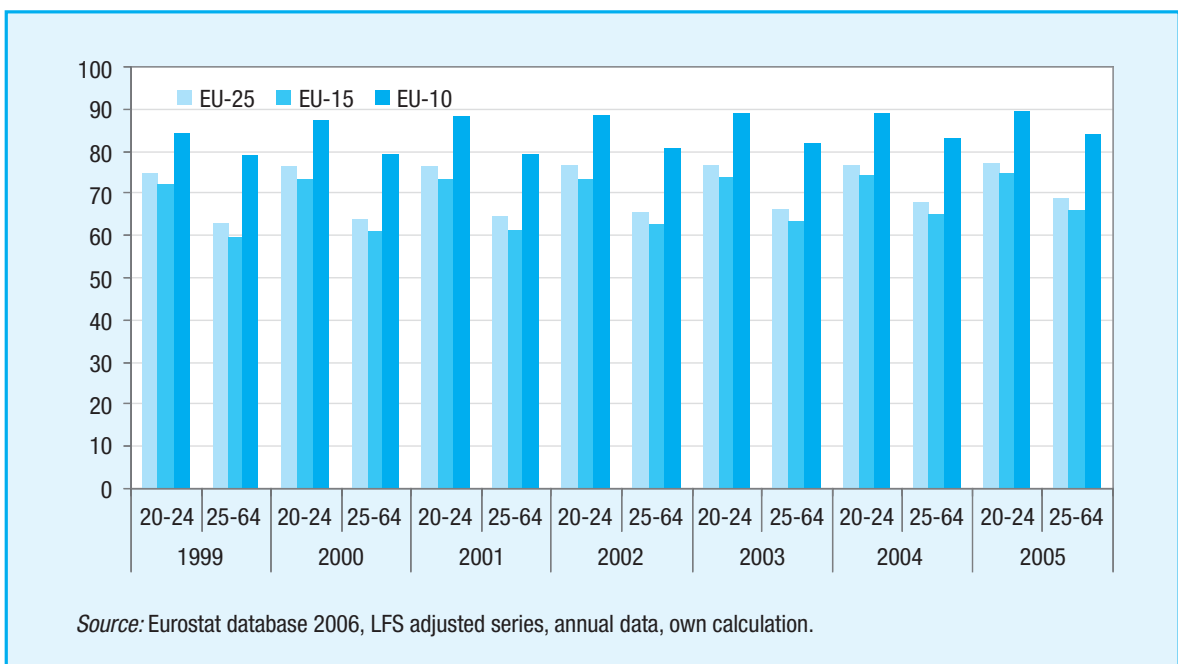


education as well as the changing nature of occupations per se where significance of formal qualification in employment is blurred. Redistribution of skills towards the higher end was most pronounced among technicians and professionals (ISCO 3 and 2). As it was mentioned earlier (Figure 2) these were exactly those occupations which enjoyed the highest growth in employment. Further, services and sales workers (ISCO 5) and clerks (ISCO 4), for instance medium-skill non-manual occupations, absorbed more higher-skilled personnel.

The skills composition of employment with a clear trend towards upskilling however may not only be linked to demand (pull factor) but also to supply of a higher educated workforce on the market (push factor ⁽¹²⁾).

Figure 6 shows that overall there was an increase in the population which attained at least upper secondary education (upper secondary and above) over time and that there is a positive intergenerational change towards higher levels of educational attainment among younger cohorts. Particularly high values are

Figure 6: **Comparison of the percentage of the population aged 20-24 and 25-64 having completed at least upper secondary education in EU-25, EU-15 and EU-10 between 1999 and 2005**



(12) A similar trend was discovered by the project Educational expansion and labour market (EDEX). Its conclusions showed that educational expansion has a strong supply effect and that demand for skills actually follows supply (Bédoué and Planas, 2003).

demonstrated in new Member States where 84 % of adult population and almost 90 % of young people aged 20-24 have achieved at least upper secondary education.

Figure 7: **Tertiary education graduates (in 000) in EU-25, EU-15 and EU-10 in 1999-2004**

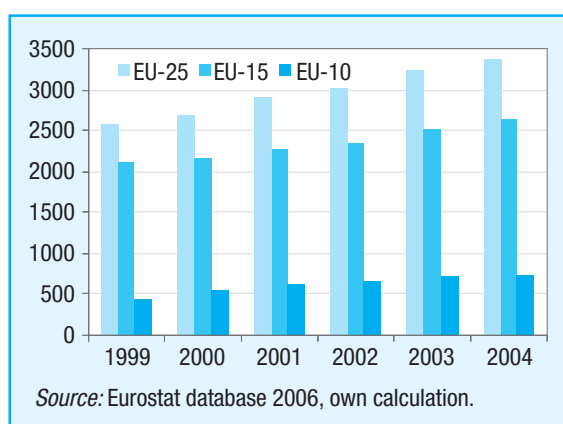


Figure 7 shows that overall EU-25 demonstrates clear and steady growth in numbers of tertiary-level graduates in recent years, but reveals that new Member States perform significantly worse than the rest of the EU in terms of absolute numbers. New Member States, however, enjoy spectacular growth with the percentage change between 1999 and 2004 far exceeding old Member States.

Therefore on the supply side the upskilling trend is clearly demonstrated. It is a question whether it is a reaction to the demand side and a response to technological change and innovation, or perhaps partially a social trend of paying tribute to education as a value in itself. In any case, leaving apart 'the chicken and egg' dilemma, it is necessary to recognise that the supply side represents a certain push factor in the development of skill composition in employment, given the change towards a higher weight of a better educated workforce in all occupations – those of low, medium and high skill intensity, manual and non-manual.

At the same time employment trends by occupation show positive developments for high-skill non-manual and for elementary occupations at the same time. From the point of view of sectoral employment, the sectors of services (both skill-intensive and labour-intensive) and construction have enjoyed stable growth in employment. If the trend persists in the future, one can imagine that these are the fields which would continue absorbing the workforce and may experience skill shortages. The general upskilling trend however proves that there is within-occupational change of skills composition.

4. Main reasons for skill shortages

A genuine attempt to measure skill shortages at European level, for instance cross-country and across sectors, has not been done. In the framework of the EEO a review of the situation of skill shortages and measures to tackle them in EU-15 was produced for the EEO annual conference in 2001 where country reports were presented, with a subsequent EEO spring review 2001 with a specific focus on a review of labour shortages and skills gaps in the EU (EEO, 2001a, p. 40). This is almost a unique document (to our knowledge) which attempted to gather information on skill shortages in Member States. Unfortunately the special-focus review has not been repeated since then and much of the information is by now outdated. The review did not follow systematic methodology allowing for comparison but given its unique character, it remains a valuable source of information. The EEO review mapped the picture of skill shortages and the information collection in EU-15, which are roughly summarised in Table 2 ⁽¹³⁾.

Member States report different reasons for skill shortages. First, labour-market tightness – small labour reserve linked to high employment levels and unfavourable demographic factors. At the time the differences in the scale of skill shortage problems among Member States were noted, with the Netherlands arguably showing the most significant problems in filling vacancies as the country approached structurally full employment (EEO, 2001b, p. iv). Variation was noted also among regions with a higher concentration of skill shortages in more industrialised regions (north Italy). This reason was reported by many countries, such as Austria, Belgium (Flanders), Denmark, Finland,

France (certain regions), Germany (certain regions in specific professions), Ireland, Italy (north), Luxembourg, the Netherlands, Portugal, Sweden, the UK (EEO, 2001a, 2001b).

Currently especially significant problems in filling vacancies linked to tightness of labour markets are noted in countries which approach structurally full employment (Nordic countries, the Netherlands and the UK).

The second reason for skill shortages reported by Member States is economic, social and institutional conditions. For instance, in large urban conglomerations where affordable housing is scarce and expensive, it appears a barrier to attracting workers (London). Demotivating social welfare system is another example often cited by Member States (Finland, Sweden). Inefficient work of PES is also sometimes mentioned (Italy).

The third type of reasons of skill shortages is skills mismatch – by level/field of qualification and/or specific skills and competences (skills gap). This is precisely the reason for coexistence of unemployment, including long-term unemployment, and large pools of vacancies, pointing at structural unemployment. Some countries reported coexistence of skill shortages calculated in the duration of unfilled vacancies and very high unemployment rates often concentrated in specific regions. For instance, Brussels demonstrated an example of structural skill mismatch in the regional labour market with the unemployment rate at the time of the review 19.1 % compared to the surrounding Brabant area with only 5.2 %. Over half hard-to-fill vacancies in Brussels were attributed, at least in part, to a lack of bilingual candidates. Brussels region also

(13) Another useful document was produced by OECD (Doudeijns, 2003) – a review of findings of national surveys and forecasts on skill shortages in selected OECD countries. The review, however, concerned only a couple of Member States and provided information from 2000-01 which differed sometimes from the one in the EEO review. To avoid confusion this information is not included in Table 2.

had the highest proportion of vacancies filled with workers with non-relevant education (occupational mismatch) further confirming the skills mismatch on the local labour market (EEO, 2001a, p. 38; 2001b, p. 5).

Mismatch is reported by a majority of countries as the main reason or one of the reasons for skill shortages – Germany, Spain, France, Greece, Italy, Luxembourg, Portugal, Finland, Sweden, the UK⁽¹⁴⁾. It is also important to underline that it is the type rather than the level of qualification which matters in the mismatch of supply and demand. Specific skills and competences appear more important than levels of qualifications.

The fourth reason mentioned sometimes is deficiency in recruitment practices, work organisation, wage policies and working conditions. Old Member States which particularly mentioned this reason were Germany, the Netherlands and Portugal. It is however important to note that this factor plays an important role in recruitment difficulties in all Member States – to a larger or smaller extent – especially among lower-skill occupations. Whether this has a direct connection with the problem of skill shortages is highly questionable. Nevertheless, this is another indication of market failure to solve the problem of recruiting pertinent personnel for specific business strategies.

Table 2: **Summary of findings: skill shortages in Member States EEO review (2001)**

Regional mismatch	Features	Reasons	Skills in shortage	Methods, sources
Austria				
Nationally the gap of certified skills is 16 000. Particular example of skill shortages in Styria	Increasing flow of vacancies into its register and increasing number of employers experiencing labour shortages. The adjustment in wages and in working conditions does not help to solve the shortage problem in certain sectors (e.g. health care)	Labour-market bottlenecks – scarce labour reserve	Qualified labour, specifically for IT professionals the gap is estimated at 6 000 with a high economic significance. Health care professions. Projected shortage by 2005 – 1 000 in technical professions, 3 600 in IT, 850 in commerce	Monitoring number of premium job-to-job transactions; projections
Belgium				
Brussels region – 19 % unemployment rate, and 52 % hard-to-fill vacancies; widening gap between Flanders and Walloon region	Cultural and language barriers, coexistence of high unemployment and labour shortages	Tight labour market in Flanders, skills mismatch in Wallonia. The type rather than the level of qualification matters in the mismatch in supply and demand	Lack of bilingual candidates in Brussels region. Shortages in industrial and service sectors. Shortages are more acute among managerial and highly specialised technical functions (two third), but also occupations such as bricklayers, truck driving, warehouse work. According to forecasts there will be shortages of engineers and IT specialists, and caring professions	PES vacancy registrar, newspaper ads, company surveys, projections and forecasts

(14) Ibid. Again new Member States were not taken into account in the study but mismatch appears in many documents as the major reason for skill shortages in many new Member States.

Regional mismatch	Features	Reasons	Skills in shortage	Methods, sources
Denmark				
	Rising demand for qualified labour, development of new technology	Risk of acute bottlenecks caused by economic upswing. In a longer term the perspective is dominated by demographic challenges which can lead to severe structural labour shortages	Nurses, school teachers, managers, academics, engineers. Projection 2005-10 – severe labour shortages are expected to develop for medium-cycle higher education specialists. Skill gaps in technical competences and craftsmanship, emphasis on the ability to learn and adapt to new tasks (functional flexibility) and on social competences, such as ability to cooperate, work in teams. Basic IT and language skills are given high priority	Time series of unemployment rates per educational and occupational groups and the same type of projections
Finland				
	Currently labour bottlenecks are usually local and sector specific, but there is coexistence of persistent structural unemployment and labour shortages. Skill shortages are increasing in some sectors and professions	Tightness of the labour market in certain areas, mismatch, demographic challenges may bring in future serious labour shortages, especially in IT and services sectors. Demotivating system of unemployment benefits	Recruitment difficulties reported in manufacturing and construction, and in services and commerce, for example mechanics, welders, carpenters, heating and ventilation specialists, childminders, sales representatives, cleaners. ICTs sector, electronic industry. ICTs specialists, engineering and Automatic data processing (ADP) experts are in particular demand, particular lack of IT engineers, electronic engineers and machine engineers	Mid- to long-term projections, surveys on skill gaps and shortages in certain industries, statistics of Ministry of Labour, trend barometers
France				
	Sharp increase in reported recruitment difficulties in industry and construction sectors in the period of 1990-2001; yet the unemployment remains high. Increasing tensions on the labour market for unqualified. Geographical concentration of certain industrial sectors combined with low workforce mobility. Demographic factors	Mismatch; tightness of the labour market in certain areas, difficulties in recruiting young qualified personnel	86 % of employers engaged in construction of public buildings identified recruitment difficulties; 56 % in the industry sector. IT, hotels, catering and food experience persisted recruitment difficulties (particularly cooks), clerical staff and technicians in insurance industry, workers, technicians and supervisors in electric/electronics industry; nurses, skilled and unskilled workers in construction, car industry	Specific survey; national survey by the National Institute for Statistics and Economic Studies (INSEE) on recruitment difficulties, employment trends measurement and development of indicators

Regional mismatch	Features	Reasons	Skills in shortage	Methods, sources
Germany				
West Germany, Southern Bavaria. Outflow of young and highly skilled from East to West Germany for over decade (net loss due to migration between 1989 – 1999 estimated 1.2 million for East Germany)	High unemployment in East Germany, low unemployment in West Germany. Projections show that the demand for higher qualifications will increase, and for medium and low qualification will decrease. Shortages are confined to specific professions and regions	Mismatch; demography (projected loss of working age population), serious bottlenecks in certain professional categories and regions. Poor wage/recruitment conditions adjustment for certain professions (teachers, hotel and catering)	Engineers, IT technologists, mathematicians, physical scientists, chemists, teachers, hotels and catering professions	Sample surveys; projections, Federal employment Service statistics, statistics from the training system, microcensus, analysis of ads
Greece				
	Poor information system on skill needs, poor communication between the labour-market actors and education and training providers	Demographic change, mismatch	University graduates with technological skills, secondary education technicians and technical assistants. Serious shortage in ICT professions and technicians, mechanical, electrical and chemical engineers, experts in electronics. Business administrators, project managers, marketing experts and financial analysts, technical professions with secondary vocational education and training qualifications	Labour force survey, unemployment and vacancy registrar, employers' surveys
Ireland				
	Labour supply reserve decreasing, re-immigration of Irish nationals not solving the situation, relying on external migrants	High employment growth – tight labour market	Construction workers, IT professions, engineering and science professionals, technicians and security personnel	Vacancy survey, analysis of employment trends, projections
Italy				
North – 43 % of businesses report difficulties in hiring suitable staff (as compared to 28 % in the South)	Coexistence of high unemployment and labour shortages	Mismatch (availability of undesirable on the labour-market unskilled workforce); ineffectiveness of PES	As small and medium-sized enterprises move to expansion involving lesser-qualified employees, labour shortages appear among lower qualified workers. Experts in mathematics, physics and natural sciences	Surveys, PES statistics

Regional mismatch	Features	Reasons	Skills in shortage	Methods, sources
Luxembourg				
	Scarce national pool of labour. Shortage of labour is an inherent feature of the Luxembourg economy, importing labour has a long tradition (30 % of the workforce come from outside Luxembourg)	Mismatch, tightness of the labour market	ICT professions, construction workers, intermediate-level technical and vocational qualifications, hotel and catering, domestic services	Macroeconomic projections, sectoral analyses and company case studies
Netherlands				
	Anticipated skill shortage in highly skilled labour	Tightness of the labour market. Deficiency in recruitment practices, work organisations, wage policies and working conditions	Trade, financial and business services, health and social care, education and civil service sector, areas of technological development, especially ICT	Vacancy statistics, employers' surveys, projections
Portugal				
	Since 1996 a drop in unemployment has been followed by an increase in the number of vacancies. The Portuguese economy production continues to demand lower skilled personnel, and some highly skilled remain unabsorbed, although long-term unemployment also recorded among low skilled with employability problems	Labour-market bottlenecks – scarce labour reserve, mainly due to mismatch. Low wages for lower level qualifications	Managers, health professions, construction and manufacturing workers, educationists	PES statistics, employers' surveys
Spain				
Madrid, Catalonia and Basque country attract internal migrant labour. Andalusia and Extremadura have the highest unemployment rates	Shortage of workers with particular qualifications in certain sector (IT, health/ social care). Preparedness of certain employers to recruit personnel without formal qualification. Coexistence of high unemployment and labour shortages	Mismatch	IT programmers and developers; IT analysts. Seasonal agriculture workers, tourism, construction, some specific industries (e.g. metal). Skill gap among managers, professional and administrative personnel in technical skills and computing	IT sector study of the Internet-based jobs database 26 sector case studies vacancy statistics wage analysis supply data

Regional mismatch	Features	Reasons	Skills in shortage	Methods, sources
Sweden				
Stockholm –slowdown of employment growth due to recruitment problems and a growing housing shortage	Technology development; rising levels of educational attainment among the population; over-educated push less qualified out of the labour market; number of low-skilled job declined and the pool of low-skilled people are unable to find employment	Mismatch; demotivating welfare system, demographic challenge	Occupations in caring and technical sectors. IT specialists. Construction workers, teachers, university level engineers, hotel and catering professions	Employers' surveys, medium-term forecasts, vacancy statistics
UK				
Relative tightness of labour markets in London and south-east, similarly – east and south-west. Growth in skill-intensive occupations projected in east, south-east and south-west	Skill gaps are spread out throughout occupational structure. Employment structure is shifting in favour of those occupations that require continuing learning	Demographic change, tightness in certain regions, mismatch (skill gaps mostly)	110 000 skill-shortage vacancies counted. Mostly in manufacturing, wholesale and retail trades and business services, construction. In occupational terms 40 % of skill shortages are found in associate professionals and craft and skilled occupations. Greater importance of skill gap, especially in generic skills, than labour shortage. Gaps are identified in communication skills, team working and customer handling, IT skills	PES vacancy statistics, several national, regional and sectoral surveys, Employers' Skills Survey, employment projections

Sources: EEO, 2001a; 2001b.

All four reasons are interconnected and sometimes impossible to separate from one another. For instance, the scarce labour reserve due to tightness of the labour market tends to concentrate on certain occupations, where employers complain that they cannot recruit personnel with suitable qualifications and skills. At the same time jobseekers with other qualifications are available on the market. Therefore, the situation can eventually be characterised as mismatch. In reality it is a combination and interplay of different factors, including demotivating welfare system and poor working conditions for certain occupations.

As already mentioned, skill gaps among existing staff and job applicants are reported as much more serious problems than labour shortages. But here comes an important conceptual issue. Where is the borderline between labour shortage and skill gaps? If the recruited workforce demonstrates skill deficiencies it might be a consequence of shortage of the workforce with adequate skills and qualifications. The same concerns skill gaps of job applicants: what is the primary reason for recruitment difficulties – missing skills or missing labour with the skills required? This is not just tautology. The issue is a conceptual

problem which affects methodological approaches to measuring skill shortages and even, more generally, measuring demand for skills. Pure quantitative or pure qualitative measurement might not be sufficient to see the entire picture. It is also necessary to consider also the employment context, such as high employment rates in particular regions, sectors or occupations in combination with high wages compared to the national average or with a high growth rate of wages that might indicate a real shortage of labour.

One major conceptual problem with the notion of skill shortages on the labour market is why the market does not solve the problem by market mechanisms. An underlying economic assumption is that if wages always adjusted to supply and demand there would always be equilibrium on the labour market. Labour-market adjustment however is limited and takes time because of inflexible wage structures, adjustment costs, lack of transparency, lack of coordination of education and vocational training systems with the needs of the labour market. The supply side of the labour market can only react to demand after some time, given that the education and training cycle takes up to five years.

Comparison of US/OECD wage differentials on skills demonstrates the importance of effects of institutions on employment rates and wages (Katz and Autor, 1999). Labour-market institutions in Europe have had a negative

effect through their inflexibility⁽¹⁵⁾. Institutional measures reflect exogenous political factors as opposed to responses by market forces. There were rising wage inequalities and educational and occupational differentials of a similar magnitude in the US and the UK in several decades, whereas in most OECD countries, especially in the EU, there was a pattern of declining wage inequality (Katz and Autor, 1999). Welfare policies, minimum wage interventions which favour low-income professions contribute to this.

Comparing EU and US labour markets Freeman (2004) also agrees that labour-market institutions in Europe have had a negative effect through their inflexibility. Institutional wage interventions and high social benefits have also reduced incentives to employment generation and higher returns on education. Job protection in Europe is too high and mobility is too low. '[...] EU labour markets suck compared to the perfect invisible hand market of economic theory. But so does the US labour market. The EU labour market fails on the quantity side of the market in the volume of employment created for those who seek work. The US labour market fails on the price side of the market in the pay for those who work and economic security for those who do not. [...] Like virtually every other economic institution created by humankind, labour markets are imperfect' (Freeman 2004, p. 1).

(15) Examples of such mechanisms are demotivating system of unemployment and social benefits, overprotective job security system, minimum wage interventions for certain professional categories and others.

5. Skill shortage and technological change and innovation

The debate on skill-biased technological change has intensified in the past two decades with the observation that employees with high levels of education and information technology are becoming more important in the workplace (Spitz, 2004). However, little evidence is available on how occupational skill requirements have changed in recent decades and whether any skill gaps and shortages may be linked to technological change. The analysis by Spitz (2004) investigates skills requirements in the workplace, measured directly by the task composition of occupations in west Germany. The empirical analysis aggregates individual-level data on task composition of occupations at the two-digit level in four waves between 1979 and 1999, asking individuals what they actually do in their jobs (direct measurement) with the help of shift-share analysis. The results show that skill requirements at a workplace increased substantially, shifting from cognitive and manual routine towards analytical and interactive activities, which requires educational upgrading in nearly 50 % of cases counting solely within-occupational changes in task inputs. Even those occupations which were the least demanding in 1979 now require a greater degree of complexity (Spitz, 2004, p. 22). Another important finding was that computer technology in the workplace substitutes less skill demanding – routine and manual – tasks, whereas it complements workers in performing non-routine cognitive and analytical tasks (Spitz, 2004). This is an important finding from the point of view of further redistribution of employment towards skill-intensive occupations, giving a particular pessimistic perspective to employees with low qualifications.

An earlier study (Chennells and van Reenen, 1999) surveyed the evidence on the effects of technological change on skills, wages and employment based on microeconomic

evidence from 70 empirical studies. The study confirmed a strong effect of technology on skill requirements increase across researched countries⁽¹⁶⁾ and wages growth across sectors. The effects on employment were found ambiguous, demonstrating growth effects of innovation with less pronounced effects from R&D.

From the point of view of the skill shortage problem it is important that skill-biased technological change under certain conditions may lead to crowding out of the low-qualified from the labour market and, therefore, contribute to coexistence of unemployment and skill shortages on the labour market (mismatch). In spite of evidence of increasing relative scarcity of low-qualified workers, their labour-market outcomes are deteriorating (also confirmed in Katz and Autor, 1999). The major driving force of this change is within-occupation (Spitz, 2004) and within-industry shifts towards skills upgrading (Katz and Autor, 1999) confirming skill-biased technological change.

If we compare Eurostat data of the educational attainment composition of main occupational categories in 2000 and 2005, the proportion of those having at least ISCED 3-4, and especially of those with tertiary education (ISCED 5-6) increased among all categories (see more in Chapter 3). Certainly the situation is influenced by the supply side of the labour market –availability of higher-level qualifications pushes lower-qualified out of the market. It is confirmed by the fact that the proportion of workers with ISCED 3-6 also increased among elementary occupations, which is an alarming signal for the low-skilled but also a sign of occupational mismatch and ‘brainwaste’ in Europe. It, however, deserves further research: does this tendency imply the changing character of certain elementary occupations or overqualification?

(16) US research was extended to the manufacturing sectors in six other countries – Denmark, France, Germany, Japan, Sweden and the UK.

An important finding was that increasing the quantity and quality of the stock of human capital is an important part of any growth-promoting policy and that technology-related skills need to be provided to a broad segment of the population (de la Fuente and Ciccone, 2003). This confirms that the upskilling trend on the supply side of the labour market is also an important push factor for technological change and innovation, and investment in human capital in general is at least as important as mere adjustment of education provision to labour demand.

There are two other equally important issues linked to technological change and innovation. First, technological processes may potentially lead in certain cases and for certain occupations to simplification rather than growing complexity of tasks⁽¹⁷⁾. The increasing proportion of those with intermediary level qualifications in high-skill occupations may confirm this tendency. On the other hand, simplification of tasks resulting from technological development is in no way similar to ‘automatisation’ and ‘robotisation’ of the Fordist economy: while individual tasks may become easier to handle, their overall composition leads to multiskilling /multitasking in the workplace, widely reported throughout Europe and among innovative companies in particular. The skill gap is, therefore, gaining in importance irrespective of individual task complexity.

The second issue is linked to competitive business and product strategies and demand for skills. Innovative firms do report skill shortages more frequently than others. Firms’ strategies to move upmarket in response to competitive pressures result in increase in employers’ demand for skills⁽¹⁸⁾. High value-added skill-intensive product strategies increase the demand for skills. This is important in the context of the Lisbon objective to build a knowledge-driven economy. Low-

value added strategies rely on low-wage/low-skill equilibrium. Concentration of the latter strategies in certain territories may lead to adverse effects on the economy⁽¹⁹⁾. However, would this mean that companies should be pushed to put greater emphasis on skills and high-value added product strategies? Research findings show that firms select strategies suiting best the market environment, finding their niche and reacting to certain constraints and client expectations (Wilson and Hogarth, 2003; Lloyd, 2005).

Box 4: An example from Australia

The study by Misko and Saunders (2004) examined companies and organisations developing innovative products and services in manufacturing environments. Most training needs did not differ from those in ordinary companies with the exception of areas of leading-edge technologies. Most high-level knowledge is provided by higher education, but vocational education and training (VET) also has an important role to play. The survey found that in such cases companies were often working with technologies in advance of that taught by VET. VET needs to work collaboratively with innovative companies in determining training needs, developing and providing customised training applicable to the leading-edge technology involved, and working collaboratively with vendors of products and materials to innovative companies, to help vendors develop specialised training, and train vendor trainers and provide access to training facilities (Misko and Saunders, 2004, p. 5). The survey also found that such companies often operate in extremely competitive international environments and their clerical, managerial and general support staff require some specific knowledge and skills, such as protection of intellectual property rights, foreign languages, ability to negotiate, legal issues.

Source: Misko and Saunders, 2004.

Some research also points out that low-skill/low-wage equilibrium may also be a result of firms adapting themselves to skill shortages where they change their skill demands accordingly

(17) For instance UK employers’ skill survey of 1999 found that standardisation which is often linked to technological change sometimes leads to deskilling. Examples of deskilling were found for instance in insurance and banking with the introduction of automation of household and personal insurance services systems (NSTF, 1999).

(18) See Mason, 2004. See also results of the national employers’ skill surveys in the UK, 2002/03 survey on skill shortages in the Czech Republic (Strietska-Ilina, 2003), materials of the European innovation scoreboard 2004 (Lorenz, 2004).

(19) The trap of low wage/low skills equilibrium actively discussed in the UK but also in many new Member States related to the rate of investments in the low-wage segments there.

choosing production technology and/or services that require relatively low degrees of skill intensity (Mason, 2004). In consequence the economy as a whole might experience specialisation in trades and production patterns where the comparative advantage is the price. Nevertheless, skill shortage is not the single constraint and opting for low-skill/low-wage strategy may be a rational reaction to other factors. Acknowledging the market will accommodate both types of strategies (skill-intensive high value-added and low-wage low-value added) leads to an important conclusion that upskilling alone will not create a knowledge economy and may lead to increasing overqualification of recruited workers unless other market mechanisms work to accommodate better high value-added/skill intensive strategies.

The discussion on polarisation of jobs ('McJobs' and 'MacJobs': Goos and Manning, 2003) denotes that intermediate occupations are becoming casualties of technological change. This may bring important consequences for vocational education and training at ISCED 3 level, if the demand for such occupations is really shrinking. Indeed in absolute terms in Europe demand is growing for high-skill occupations and elementary occupations. How this is linked to technological change remains, however, unclear. In fact 'good' jobs and 'bad' jobs are possible at both ends of the occupational ladder: according to Eurostat, the proportion of precarious employment with temporary contracts and part-time jobs increases among managerial, professional and technical occupations as well as among elementary occupations. As mentioned, the growing proportion of those with intermediate and tertiary level skills in elementary occupations may signal the changing nature of demand in these occupations. On the other hand 66 % of ISCO1 (legislators, senior officials and managers) possess only primary, secondary or post-secondary non-tertiary education (up to ISCED 4) out of which 16 % attained only up to lower secondary education (Eurostat online database). This may mean, rather than polarisation of jobs, the changing character of jobs and skill demand where soft and personal skills matter more than formal qualifications.

Box 5: A survey on changes in the workplace among Irish employees

A national survey was organised in Ireland into the experience and attitudes of Irish employees exploring workers' experiences and attitudes to the changes occurring in the workplace (see O'Connell et al., 2004). The survey was conducted on behalf of the National Centre for Partnership and Performance. The study demonstrated that there has been substantial change at work, particularly with respect to increased responsibilities at work, use of technology and skill demands, intensification of pace and pressure (O'Connell et al., 2004, p. 18). Flexible working hours, job sharing, working from home, part-time work are used more frequently. Introduction of new technology and related skill demands is particularly frequent in the public sector in Ireland. From the point of view of eventual skill shortages arising and recruitment problems, it is important to consider the preparedness of employees to accept the changes. About three-quarters of employees expressed their willingness to accept increased responsibilities in their jobs, new technology challenges at work and increased skill needs to carry their jobs. On the other hand, half of employees are unwilling to accept unsocial working hours, increased pressure and more close supervision (O'Connell et al. 2004, 131). Given the recognition that pay has risen along with the changing requirements among Irish employees, it is clear that eventual tensions in the workplace with a potential danger of recruitment difficulties, have to be solved by means of more complex measures on top of the pay rise.

Source: O'Connell et al., 2004.

Studying past experiences on introduction of new technologies (ICTs) indicates that the process was always accompanied by substantial organisational changes in companies such as instigation of self-management and decentralised decision-making where employees were empowered to make critical decisions (Christidis et al., 2002, p. 20). From the point of view of future development of the knowledge-based economy and technological change and innovation an acute shortage of people who can combine expertise in various types of technologies (automation and nanotechnology) with strong management and entrepreneurial skills is expected (Christidis et al., 2002, p. 19). This however does not only concern specialists with higher education and those directly involved in R&D, but also intermediary-skill personnel, especially when new technologies take a path into a production process and spread into other industries and occupations (Cedefop, Abicht et al., 2006).

6. Which skills? The changing meaning of skill

The specific skills which are reported missing among the current workforce or among job applicants (skills gap), and more generally skills in demand, are strikingly similar across countries and sectors. Apart from technical skills which are occupation and industry specific, and apart from ICT skills and foreign languages, companies require social and personal skills the most and often rate them higher than technical and theoretical knowledge and formal qualifications. These skills are well known: teamworking, interpersonal communication, initiative, creativity, entrepreneurship, leadership and management, presentation skills, ability to learn, etc. ⁽²⁰⁾.

The new discourse on the changing nature of skills required on the labour market reveals that personal characteristics appear most frequent, such as flexibility, motivation, loyalty, commitment but also self-presentation (aesthetic labour) which denotes not only psychological and emotional requirements but also certain expectations from physical appearance (Nickson et al., 2003; 2004; Bolton, 2004; Payne, 2000; 2004). The growing importance of this type of skill made Jonathan Payne speak of 'the unbearable lightness of skill' ('we are all skilled now') and hesitate about the weight of professional knowledge and competences in the modern economy (Payne, 2000).

It seems that companies recruit attitudes rather than competences and skills in their conventional meaning (Callaghan and Thompson, 2002). Indeed, are such skills alpha and omega for the success of businesses among drivers of change in the knowledge-

Box 6: **Research on initial experiences of young people at work**

Employers often complain about the quality of young school leavers, about lack of loyalty and long-term commitment to the company. The research conducted by the Leeds Metropolitan University (Johnson and Burden, 2003) was concerned with initial experiences of young people at work. By interviewing directly young people prior to entering their first job and again three to six months later, as well as by interviewing their employers, researchers found that employers mostly find gaps in 'softer' skills and behavioural attributes with a less prominent role played by formal qualifications. At the same time both young people and employers agreed that educational institutions were focusing too strongly on academic skills and qualifications at the expense of employability (Johnson and Burden 2003, p. vii-viii). Those young people who have had some work experience through work placements during their studies or part-time work, were better equipped for the world of work. The most cited skills sought (gaps) were willingness and ability to work (reliability, punctuality, hard work), willingness to learn and 'trainability', initiative, good communication and interpersonal skills, IT skills (Johnson and Burden, p. 14).

based economy? Should education and training primarily focus on these requirements? Are these skills trainable or are they part of social and cultural background, where the family and the social origin have a large role to play? Does this potentially lead to deterioration of the role of initial education in the life of individuals? What is the role of practical training in meeting individual with employers' expectations during the education/training cycle? These are important questions for future research.

(20) See EC (2004b), NSTF reports 1999-2004, contributions to Schmidt et al., 2003, 2004, etc.

7. Labour shortage

It is important to note that not only growth per se and the subsequent net job creation generate demand for the workforce. The current demographic trend of the ageing workforce has at least equally important impact on employment. An ageing society and thus increasing share of the replacement – as compared to the expansion – demand for employment, is significant in terms of numbers: according to some estimates 2 to 3 % of those employed retire each year, which is perhaps two to three times more than the net additional jobs likely to be created in the coming decade (Alphametrics, 2005).

From the point of view of potential skill shortages it is, therefore, important to analyse

in which industries and occupational groups the workforce has a high share of older workers likely to retire in the coming years.

As we can see (Figure 8) the ‘ageing’ sectors of economic activity (those that employ more people over 50 years old) are agriculture, education and healthcare and social work. According to general employment trends (Figure 4), the shifts in employment indicate shrinking in the sector of agriculture but good growth prospects in healthcare and social work and in education. Labour shortages, therefore, may be expected in these growth sectors in Europe, which is confirmed by reports from the majority of Member States.

Figure 8: **Employment by age groups and economic activity**

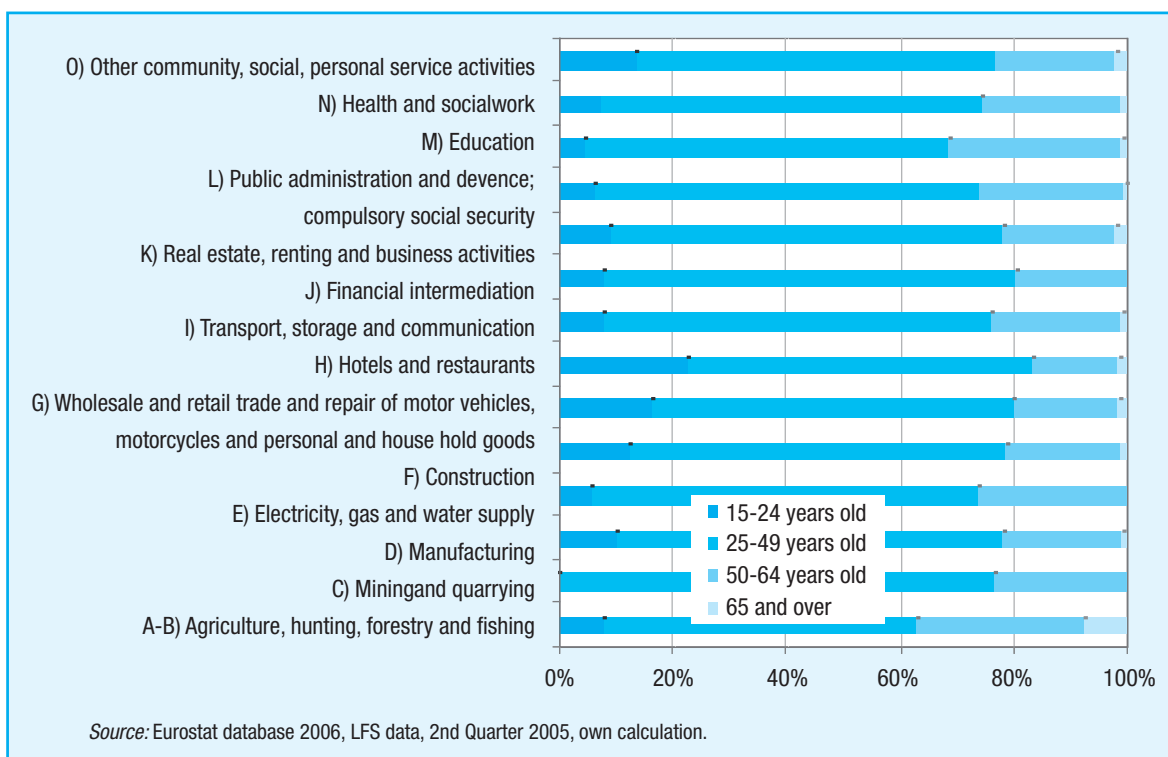
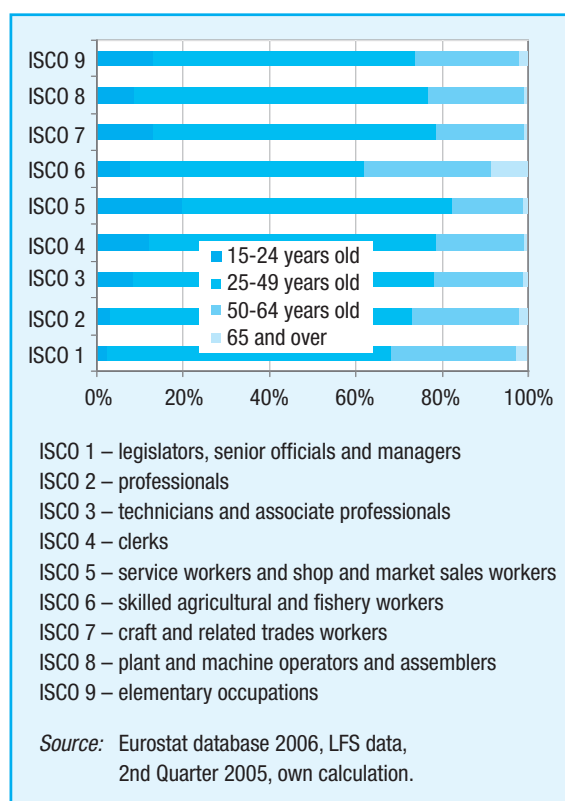


Figure 9: **Employment by age group and occupation (%)**



The 'ageing' occupations (those where workers over 50 years old represent roughly 25 % or more – Figure 9) are agricultural and fishery workers (ISCO 6), legislators, senior officials and managers (ISCO 1), professionals (ISCO 2) and elementary occupations (ISCO 9). Of those, employment growth was particularly significant for professionals (2), elementary occupations (9) and legislators, senior officials and managers (1) in the mentioned order (Figure 2). These occupations may experience shortages of labour linked to the demographic situation.

According to reports from individual Member States (Table 2) the current shortage occupations are: healthcare professions (doctors, nurses, care for old/disabled people), IT specialists (mostly system designers and

analysts), managers, marketing specialists, financial analysts, scientists, engineers (mechanical, electrical, chemical), teachers, construction workers (carpenters, bricklayers, welders), electricians, heating and ventilation technicians; hotel and catering professions (cooks, waiters), truck drivers, childminders, sales representatives, cleaners, etc.

The projection of demographic trends for employment and jobs by Alphametrix (2005) coincides with the above-mentioned trends and country records, confirming that the shift in demand towards higher-skill sectors and occupations relative to supply for more highly educated people may lead to labour-market imbalances, especially in new Member States. This trend, however, is accompanied by steady demand for elementary occupations. The projected labour shortage, therefore, is not limited to high-skill but also to low-skill activities.

Another long-term employment/demographic projection (up to 2020) by level of education predicts serious shortage of tertiary education workforce due to lack of capacity of education to compensate for demographic deficits which could bring negative consequences for economic growth in all Member States (Coomans, 2005). Only where generational progression in educational attainment is the highest (Spain, Cyprus, France, Ireland, Poland and Portugal) can increased participation in tertiary-level education compensate for demographic stagnation or decline. However, demographic decline may be so steep that educational progression may not suffice to compensate, with Germany, Italy and Finland identified in the worst position (Coomans, 2005).

Eurostat data on job mismatches among school leavers⁽²¹⁾ also demonstrate that the higher the level of educational attainment, the lower the possibility for mismatch in employment⁽²²⁾ (annex: Table 5). Further, the fields of education which are stipulated

(21) Youth transitions survey, labour force survey 2000 ad hoc module, Eurostat, 2005.

(22) Eurostat's measurement of job mismatches counts the percentage of school leavers working in a job outside their field of education. This mismatch is of a different nature than mismatch between demand and supply on the labour market which can cause labour/skill shortage.

as in shortage demonstrate in general lower rates of mismatch (engineering, construction, health and social care, services ⁽²³⁾). Country variations however are very high, sometimes still demonstrating relatively high mismatch (in construction in Italy 43 %, Belgium 37 %; in health and social care in Greece and in Spain 35 %; in services 81 % in Denmark, 46 % in Italy and 40 % in Hungary). If these are the fields in shortage in the same country (such as the case of construction workers in Belgium) the job mismatch may indicate either the skill gap or labour-market failure to provide conditions to attract employees into the same field. The job mismatch situation in shortage occupations in Europe may also be partially explained by the low geographical mobility of the workforce which could ease the situation in other countries at least to some extent ⁽²⁴⁾.

To conclude, given the general employment and demographic trends, occurrence of labour shortage can be expected in the higher end of skill-intensive occupations as well as among elementary occupations. The within occupational shifts towards higher skills indicate however that demand for higher skilled people can be expected across occupations due to technological change and innovation. Member States report labour shortages in similar occupations (Table 2) and the projections (Alphametrics, 2005, Coomans, 2005) identify analogous shortages in terms of level of education and occupations throughout the EU. It is, therefore, important to recognise the skill/labour shortage as a European-wide problem which needs European-level policy measures.

(23) Naturally more regulated fields of activities presume lower mismatch, such as in the field of healthcare. Nevertheless, the rates are sometimes surprisingly high even in such fields.

(24) Labour migration inside the EU should however be tackled with special care to avoid the situation where Member States lose specialists whom they need the most themselves. This will be discussed further, as a measure to tackle labour shortages.

8. Consequences of – and ways to tackle – skill shortages

8.1. Adverse effects of skill shortages

Skills shortages, skills gaps and other recruitment difficulties have significant economic consequences for affected employers. Skill shortages can be highly damaging to company productivity, turnover and profitability, and certainly to organisational competitiveness. Skills shortages may prevent employers from filling posts or make employers accept staff with suboptimal skills. The result will usually be that the organisation adopts suboptimal working arrangements, and endures production cuts, lost orders, and dissatisfied customers (Haskel and Holt, 1999).

Concentration of skill shortage problems in regions damages regional productivity and competitiveness and in aggregate, the potential exists for serious knock-on effects for the whole economy. Research in different countries shows that skill shortages mostly affect technology- and knowledge-intensive industries with the highest potential for growth and positive spin-off on the whole economy and employment. The damaging effects of skill shortages, therefore, multiply when they occur in sectors with the highest value added for economic competitiveness based on qualitative factors and productivity. For achieving higher productivity companies build their strategies on improved use of modern technology, product and process innovation, research and development. Such companies require labour with a higher skills profile. Lack of skills may also reduce investment incentives (both national and foreign) where innovation, research and development are involved. Thus when skill shortages occur in occupations with higher qualification levels, the potential damage for the company and the overall economy is higher.

Low-skill/low-wage equilibrium, discussed earlier, may also be one of the consequences of

skill shortages. Companies adapt themselves to the situation and change their production technology and/or services that require relatively low degrees of skill intensity. In consequence the economy as a whole might experience specialisation in trades and production patterns where the comparative advantage is the price. This effect is called in economic literature a 'low skills trap', where the economy resides in a vicious circle of low productivity, low training and a small number of skilled jobs (Redding, 1996, Haskel and Holt, 1999). Under such conditions employers might no longer be aware of experiencing skill shortages and the market finds itself in equilibrium and thus cannot solve the problem without intervention of external forces (state, region). For countries where competitiveness is still often based on the price factor (new Member States, acceding countries), it is important to avoid getting into the 'low skill trap' and becoming a European manual work plant.

Skills shortages may force employers to raise salaries to attract suitable candidates, thus pushing up costs (either raising prices or reducing profitability). Further, offering higher wages does not always solve a problem. In case of severe labour shortage in certain occupations or sectors the problem persists and can be only partially or temporarily solved by higher wages. Higher wage levels for skilled workers may also cause a wider wage differential by skill: if wages are flexible, the wages of skilled employees may rise relative to unskilled ones, since firms may raise the corresponding wage levels to attract some of the few available skilled workers (Lucifora and Origo, 2002). This may result in several consequences: first (negative), rising inequalities and reduced social cohesion; second (negative), pushing the inflation rate upwards and thus having a negative impact on economic competitiveness, and finally, third (positive), relative higher returns on investments into education and training and thus a higher interest in such investments from individuals.

Increasing wages often goes hand-in-hand with or is altered by greater demands on the firm's personnel, more intensive work, higher workload, overtime, and demands for retraining or upskilling. As a result companies report greater stress on employees and a damaging morale in the organisation, which was the case for instance in some 50 % of UK companies facing skill shortages (Haskel and Holt, 1999).

Skill gaps also cause higher unemployment among unskilled or low-skilled workers: skill-biased technical progress decreases firms' demand for unskilled workers, who might be more likely unemployed if they do not adapt their skills to firms' new requirements (Lucifora and Origo, 2002). If we consider the effects of skill shortages and skill gaps not only from the perspective of unfilled vacancies but also from a broader perspective of costs of deteriorating effects on the employment situation, the costs appear high. Some research suggest a cost as high as 6.9 to 7.7 % of GDP on average for existing skill gaps in selected Member States ⁽²⁵⁾ (Lucifora and Origo, 2002, Table 6, 1999 data).

8.2. Measures to tackle skill shortages

Considering the degree of possible effects of skill shortages on national economies and, therefore, on European economic performance as a whole, Member States introduce policies to tackle the problem. There is a large variety of measures implemented in recent years.

PES and other government authorities seek to improve the data sources on skill mismatches, in particular by improving the databases on vacancies (all Member States) and the information on school-leavers (Austria, France). In particular they try to follow the length of vacancies unfilled, historic data on vacancies,

including specific qualification and soft skills requirements per vacancy, follow-up surveys on school-leavers at all education levels, etc.

Most Member States attempt to measure skill shortages and analyse skill gaps to have space for adjusting lifelong learning policies and strategies. Many Member States also attempt to forecast skill needs for a medium and long term to enable a better match of the supply of initial education and demands of the labour market given the long and asynchronous time periods of adaptations of supply and demand. These efforts have brought significant improvements in many countries, especially the ones where forecasting and analytical efforts are tightly linked to providing information, counselling and guidance (the Netherlands). This information helps young people make right choices and decision-makers make right financial allocations to courses, modify curricula and introduce new courses which lead to new and changing qualifications. Such information also feeds into decision-making on labour immigration policy (Germany, Ireland and the UK) and special measures to attract workers for certain occupations or with specific skills.

A proactive targeted external mobility – immigration policy by, for example, increasing green card quotas for immigration with particular skills profiles is another measure to tackle labour shortages (green card policy in Germany ⁽²⁶⁾, proactive immigration policy for shortage sectors and occupations in Ireland and the UK, job-card scheme in Denmark). Cross-border mobility could ease the situation significantly but there are still many limitations, such as cultural and language barriers as well as prejudice towards foreign labour – especially the type coming from central and eastern Europe with a well-spread fear of a dumping effect on wages and social conditions. Furthering measures of flexible and easy process of recognition of foreign qualifications, as well as completion

(25) Measured as cost of vacancies + cost of unemployment in the following Member States: Belgium, Germany, Denmark, Spain, Finland, France, the Netherlands, Sweden and the UK.

(26) The evaluation of the German green card policy for ICT specialists gave mixed results. In the first phase not enough specialists came to register (Doudeijns and Dumont, 2003). At a later stage, however, it was discovered that the need of 250 000 employees in the ICT sector by 2005 was an overestimation. The ICT sector proved to be vulnerable to cyclical economic effects and part of labour immigrant found themselves unemployed. Overall however the policy cannot be assessed as a complete failure, because it has helped put the question of labour immigration prominently on the political agenda in Germany (Doudeijns and Dumont, 2003).

of mutual recognition of qualifications inside the EU, accompanied by social benefits and pension rights transfer along with employment across borders and by the eventual completion of a single market in services sector – are all expected finally to contribute to improvement of labour mobility in Europe.

While the issue of mobility and labour force migration is beyond the scope of this analysis, it is important to underline that the major source of solving labour shortage problems in old Member States, especially after the 2004 enlargement, were labour immigrants from new Member States. In most cases they fed into exactly those occupations which were mentioned in shortage (Traser and Venables, 2005). While the overall effects of opening up borders after EU enlargement were evaluated as positive, depicting easing the tightness of labour markets in Ireland, Sweden and the UK on the one side, and helping to alleviate high unemployment in new Member States (especially Poland and the Baltic countries) on the other side, no objective evaluation has been given to the effects on the European labour market. This was mostly young and mobile labour coming from central and eastern Europe, often overqualified for the jobs offered in the west. ‘Youthdrain’ and ‘braindrain’ in new Member States and ‘brainwaste’ at European level should also be counted as effects. The most alarming however is the fact that new Member States were sending workers in mostly the same occupations they themselves experience shortage. Geographical mobility, though still very limited in Europe, tends to solve skill shortages in some regions and sectors at the expense of others. European-level problems need European solutions. It needs joint labour immigration policy, and given the demographic challenge in all EU-25, it probably needs labour immigration from third countries.

Measures to encourage internal mobility in individual Member States have been explored only by few Member States (the Spanish Ministry of Labour and the regional authorities of La Rioja region help the relocation of workers and their families by guaranteeing job quality and stability; EEO, 2001b).

Member States attempt to increase employment rates of skilled people (women,

older workers). For instance in Denmark measures encouraging various flexible forms of employment instead of full retirement were introduced (EEO, 2001b). Other measures include attempts by PES in improving job matching and in providing more training and retraining measures in the fields mostly affected by skill shortages, training provision in communication with employers, (re)designing skill profiles of qualifications required by employers in fast developing sectors and new occupations, increasing individualisation in matching and placement services (individual action plans), etc.

Finally, all Member States attempt more long-term and targeted planning of provision of education and training (including retraining) at all levels to tackle the problem of skills gaps and skill shortages. An integrative systemic approach to lifelong learning encourages various players to cooperate more actively in achieving agreement on where education and training go. Companies and social partners realise that education and training planning is an existential matter for the success of businesses and participate more actively in assisting school authorities and PES in the process. At regional level round tables are organised with sectoral representatives, PES, training providers (EEO, 2001a, p. 51, Belgium; France). Emphasis ranges from incorporation of generic/social skills into initial education and training to improvement of access to and boosting of provision of tertiary level education.

At company level employers introduce recruitment abroad, job rotation plans for personnel retraining, diversification of recruitment channels, on-the-job training and collaboration with schools, temporary work, poaching workers from other enterprises, subcontracting, promoting internal mobility of personnel, improving working conditions, rearranging the organisation of work, adjusting working time, improve image of the company (EEO, 2001a, p. 52).

Sometimes employers try to solve skill shortages by outsourcing production to new regions or countries. This is mostly the case in large firms. Such solutions involve additional reallocation costs for companies and costs for

cultural and social integration of individuals (mostly imposed not only on the company but also the State). When companies offer attractive salaries or packages (family allowance, moving expenses) to attract qualified labour from other firms, they in fact create a cycle of knock-on difficulties and 'braindrain' among other firms/regions.

In short, with all the varying range of measures across Member States, what is needed, as stated in the Austrian report to EEO, 'a few more green

cards and a lot more education and training!' (EEO, 2001a, p. 44). It is however important to note that some recruitment problems cannot be solved by education and training measures alone and have to be accompanied by measures such as better rate of pay, better economic and social conditions, including family-friendly provisions, improvement of childcare facilities to attract more women into the labour market, improved housing, etc.

9. Conclusions and recommendations for policy and future research

9.1. The damaging effects of skill shortages are multiplying from company through national to European level

Skill shortages have adverse effects at company, regional, national and eventually European levels. The problem of skill shortages can be highly damaging to company productivity, turnover and profitability, and organisational competitiveness. Skill shortages force employers to raise salaries to attract suitable candidates. Higher wage levels for skilled workers cause a wider wage differential by skill. This may result in rising inequalities and reduced social cohesion, and push upwards labour costs and inflation thus having a negative impact for economic competitiveness. Concentration of skill shortage problems in regions damages regional productivity and competitiveness and in aggregate, the potential exists for serious knock-on effects for the whole economy. Skill shortages mostly affect technology- and knowledge-intensive industries with the highest potential for growth and positive spin-off on the whole economy and employment. The damaging effects of skill shortages are, therefore, multiplying when they occur in sectors with the highest value added for economic competitiveness.

9.2. Reasons for skill shortages

Member States report different reasons of skill shortages:

- (a) labour-market tightness – small labour reserve linked to high employment levels and unfavourable demographic factors;
- (b) economic, social and institutional conditions (in large urban conglomerations where affordable housing is scarce and expensive,

it appears a barrier to attract workers; demotivating social welfare system; inefficient work of PES);

- (c) skills mismatch – by level/field of qualification and/or specific skills and competences (skills gap) – which explains the coexistence of unemployment, including long-term unemployment, and large pools of vacancies, indicating a situation of structural unemployment;
- (d) deficiency in recruitment practices, work organisation, wage policies and working conditions.

9.3. Expected shortages in high-skill intensive and elementary occupations but demand for highly-skilled people expected to increase across occupations due to technological change and innovation

Given general employment and demographic trends labour shortage can be expected at the higher end of skill-intensive occupations as well as among elementary occupations. From the point of view of economic activity sectoral employment, services – both skill-intensive and less demanding for skills – and construction have enjoyed stable growth in employment. If the trend persists in the future, one can imagine that these are the fields which would continue absorbing the workforce and may experience skill shortages. The within occupational shifts towards higher skills indicate, however, that demand for higher skilled people can be expected across occupations due to technological change and innovation.

9.4. Recognise skill shortages as a European-wide problem

According to reports from individual Member States the current shortage occupations are: healthcare professions (doctors, nurses, care for old/disabled people), IT specialists (mostly system designers and analysts), managers, marketing specialists, financial analysts, scientists, engineers (mechanical, electrical, chemical), teachers, construction workers (carpenters, bricklayers, welders, electricians, heating and ventilation technicians), hotel and catering professions (cooks, waiters), truck drivers, childminders, sales representatives, cleaners, etc. Member States report labour shortages in similar occupations and the projections identify analogous shortages in terms of level of education and occupations throughout the EU. It is, therefore, important to recognise the skill/labour shortage as a European-wide problem which needs European-level policy measures.

9.5. European problems need European solutions

Many Member States attempt to introduce proactive immigration policy measures to compensate for demographic decline and labour shortages. The major source of solving labour shortage problems in old Member States, especially after enlargement, were labour immigrants from new Member States. While the overall effects of opening up borders after EU enlargement were evaluated as positive to individual Member States, no objective evaluation has been given to effects on the European labour market. This was mostly young and mobile labour coming from new Member States, often overqualified for the jobs offered in the west. 'Youthdrain' and 'braindrain' in new Member States and 'brainwaste' at European level should also be counted as effects. From the point of view of skill shortages and in view of the Lisbon objectives it is necessary to fully use human potential of the labour

pool and, therefore, finding flexible and easy ways to recognise qualifications and skills of immigrants is an important issue for the future. The most alarming, however, is the fact that new Member States were sending workers in mostly the same occupations they themselves experience shortage. Geographical mobility, though still very limited in Europe, tends to solve skill shortages in some regions and sectors at the expense of others. European-level problems need European solutions. It needs joint labour immigration policy, and given the demographic challenge in all EU-25, it probably needs labour immigration from third countries.

9.6. Recognition that not all skill-shortage problems can be solved by the supply of skills

It is however important to note that some recruitment problems cannot be solved by education and training and other skill supply measures alone and have to be accompanied by such measures as wage policy, employment protection, institutional efficiency, general market strategies, better economic and social conditions, including family-friendly provisions, improvement of childcare facilities to attract more women into the labour market, improved housing and others.

9.7. Changing nature of the demand for skills and further research into the question and its consequences for education and training

The specific skills reported missing among the current workforce or among job applicants (skills gap) are similar across countries and sectors. Apart from technical skills which are occupation and industry specific, and apart from ICT skills and foreign languages,

companies require social and personal skills the most and often rate them higher than technical and theoretical knowledge and formal qualifications. These skills are: team working, interpersonal communication, initiative, creativity, entrepreneurship, leadership and management, presentation skills, ability to learn, etc. Additionally the new discourse on the changing nature of skills required on the labour market reveals that personal characteristics appear most frequent, such as flexibility, motivation, loyalty, commitment but also self-presentation (aesthetic labour) which denotes not only psychological and emotional requirements but also certain expectations from physical appearance. Companies recruit attitudes rather than competences and skills in their conventional meaning.

These trends put important questions for future research. Are such skills alpha and omega for the success of businesses among drivers of change in the knowledge-based economy? Should education and training primarily focus on these requirements? Are these skills trainable or are they part of social and cultural backgrounds, where the family and social origin have a large role to play? Does this potentially lead to deterioration of the role of initial education in the life of individuals? What is the role of practical training in meeting individual with employers' expectations during the education/training cycle?

9.8. Improve the knowledge base on skill shortages in Europe: comparable vacancy statistics; comparable enterprise surveys; pan-European forecasting

One major problem in identifying labour shortages and skill gaps in Europe is the absence of detailed and reliable statistics on

vacancies, including qualitative requirements for the pursued workforce. National PES efforts to improve this data collection in a standardised manner across Europe should be continued. Eurostat's vacancy survey will hopefully continue to collect valuable information comparable over time and across countries in the future.

There is no major European-level enterprise survey on skill shortages and recruitment practices which could provide comparable results across countries and shed light on the situation from the employer's point of view. Many Member States use such surveys at national level and it may be useful in the future to consider a possibility of either applying a common approach or establishing a regular EU enterprise survey which would help to identify skill gaps, shortage occupations and recruitment difficulties, and ways to overcome these in Europe. The latter can be done with the help of an existing EU-level regular business survey or using positive practice of ad hoc surveys, for instance, the joint harmonised programme of business and consumer surveys.

There is no tool at European level to measure the shortages (and surplus) occupations and types/levels of education, which could be done with the help of (econometric) forecasting by occupation and education. At present Skillsnet is trying to develop a European level forecast, concentrating on the demand side and using available standardised European data. Such approach will only bring limited data in a short run but will help identify data gaps and methodological problems. Due to its focus on the demand side, information on shortage and surplus occupations/education categories cannot yet be obtained as it can be measured only against supply. However, in a longer term the project intends to include the supply side and to involve Member States in filling data gaps and in developing common approaches to forecasting systems. Future development of these activities can significantly improve knowledge and information on skill shortages in Europe.

Annex

Table 1A: **GDP growth rate**

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
EU-25	1.7	2.7	3.0	3.0	3.9	1.9	1.2	1.2	2.4	1.6	2.1*	2.4*
EU-15	1.6	2.6	2.9	3.0	3.9	1.9	1.1	1.1	2.3	1.5	2.0*	2.2*
Euro zone	1.4	2.5	2.9	2.9	3.8	1.9	0.9	0.7	2.0	1.3	1.9*	2.1*
Euro zone (EU-12)	1.5	2.6	2.9	2.9	3.8	1.9	0.9	0.7	2.0	1.3	1.9*	2.1*
Belgium	1.2	3.3	1.9	3.1	3.9	1.0	1.5	0.9	2.6	1.2	2.1	2.0
Czech Republic	4.2	-0.7	-1.1	1.2	3.9	2.6	1.5	3.2	4.7	6.0	4.4*	4.3*
Denmark	2.5	2.7	1.8	2.8	3.3	0.7	0.6	0.7	1.7	3.4	2.3*	2.1*
Germany	1.0	1.8	2.0	2.0	3.2	1.2	0.1	-0.2	1.6	0.9	1.2*	1.6*
Estonia	4.4	11.1	4.4	0.3	7.9	6.5	7.2	6.7	7.8	9.8	7.2*	7.4*
Greece	2.4	3.6	3.4	3.4	4.5	5.1	3.8	4.8	4.7	3.7	3.4*	3.4*
Spain	2.4	3.9	4.5	4.7	5.0	3.5	2.7	3.0	3.1	3.4	3.2*	3.0*
France	1.1	2.4	3.6	3.3	4.1	2.1	1.2	0.8	2.3	1.5*	1.8*	2.3*
Ireland	8.3	11.7	8.5	10.7	9.2	6.2	6.1	4.4	4.5	4.7	4.8*	5.0*
Italy	0.7	1.9	1.4	1.9	3.6	1.8	0.3	0.0	1.1	-0.0	1.5*	1.4*
Cyprus	1.8	2.3	5.0	4.8	5.0	4.1	2.1	1.9	3.9	3.8	4.0*	4.2*
Latvia	3.8	8.3	4.7	4.7	6.9	8.0	6.5	7.2	8.5	10.2	7.7*	7.1*
Lithuania	4.7	7.0	7.3	-1.7	3.9	6.4	6.8	10.5	7.0	7.5	6.2*	5.8*
Luxembourg	1.5	5.9	6.5	8.4	8.4	2.5	3.6	2.0	4.2	4.2*	4.4*	4.5*
Hungary	1.3	4.6	4.9	4.2	6.0	4.3	3.8	3.4	4.6	4.1	3.9*	3.9*
Malta	:	:	3.4	4.1	6.4	0.4	1.5	-2.5	-1.5	2.5	0.7*	1.1*
Netherlands	3.0	3.8	4.3	4.0	3.5	1.4	0.1	-0.1	1.7	1.1	2.0*	2.4*
Austria	2.6	1.8	3.6	3.3	3.4	0.8	1.0	1.4	2.4	1.9	1.9*	2.2*
Poland	6.2	7.1	5.0	4.5	4.2	1.1	1.4	3.8	5.3	3.2	4.3*	4.5*
Portugal	3.6	4.2	4.8	3.9	3.9	2.0	0.8	-1.1	1.1	0.3	0.8*	1.2*
Slovenia	3.7	4.8	3.9	5.4	4.1	2.7	3.5	2.7	4.2	3.9	4.0*	4.2*
Slovakia	6.1	4.6	4.2	1.5	2.0	3.8	4.6	4.5	5.5	6.0	5.5*	6.3*
Finland	3.8	6.2	5.0	3.4	5.0	1.0	2.2	2.4	3.6	2.1	3.5*	3.1*
Sweden	1.3	2.3	3.7	4.5	4.3	1.1	2.0	1.7	3.7	2.7	3.0*	2.8*
UK	2.7	3.2	3.2	3.0	4.0	2.2	2.0	2.5	3.1	1.8	2.3*	2.8*
Bulgaria	-9.4	-5.4	3.9	2.3	5.4	4.1	4.9	4.5	5.6	6.0*	5.5*	5.5*
Croatia	5.9	6.8	2.5	-0.9	2.9	4.4	5.2	4.3	3.8*	3.6*	4.0*	4.4*
Romania	:	:	:	-1.2	2.1	5.7	5.1	5.2	8.4	4.1	5.3*	5.0*
Turkey	7.0	7.5	3.1	-4.7	7.4	-7.5	7.9	5.8	8.9	7.4	5.2*	5.1*
Iceland	5.0	5.3	5.5	4.2	5.0	3.3	-1.3	3.6	6.2	6.2*	5.3*	:
Norway	5.3	5.2	2.6	2.1	2.8	2.7	1.1	1.1	3.1	2.3	3.0*	1.8*
Switzerland	0.5	1.9	2.8	1.3	3.6	1.0	0.3	-0.3	2.1	1.9	1.6*	1.5*
USA	3.7	4.5	4.2	4.4	3.7	0.8	1.6	2.7	4.2	3.5	3.2*	2.7*
Japan	2.6	1.4	-1.8	-0.2	2.9	0.4	0.1	1.8	2.3	2.7	2.2*	1.8*

: not available
 * forecast
 Source: Eurostat.

Table 2A: Employment growth

	1996	1997	1998	1999	2000	2001	2002	2003	2004
EU-25	0.6	1.1	1.6	1.3	1.5	1.4	0.5	0.3	0.6
EU-15	0.6	1	1.8	1.9	2.2	1.5	0.7	0.3	0.7
Belgium	0.3	0.5	1.5	1.3	2	1.4	-0.2	-0.1	0.6
Czech Republic	0.2	-0.7	-1.4	-2.1	-0.7	-0.1	0.8	1.8	0.1
Denmark	1	1.2	1.5	1	0.4	0.8	-0.2	-1.2	0
Germany	-0.3	-0.1	1.2	1.4	1.9	0.4	-0.6	-1	0.4
Estonia	-2.3	0	-1.9	-4.4	-1.5	0.8	1.3	1.5	0
Greece	-0.4	-2.2	6.2	0.4	0.9	0.3	0.1	1.6	4.1
Spain	1.7	3.6	4.5	4.6	5.1	3.2	2.4	2.6	2.6
France	0.4	0.4	1.5	2	2.7	1.7	0.7	-0.1	0
Ireland	3.6	5.6	8.6	6.3	4.6	3	1.8	2	3.1
Italy	0.6	0.4	1	1.1	1.9	2	1.8	1.2	0.9
Cyprus	:	-0.3	1	7.9(b)	5.7	4.6	2	1.1(c)	1.5(c)
Latvia	-1.9	4.4	-0.3	-1.8	-2.9	2.2	2.3	1	1.1
Lithuania	0.9	0.6	-0.8	-0.5	-3.7(a)	-3.3	4	2.3	-0.1
Luxembourg	2.6	3.2	4.5	5	5.7	5.7	3	1.8	2.6
Hungary	-0.5	0.2	1.8	3.4	1.3	0.3	0	1.3	-0.7
Malta	:	:	:	:	8.1	2.1	-0.7	-0.7	1.4
Netherlands	2.3	3.2	2.6	2.6	2.2	2	0.5	-0.6	-1.4
Austria	0.4	0.9	1.3	1.6	1.0	0.6	-0.1	0.1	0.0
Poland	1.9	2.8	2.3	-2.7	-2.3	1.5	-1.9	-1.2(a)	-0.3
Portugal	:	:	:	1.9	1.8	1.6	0.5	-0.4(c)	0.1(c)
Slovenia	-2	-2	-0.2	1.4	0.8	0.4	1.6	-0.2	0.4
Slovakia	2.3	-1.2	-0.4	-2.7	-1.8	0.6	-0.5	1.8	-0.3
Finland	1.4	3.3	2	2.5	2.3	1.5	0.9	0	0.3
Sweden	-0.8	-1.3	1.6	2.1	2.4	1.9	0.1	-0.3	-0.5
UK	0.9	1.8	1	1.4	1.2	0.8	0.8	1	1
Bulgaria	:	-3.9	-0.1	-2.1	-3.5	-0.4	0.4	6.3	3.1(c)
Romania	:	:	:	:	:	-0.8	-2.7	-0.1(c)	0.4(c)

- : not available
 (a) estimated value
 (b) break in series
 (c) forecast

Table 3A: **Unemployment rates of the total population by level of education 1994-2005 in EU-25 by country**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
ISCED 0-2												
EU-25	:	:	:	:	:	:	11.7	10.3	10.7	11.1	11.4	11.4
EU-15	:	12.5	12.7	12.5	12.5	12	10.9	9.3	9.8	10.2	10.4	10.3
Euro zone	:	13.6	13.8	14	12.8	12.4	11.2	9.5	9.9	10.5	10.8	10.6
Belgium	12.5	12.4	13.6	12.9	13.4	12.2	9.3	9.2	10	10.2	11.1	12.1
Czech Rep.	:	:	:	:	14	18.6	20	19.3	18	19.7	23.4	25.7
Denmark	11.1	10.4	10.4	8.2	7.3	7.2	6.6	5.5	6.2	7.5	8.1	7.2
Germany	14.8	14.2	14.5	16.8	:	15.8	14	13.2	15.3	18	20.3	20.1
Estonia	:	:	:	15.4*	15.7*	18.7	22.4	15.9*	14.9*	12.9*	17.6*	13.5*
Greece	6.2	6.4	6.7	6.8	8.1	9.1	8.5	8.2	7.9	7.4	8.8	8.7
Spain	22.6	21.2	21.5	20.1	18.1	15	14.1	10.5	11.3	11.5	11.4	9.8
France	:	:	:	:	:	:	:	:	:	10.5	10.9	11
Ireland	19.4	16.9	17.3	15	:	9.6	7.4	5.9	6.2	6.5	6.7	6.3
Italy	8.9	9.4	9.9	10.4	10.7	10.5	10	9.3	9.1	9	7.9	7.6
Cyprus	:	:	:	:	:	:	6.6	4.7	3.7	4.5	5.7	6.5
Latvia	:	:	:	:	16.5	17.2	20.6	19.8	21.3	15.9	15.2	13.9
Lithuania	:	:	:	:	17.2	16.6	22.7	22.1	19.1	20.5	14.5	16.1
Luxembourg	3.7	2.9	3.8	3.2	:	3.7	3.2	1.9*	3.9	3.6	5.5	5
Hungary	:	:	:	13.1	13.3	12.2	10.4	10.4	10.6	11	11.2	12.4
Malta	:	:	:	:	:	:	5.8	4.6	5.8	5.6	5.6	7.3
Netherlands	:	:	8.1	7.3	5.9	5	3.5	2.1	3	4.7	5.8	6
Austria	:	:	:	:	:	5.5	5.5	6.3	6	7.6	8.1	8.7
Poland	:	:	:	15.1	14.2	:	22.9	25.1	26.5	27.4	29.6	29.1
Portugal	6.1	6.4	6.8	6.3	4.3	4.2	3.5	3.6	4	5.9	6.4	7.6
Slovenia	:	:	8.1	7.8	8.3	8.8	10.3	8.3	8.1	10.2	9.3	8.8
Slovakia	:	:	:	:	24.5	30.1	37.3	38.3	42.6	44.6	48.9	50
Finland	:	17.9	17	16.9	14.4	13.5	12.2	11.2	11.4	11.5	12.4	11.1
Sweden	:	10.1	10	12	11.1	9.9	7.7	5.1	4.9	5.3	5.8	9.1
UK	11.2	9.8	9.3	7.9	:	10	8.9	7.6	8.5	7.1	6.7	6.9
Bulgaria	:	:	:	:	:	:	23.9	30.5	28.1	24.7	20.4	17.6
Croatia	:	:	:	:	:	:	:	:	14.4	14.8	15	13.3
Romania	:	:	:	3.9	3.5	3.7	4.8	4.9	5.9	6.2	8.1	7.1
Iceland	:	:	:	:	:	2.9	:	:	3.2	3	3	:
Norway	:	:	4.8	3.7	3.5	:	:	2.9	3.2	5	4.3	6.4
Switzerland	:	:	7.9	7.1	5.4	4.8	4.7	3.8	4.7	6.3	7.6	7.8
ISCED 3-4												
EU-25	:	:	:	:	:	:	8	7.6	8	8.2	8.4	8.1
EU-15	:	8.4	8.6	8.8	8.5	7.6	6.8	6.1	6.4	6.9	7.1	7
Euro zone	:	8.7	8.9	9.3	8.6	8.3	7.4	6.9	7.2	7.7	8.1	8
Belgium	7.5	7.7	7.6	7.1	7.7	6.7	5.5	4.3	5.6	6.5	6	6.9
Czech Rep.	:	:	:	:	4.3	6.4	6.8	6.1	5.5	6.1	6.5	6.3
Denmark	8.3	6	6	4.7	4.6	4.1	3.9	3.3	3.3	4.2	4.9	4.2

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Germany	8.9	8.1	8.8	10	:	8.8	8	8.2	8.7	10	10.9	11.2
Estonia	:	:	:	11.3	10.4	12	14.8	12.7	10.3	11.5	10.1	8.3
Greece	8.3	8.6	9.1	9.1	10.5	11.1	11.1	10.1	10	9.5	9.9	9.3
Spain	20.1	19.3	18	17.5	15.3	13.1	11.2	8.2	9.5	9.8	9.3	7.4
France	:	:	:	:	:	:	:	:	:	6.6	6.6	6.5
Ireland	9.6	7.5	7.3	6.6	:	3.7	2.6	2.4	2.9	3	3.2	3
Italy	7.1	7.4	7.6	7.8	8.4	8.2	7.5	6.7	6.4	5.9	5.4	5.2
Cyprus	:	:	:	:	:	:	4.3	3.1	3.3	3.8	3.6	4.3
Latvia	:	:	:	:	14.1	14.2	14.6	12.6	12.1	9.7	9.8	8.4
Lithuania	:	:	:	:	15.9	15.4	19.7	18.5	14.3	12.1	12	9.1
Luxembourg	1.9*	2.1*	2.0*	:	:	1.2*	1.6*	1.1*	1.2*	2.6	4.3	3.5
Hungary	:	:	:	7.2	7.4	5.9	5.6	4.6	4.4	4.8	4.7	6
Malta	:	:	:	:	:	:	2	3.3	1.7	2.8	3.6	2
Netherlands	:	:	4.8	4.1	3.2	2.3	1.9	1.5	1.9	2.5	3.9	4.1
Austria	:	:	:	:	:	3.1	2.6	2.8	3.1	3.3	3.7	4
Poland	:	:	:	10.1	8.9	:	14	15.9	17.8	17.2	17.2	16.4
Portugal	6.4	6.7	6.1	6.5	4.5	5.3	3.9	2.9*	4.4	5.3	5.5	6.4
Slovenia	:	:	5	4.8	6.3	6.1	5.7	4.3	5	5.1	5	5.1
Slovakia	:	:	:	:	8.8	11.8	14.8	15	14.3	13.2	15.1	13.1
Finland	:	15.6	12.7	13.4	11.2	9.5	8.8	8.6	8.6	9	8.3	7.4
Sweden	:	8.6	9.5	10.2	9	7	5.2	4	4.1	4.5	5.6	6.1
UK	7.9	7.2	6.6	5.8	:	4.7	4.4	3.6	3.7	3.5	3.7	3.5
Bulgaria	:	:	:	:	:	:	13.8	17.3	15.9	11.2	10.2	8.1
Croatia	:	:	:	:	:	:	:	:	13.1	12.1	12.3	12
Romania	:	:	:	5	5.4	6.7	7.6	6.8	8	6.5	6.4	6.8
Iceland	:	:	:	:	:	:	:	:	2.5	2.2	2.5	:
Norway	:	:	3.4	3.4	2	2	2.3	2.6	2.8	3	2.9	3.8
Switzerland	:	:	3	2.9	2.9	2.3	2	2.1	2.4	3.3	3.7	3.6

: not available
 * unreliable/uncertain data
 Source: Eurostat database 2006.

List of abbreviations

EEO	European Employment Observatory	
EES	Employers skills survey	UK
EU	European Union	
EU-10	10 new Member States of the European Union	
EU-15	15 old Member States of the European Union	
EU-25	25 Member States of the European Union	
Eurostat	Statistical Office of the European Communities	
GDP	Gross domestic product	
ICT	Information and communication technology	
IER	Institute for Employment Research, University of Warwick	UK
ISCED	International standard classification of education	
ISCO	International standard classification of occupations	
IT	Information technology	
NACE	Industrial classification of economic activities	
NESS	National employers skills survey	UK
NSTF	National skills task force	UK
OECD	Organisation for Economic Cooperation and Development	
PES	Public employment services	
R&D	Research and development	
ROA	Research Centre for Education and the Labour Market, Maastricht University	NL
Skillsnet	Early identification of skill needs network	

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The private benefits from vocational training: a new framework

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Abstract

For designing policies aimed at stimulating private investments in IVT and CVT it is crucial to know who will benefit from various training investments: employers, individuals, both, or society as a whole? If any party, whether employers or individuals, do not share in the benefits of training this may hamper the success of a training programme. In this contribution we will develop a theoretical framework to characterise vocational training. We will identify four factors that determine to what extent different parties share the returns from training, namely: the degree of firm-specificity of training; the degree of imperfect competition on the market for trained workers; the retention rate of trained workers; the bargaining power of trained workers. Next this framework will serve as a handle for a review of empirical literature on the private benefits from training for both employers and individuals. What are employers' and individuals' benefits from different types of training? We will pay particular attention to empirical evidence on the four factors that determine the division of the returns to training.

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Introduction

For designing policies aimed at stimulating private investment in initial vocational training (IVT) and continuing vocational training (CVT) it is important to know who will benefit from various training investments: employers, individuals, both, or society as a whole? If any party, whether employers or individuals, does not share in the benefits of training this may hamper the success of a training programme. Firms which do not benefit from training themselves may be tempted to save on training costs by lowering the quality of training or training provision. Individuals, on the other hand, may not be motivated to spend much effort on the learning process if they do not benefit from training. As both the quality and quantity of training provided by a firm and the effort of individuals are difficult to monitor and influence, government policies aimed at increasing training participation will have a better chance of success if both parties share the benefits.

Previous research on the benefits of vocational training revealed that both individuals and employers may benefit from training (Cedefop; Descy and Tessaring, 2004) but little is known, however, about how these benefits are actually shared between individuals and employers. Economic literature on training usually departs from the dichotomy of general versus firm-specific training introduced by Becker (1962). General training is defined as training that is of value in many firms while firm-specific training is of value only in the training firm. The benefits of general training fully accrue to the worker whereas the benefits of firm-specific training are shared between the employer and the worker (Becker, 1962; Hashimoto, 1981).

The typology general and firm-specific training is of little empirical use to determine *ex ante* which party benefits from training. In most of the literature training is classified *ex post* as general or firm-specific based on observed wage growth (Werwatz, 1996; Euwals and Winkelmann, 2001). In reality,

most training, especially vocational training, is neither completely general nor completely firm-specific (Smits and Stromback, 2001). Some elements of training may be useful in the training firm only, while other elements of the training may be of use in some or in many other firms. The dichotomy of general versus firm-specific training is not as straightforward as it may seem at first sight, as it refers not only to the characteristics of training content (could the skills trained for be used outside the training firm) but also to market conditions (are skills valued the same outside the training firm) (Soskice, 1994). Market conditions can prevent skills that are initially general to be valued the same outside the training firm, for example because there is incomplete information on the content or quality of the training programme. In that case market conditions allow employers to appropriate part of the benefits of this training. For example, generic skills such as reading and writing are of potential use in many firms. Training in generic skills could, therefore, increase workers' market value, if they could. However, if training is not certified, individuals will not be able to signal these skills to new employers and the market value of training will be very low.

To determine *ex ante* the training benefits for each party, employers, individuals (and other employers), we need a new framework to classify training programmes. This framework should consider both the content of the training programme (what skills are learned: generic, occupational or firm-specific skills) and the market value of the training (Smits and Stromback, 2001; Smits and Zwick, 2004). The market value of the training depends not only on the content of the training programme but also on market conditions, for example the size of the market and its transparency. Such a framework would make it possible to:

- (a) determine *ex ante* who benefits from the training and thus who should make the investment;

- (b) formulate new balanced training programmes so both parties can reap benefits from it;
- (c) determine what interventions (subsidies, tax systems) would be most appropriate to stimulate training investment.

If the market value of the training equals its value in the training firm, then employers have to pay individuals for their full productivity, so individuals profit and should make the investment. If the market value of training is low compared to its value in the training firm, then employers profit from the training as well and should share in the investment. In fact, if the market value of training is very low workers will not be prepared to invest in training unless they can share in the firm-specific benefits of the training. It would not be helpful in this case to stimulate training by means of subsidies or tax reductions aimed only at individuals. Such policies would probably increase the number of individuals participating in training

programmes but would have an adverse effect on the success of these programmes, as individuals have little incentive to exercise much effort in the training if the benefits from doing so are low. A more fruitful approach is to design training programmes so both individuals and employers benefit from it and, therefore, should share the cost.

In this study we will develop a framework to characterise vocational training. We will identify the factors that determine to what extent different parties (the training firm, the worker and other firms) will share in the returns from training. Next this framework will serve as a handle for a review of empirical literature on the private benefits from training for both employers and individuals. What are employers' and individuals' benefits from different types of training? We will especially focus on empirical evidence of factors that determine the division of the returns, for example the degree of firm-specificity and market conditions.

1. Theoretical framework

The market value of training depends both on the type of skills learned during this training and on market conditions. It is not only important whether training has increased a worker's potential productivity in the external market but also whether the market wage reflects this productivity increase. Market conditions can prevent technological general skills being valued in the labour market.

In this chapter we will develop a framework which characterises vocational training on two dimensions; the firm-specificity of the skills learned and the market values of these skills. The parameters of the model will have a different value for different training programmes as both content and market conditions will differ between different types of training. The model will not be tested empirically in this contribution, because there is no suitable dataset available, but will instead serve as a handle to present available evidence on dividing training returns between firms and workers from literature.

1.1. Degree of firm-specificity and degree of imperfect competition

Consider a simple two period model for training. We assume constant returns to scale so we can consider the training decision for a single worker. The first period is the training period, the second period is the remainder of working life. For simplicity, but without loss of generality, it is assumed there is no discounting between periods. The training may raise productivity both in the training firm (internal productivity) and in other firms (external productivity). Without loss of generality it is assumed that initial productivity is equal inside and outside the training firm and it is normalised at zero ⁽¹⁾. Let y_1 denote internal productivity during the post-training period and y_2 the maximum external productivity during the post-training period ⁽²⁾. Analogously w_1 denotes the internal wage and w_2 the external wage in the second period. Suppose that a fraction $(1-p)$ of workers

Box 1: List of symbols

y_1	internal productivity	δ	degree of firm-specificity
y_2	external productivity	γ	degree of imperfect competition
w_1	internal wage rate	H	human capital production function
w_2	market wage	C	training cost function
p	retention rate	C_f	training cost function of the firm
R_s	social returns	C_w	training cost function of the worker
R_f	returns to the training firm	x_f	effort of the firm
R_s	returns to the worker	x_w	effort of the worker
a	workers' bargaining power	z	vector containing training characteristics

(1) Some training programmes may include contractual arrangements that affect the division of the returns to training. For example, the duration of an apprenticeship contract may exceed the time needed to learn the trade. In the latter part of the indenture the apprentice still earns a relatively low training wage but his productivity has increased (Malcomson et al., 2003). Such an arrangement can be incorporated in the framework developed in this chapter by assuming that the worker will have to stay for some proportion of the post-training period while still receiving the training wage (Smits and Stromback, 2001). However, as most of the literature shows that apprentices are a net costs to the training firm during the training period (Bardenleben, 1997; Smits and Stromback, 2001; Smits, 2005b) we will only consider the divisions of the returns from apprenticeship training after completing the term of indenture.

(2) The productivity in the external firm in which the worker reaches the highest productivity.

leaves the training firm after completing the training for exogenous reasons (that is for reasons unrelated to the wage that is paid during the post-training period) ⁽³⁾. The retention rate (p) can be interpreted as the probability that a single worker stays in the training firm. The expected social returns to training are given by the probability that the worker stays times his productivity in the training firm plus the probability that the worker leaves the training firm times his external productivity:

$$(1.1) R_s = py_1 + (1 - p)y_2$$

The firm's expected share of the returns is equal to probability the worker stays times the gap between internal productivity and pay:

$$(1.2) R_f = p(y_1 - w_1)$$

and the worker's share is equal to the probability he stays times the internal wage rate plus the probability he leaves times the external wage rate:

$$(1.3) R_w = pw_1 + (1 - p)w_2$$

If the internal productivity exceeds the external wage rate then there is a surplus from training ($y_1 - w_2$) which can be shared between the worker and the training firm. The internal wage rate is then given by:

$$(1.4) w_1 = w_2 + \beta(y_1 - w_2)$$

where β is a measure of the worker's bargaining power. Note that the external wage rate puts a minimum bound on the internal wage rate.

Define the degree of firm-specificity by the gap between the worker's internal and external productivity relative to his external productivity:

$$(1.5) \delta = \frac{(y_1 - y_2)}{y_2}$$

If $\delta=0$ then $y_2=y_1$ and the training is perfectly general. If $\delta>0$ then the external productivity is lower than internal productivity ($y_2<y_1$) and the training is more specific. If $\delta\rightarrow\infty$ the training is hardly general at all ⁽⁴⁾ ⁽⁵⁾. Note that, using the above definition, the training can never be completely firm-specific although the general component may be neglectably small. For our purpose the situation where the training is completely firm-specific is of little interest because if it were completely firm-specific market conditions would not matter at all. Further, we are interested in vocational training which by definition can never be wholly firm-specific as it refers to a vocation and not to a firm. Finally, even if the training is meant to be completely firm-specific the worker will also acquire some skills and knowledge that can be applied in other firms. In other words it is difficult to think of skills and knowledge as completely firm-specific ⁽⁶⁾.

Analogously we can obtain a measure for the degree of imperfect competition in the external market:

$$(1.6) \gamma = \frac{(y_2 - w_2)}{w_2}$$

The degree of imperfect competition is defined by the gap between external productivity and pay relative to the external wage rate. If $\gamma=0$ external wages equal external productivity ($w_2=y_2$) there is perfect competition. If, on the other hand, $\gamma>0$, external wages will be below external productivity. For $\gamma\rightarrow\infty$ there is hardly any competition at all. The economic literature provides several explanations why the market for skills is not perfectly competitive. Roughly we can distinguish three classes of explanations (Box 2):

(3) Separations may be quits as well as lay-offs.

(4) In this contribution I will use the dichotomy general versus firm-specific to denote technological firm-specific and general training.

(5) Theoretically it would be possible that $y_2>y_1$ (and so $\delta<0$), for example in the case of generic skills (Smits, 2005b). This case is not considered in this contribution.

(6) The reverse is not necessarily true; training can be completely general if it takes place off-the-job independent of the context in the training firm.

- (a) the market for trained workers is relatively small;
- (b) firms have difficulties assessing the skill level and productivity of workers trained in other firms;
- (c) there are institutions, such as trade unions or minimum wage legislation that compress the wage structure.

By substituting for γ and δ in equations (1.1) - (1.3) we obtain the following formulas for the social returns, the return to the training firm and the returns to the worker:

$$(1.7) R_s = \frac{1 + \rho\delta}{(1 + \delta)} y_1$$

Box 2: Imperfect competition on the market for trained workers

The size of the market

Becker (1964) admitted that the dichotomy general/firm-specific is not applicable for all types of training. He states that 'some training may be useful not in most firms nor in a single firm, but in a set of firms defined by product, type of work, or geographical location'. Stevens (1994; 1996) defines training that can be used in more than one firm as transferable. She argues that general training is only a special case of transferable training, which is characterised by a perfectly competitive labour market. If the labour market is not perfectly competitive, because only a small number of firms can use the skills, Becker's results do not apply. Stevens (1994) shows that in imperfect competition, post-training wages will not necessarily equal marginal product (*).

The transparency of the market

In contrast to the training firm, external firms do not observe what training is taking place. Therefore, external firms might find it difficult to assess the value of a training programme, especially if it is not regulated by a third party. It follows that if an increase in the level of training is not observed by external firms, then it will not lead to an equivalent increase in the market wage. The consequence of informational asymmetries regarding the content of training programmes was first mentioned by Katz and Ziderman (1990) and later modelled by Chang and Wang (1996). Katz and Ziderman (1990) argue that the value of an externally trained worker is an increasing function of the recruiting firm's information about a worker's training. If the recruiting firm has no information about the training, it has to incur costs to discover the worker's skill level. The value of an untrained worker in a job that requires training might be very low, or even negative. Additionally, it will probably take some time for a firm to discover the productivity of an externally trained worker. Therefore, firms might not be willing to hire externally trained workers for skilled jobs or to pay externally trained workers the skilled wage rate.

Another type of private information is the ability of workers. The training firm, by having the opportunity to observe workers during the training period, has an informational advantage compared to external firms. Although external firms might observe the training intensity, the outcome might depend on both the training intensity and worker's ability. Several authors have addressed this issue, for example Elbaum and Singh (1995), Franz and Soskice (1995), Acemoglu and Pischke (1998), Clark (2002), Boom (2001) and Autor (2001). The common feature of most models in the literature is the assumption that training raises productivity more for high ability workers than for low-ability workers. That is, training and ability are complementary. After the training period, the high-ability workers are offered the market wage and low-ability workers dismissed or offered such a low wage that they will quit. However, some of the high ability workers will also leave for exogenous reasons. Acemoglu and Pischke (1998) show that in a competitive labour market the equilibrium market wage will equal the expected productivity of an externally hired worker. The expected profits on externally hired workers are, therefore, zero. Further, since the market wage is lower than the productivity of high ability workers, the firm earns a surplus on internally trained high-ability workers. It follows directly that the surplus on trained high-ability workers increases with the level of training and therefore firms will invest in training.

The role of institutions

Specific institutions in a country may enable firms to appropriate part of the returns to general training. Examples are minimum wage legislation and trade union influence. A minimum wage is commonly thought of as leading to less training than socially desirable. A minimum wage applicable to the training period can prevent a firm from shifting the cost of training onto apprentices. However, a minimum wage for the post training period may be an incentive for firms to provide general training (Acemoglu and Pischke, 1999b). This would be the case if, due to other labour-market distortions, the wage the firm would otherwise pay is strictly lower than the marginal productivity of the worker. Firms then have an incentive to raise productivity exactly to that level for which the wage they would otherwise pay equals this minimum wage. This is the minimum level of training for which the firm can appropriate the surplus from training.

(*) Harhoff and Kane (1997), Acemoglu and Pischke (1999a, c), Booth and Zoega (2000), Booth et al. (2002) and Lazear (2003) also present models in which the number of firms where the worker can use his skills is limited.

$$(1.8) \quad R_s = p(1-\beta) \frac{(\delta + \gamma + \gamma\delta)}{(1+\gamma)(1+\delta)} y_1$$

$$(1.9) \quad R_w = \frac{(1 + p\beta (\gamma + \delta + \gamma\delta))}{(1+\gamma)(1+\delta)} y_1$$

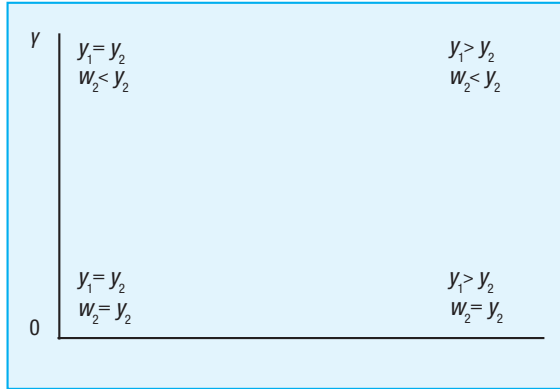
In this simple framework the division of the returns depends on four variables: the degree of competition (γ), the degree of firm-specificity (δ), the bargaining power of the worker (β) and the exogenous retention rate (p). Note that in reality these four may not be completely independent but may to some extent interact. The social returns are equal to the internal productivity increase (y_1) times a factor that allows for the loss of the firm-specific component when the worker leaves the training firm ($((1+p\delta)/(1+\delta))$). If all workers were to stay in the training firm or if the training were completely general the social profits would equal the internal productivity increase. The training surplus, which is shared between the worker and the training firm, is given by the internal productivity times a factor that allows for the degree of imperfect competition and the degree of firm-specificity ($(1-1/(1+\gamma)(1+\delta))$). If the degree of firm-specificity and the degree of imperfect-competition are both equal to zero ($\delta=0$ and $\gamma=0$) then there is no surplus from training to be shared. It can be shown that the worker's share in the returns to training is increasing in the retention rate (p) and the worker's bargaining power (β) and decreasing in the degree of firm-specificity (δ) and the degree of imperfect competition (γ). The firm's share in the returns is increasing in the retention rate (p), the degree of firm-specificity (δ) and the degree of imperfect competition (γ) and decreasing in the worker's bargaining power.

If the market for training is imperfectly competitive other firms also share in the returns to training because they can pay skilled workers less than their productivity. The returns to other firms are given by:

$$(1.10) \quad R_s - R_w - R_f = \frac{(1 + p)\gamma}{(1+\gamma)(1+\delta)} y_1$$

Keeping the retention rate and bargaining power fixed at positive values we can distinguish four different situations:

Figure 1: **Division of training returns as a function of the degree of firm-specificity and of imperfect competition**



- (a) the training is perfectly general and there is perfect competition on the market for skills ($\delta=0$ and $\gamma=0$). The returns to training fully accrue to the worker;
- (b) the training is perfectly general but there is imperfect competition on the market for skills ($\delta=0$ and $\gamma>0$). The training firm and external firms can appropriate some of the returns to training;
- (c) the training is partly firm-specific but the market for (general) skills is perfectly competitive ($\delta>0$ and $\gamma=0$). The training firm can appropriate some of the returns to training but external firms cannot;
- (d) the training is partly firm specific and the market for general training is not competitive ($\delta>0$ and $\gamma>0$). The training firm and external firms can appropriate some of the returns to training but the returns to the training firm are higher.

1.2. Socially optimal degrees of firm-specificity and competition

If any party, whether the employer or the individual, does not share in the benefits of the training this may hamper the success of a training programme. This holds in particular for the quality of the training provided by firms and the efforts exerted by individuals. Subsidies for stimulating employers or individuals to invest

in training will not be effective in that case. For example, if firms are stimulated to invest in training while they do not benefit from the training themselves, they may be tempted to save on training costs by lowering the quality of the training (Ryan, 1994; Smits, 2005a). By the same argument, individuals who are stimulated to participate in training from which they will not profit themselves, may not be motivated to spend much effort in the learning process (Acemoglu and Pischke, 2000; Barrett and O'Connell, 2001). As both the quality of the training provided by a firm and the effort of the individual are difficult to monitor, government policies aimed to increase training participation will have a better chance of success if both parties share in the benefits.

For both parties to share in the benefits we need imperfect competition ($\gamma > 0$) and/or firm-specificity of the training ($\delta > 0$). Usually both the degree of imperfect competition and the degree of firm-specificity are not completely exogenous to the parties involved in the training decision but can to some extent be influenced. If an external party, for example a training body, could set either the degree of firm-specificity or the degree of imperfect competition, what values for γ and δ should it choose to maximise social profits? A higher degree of firm-specificity or a higher degree of imperfect competition may lower the worker's share in the returns but as it induces the training firm to invest more, the total returns to the worker may increase. To determine the socially optimal degree of firm-specificity of training or degree of competition on the market for skills, both effects have to be considered.

Suppose there is an external party which devises a training programme with fixed levels of firm-specificity of the training (δ) and the degree of imperfect competition (γ) and some other characteristics, such as the number of hours trained and the type of training (on-the-job, off-the-job, learning by doing), denoted by z . The training firm and worker will participate in the training programme if their expected returns exceed their share in the training cost. The costs and returns to each party do not only depend on δ , γ and z but also

Box 3: How can the degree of firm-specificity and the degree of imperfect competition be influenced by an external party?

The degree of firm-specificity of training is set by the training firm. The training firm knows what firm-specific skills and knowledge are important for it and how these can be acquired. Still, the degree of firm-specificity can to some extent be regulated by an external party, as is often the case for apprenticeship training. An external party can set a standard for general skills that must be acquired during the training, thereby limiting the available space in the training programme for firm-specific skills. Further, an external body can influence the degree of firm-specificity of training by regulating its didactical aspects... For example, if training takes place on-the-job merely through learning by doing, the worker will acquire more firm-specific skills than if training takes place off-the-job in an external training institution. In the latter case training is less tied to the context of the training firm. Another measure sometimes taken to reduce the firm-specificity of apprenticeship programmes is for apprentices to circulate between firms during the training period (Smits, 2005b).

The degree of imperfect competition on the market for skills is more difficult for an external party to influence than the degree of firm-specificity. The degree of imperfect competition depends on various factors simultaneously, such as the size and transparency of the market, as well as institutional factors. If the market for some skills is small the degree of imperfect competition can be decreased by adding more generic skills, those applicable in more occupations or industries that the worker is being trained for, into the training programme curricula. Measures that make the labour market for trained workers more transparent, such as certification of training, also affect the degree of competition. Finally, the parties involved in training decisions at industry level, trade unions and employer organisations, may influence the degree of imperfect competition by making agreements on skill earnings profiles.

on the effort exerted by each party. Suppose that neither party can observe the effort of the other party. By varying effort both the worker and the firm can save on training costs but this will negatively impact on the output from training.

The increase in internal productivity is given by:

$$(1.11) \quad y_1 = H(x_f, x_w, z)$$

where H represents the human capital production function which gives the internal productivity increase, z is a vector containing

training characteristics, x_f is the effort of the training firm and x_w the effort of the worker. We assume that the human capital production function is increasing in both the effort exerted by the training firm and the worker at a decreasing rate. There is no interaction between the effort exerted by the worker and the firm.

$$\frac{\partial H}{\partial x_i} > 0, \quad \frac{\partial^2 H}{\partial x_i^2} < 0 \quad \text{and} \quad \frac{\partial^2 H}{\partial x_i \partial x_j} = 0.$$

The training costs function is given by:

$$(1.12) \quad C(x_f, x_w, z) = C_f(x_f) + C_w(x_w) + \tilde{C}(z)$$

Training costs for each party are increasing in the effort level at an increasing rate that is:

$$\frac{\partial C_i}{\partial x_i} > 0, \quad \frac{\partial^2 C_i}{\partial x_i^2} > 0.$$

So the training costs consist of some fixed component $\tilde{C}(z)$ which depends on the training characteristics set by the external party and a variable component depending on the effort exerted by each party (7). It is supposed that the variable part of the training costs depending on the firm's effort is borne by the firm and the variable part of the costs depending on the worker's effort by the worker. The fixed costs may be shared between the two parties, the exact division does not matter for the analysis as long as the total cost borne by each party does not exceed that party's share in the return. The interpretation of the model is as follows: once the worker and the firm have reached an agreement on a training programme they have an incentive to cheat on this agreement by lowering their effort if they can increase their profits by doing so. This may be the case if a party's share in the returns to training is relatively low (8).

The socially optimal levels of effort exerted by each party are found by equalising marginal social returns to the effort exerted in the training programme and the marginal training costs. So, the levels of effort that should be exerted by the

training firm and the worker to optimise social welfare are given by x_f^* and x_w^* satisfying:

$$(1.13) \quad \frac{1 + p\delta}{1 + \delta} \frac{\partial H}{\partial x_f} = \frac{\partial C_f}{\partial x_f}$$

$$(1.14) \quad \frac{1 + p\delta}{1 + \delta} \frac{\partial H}{\partial x_w} = \frac{\partial C_w}{\partial x_w}$$

However, both the firm and the worker will only allow for their own share in the returns to training when deciding on the level of effort that should be exerted. The private optimums of the firm and the worker are found by equalising marginal private returns and marginal costs and are given by x_f and x_w satisfying:

$$(1.15) \quad \frac{p(1-\beta)(\delta + \gamma + \delta\gamma)}{(1+\gamma)(1+\delta)} \frac{\partial H}{\partial x_f} = \frac{\partial C_f}{\partial x_f}$$

$$(1.16) \quad \frac{1 + p\beta(\delta + \gamma + \delta\gamma)}{(1+\gamma)(1+\delta)} \frac{\partial H}{\partial x_w} = \frac{\partial C_w}{\partial x_w}$$

It is straightforward to see that both the level of effort exerted by the training firm and the level of effort exerted by the worker are too low compared to the social optimal level of effort exerted ($x_f < x_f^*$ and $x_w < x_w^*$). The levels of effort chosen by the firm and the worker are a function of the degree of firm-specificity and of the degree of competition. The firm's share in the returns to training is increasing in the degree of firm-specificity and the degree of imperfect competition. The worker's share is decreasing in the degree of firm-specificity and the degree of imperfect competition. Therefore a higher level of effort chosen by the firm will give a higher pay off for the firm as the degree of firm-specificity and/or the degree of imperfect competition is higher. The opposite is true for the worker. So we have:

$$\frac{\partial^2 R_f}{\partial \delta \partial x_f} = \frac{p(1-\beta)}{(1+\gamma)(1+\delta)^2} \frac{\partial H}{\partial x_f} > 0$$

(7) A fixed component because neither the firm nor the worker has any influence on this cost component.

(8) Although the effort of the worker is by nature non-material, the effort exerted by the worker still constitutes a cost as the time and effort devoted to the training cannot be used for other activities (other market activities or leisure). By lowering this cost the worker increases his profits.

$$\frac{\partial^2 R_w}{\partial \delta \partial x_w} = \frac{-(1-p\beta)}{(1+\gamma)(1+\delta)^2} \frac{\partial H}{\partial x_w} < 0$$

$$\frac{\partial^2 R_f}{\partial \gamma \partial x_f} = \frac{p(1-\beta)}{(1+\gamma)^2(1+\delta)} \frac{\partial H}{\partial x_f} > 0$$

$$\frac{\partial^2 R_w}{\partial \gamma \partial x_w} = \frac{-(1-p\beta)}{(1+\gamma)^2(1+\delta)} \frac{\partial H}{\partial x_w} < 0$$

The higher the degree of imperfect competition, and the higher the degree of firm-specificity, the higher the level of effort chosen by the training firm and the lower the level of effort chosen by the worker. The social profits as a function of the degree of imperfect competition (γ) and the degree of firm-specificity (δ) are given by:

$$(1.17) \quad \frac{1+p\delta}{1+\delta} H(x_f(\delta, \gamma), x_w(\delta, \gamma), z) - C_f(x_f(\delta, \gamma)) - C_w(x_w(\delta, \gamma)) - \tilde{C}(z)$$

The socially optimal degree of firm-specificity of the training is the degree of firm-specificity which maximises social profits. Differentiating (1.17) with respect to δ and substituting for the private optimum gives the first order condition for the optimal degree of firm-specificity:

$$(1.18) \quad -\frac{(1-p)}{(1+\delta)^2} H + \frac{1+p\beta(\delta+\gamma+\delta\gamma)}{(1+\gamma)(1+\delta)} \frac{\partial H}{\partial x_f} \frac{\partial x_f}{\partial \delta} + \frac{p(1-\beta)(\delta+\gamma+\delta\gamma)}{(1+\gamma)(1+\delta)} \frac{\partial H}{\partial x_w} \frac{\partial x_w}{\partial \delta} + \frac{\gamma(1-p)}{(1+\gamma)(1+\delta)} \left(\frac{\partial H}{\partial x_f} \frac{\partial x_f}{\partial \delta} + \frac{\partial H}{\partial x_w} \frac{\partial x_w}{\partial \delta} \right) = 0$$

The first term of equation (1.18) is the marginal social loss from a higher level of firm-specificity because some workers leave the training firm. The second term is the marginal gain for the worker as the firm puts in more effort at a higher degree of firm-specificity. This gain depends both on the effect of the firm's effort on output from training and on the worker's share in training returns. The third term is the marginal loss for the firm if the worker puts in less effort

at a lower degree of firm-specificity⁽⁹⁾. This loss depends on the effect of the worker's effort on training output and the firm's share in the returns. The fourth term is the gain or loss of other firms in the economy if the firm puts in more effort and the workers puts in less effort.

Differentiating social profits with respect to the degree of imperfect competition (γ) and substituting for the private optimum gives the first order condition for the optimal degree of imperfect competition:

$$(1.19) \quad \frac{1+p\beta(\delta+\gamma+\delta\gamma)}{(1+\gamma)(1+\delta)} \frac{\partial H}{\partial x_f} \frac{\partial x_f}{\partial \gamma} + \frac{p(1-\beta)(\delta+\gamma+\delta\gamma)}{(1+\gamma)(1+\delta)} \frac{\partial H}{\partial x_w} \frac{\partial x_w}{\partial \gamma} + \frac{\gamma(1-p)}{(1+\gamma)(1+\delta)} \left(\frac{\partial H}{\partial x_f} \frac{\partial x_f}{\partial \gamma} + \frac{\partial H}{\partial x_w} \frac{\partial x_w}{\partial \gamma} \right) = 0$$

The first term of (1.19) is the marginal gain of the worker as the firm puts in more effort and the second term the marginal loss of the training firm as the worker puts in less effort at a higher degree of imperfect competition. The third term represents the gain or loss of other firms in the economy depending on whether the loss due to a lower effort of the worker is outweighed by the gain of the higher effort of the training firm.

The socially optimal degree of firm-specificity of the training and the socially optimal degree of imperfect competition depend on the relation between the willingness to invest in training (to put in effort) for both the worker and the training firm and the effectiveness of these investments in terms of training output. If the effort of the training firm has a much bigger impact on training output than the effort of the worker then the socially optimal levels of firm-specificity and imperfect competition are higher *ceteris paribus* than if the worker's effort has the highest impact.

(9) Note that $\frac{\partial x_w}{\partial \delta} < 0$.

2. Evidence on the division of training returns

As shown in the previous chapter the individual's benefit of training is given by the wage increase due to training and the employer's benefit by the (increase in the) wedge between the individual's marginal productivity and pay (Acemoglu and Pischke, 1998, 1999a; Smits, 2005b). Of course, there may also be other kinds of benefits from training for both the worker and firms, some of which may seem non-material at first sight. For example, a better image or more loyal employees for the training firm and higher job satisfaction or better career perspectives for the worker. However, such derived benefits only hold if they eventually lead to higher profits and wages in the future.

A growing number of studies analyse the relation between training and subsequent wage growth. Most studies on the US find a considerable impact of training on wage (Veum, 1995; Frazis and Loewenstein, 2005). For the UK the estimated wage growth due to training is also high, ranging from 3 % to 17 %, depending on the type of training and the specification used (Blundell et al., 1999). Estimates of the wage returns in Germany range from very moderate (Pischke, 2001) ⁽¹⁰⁾ to quite high (Kuckulenz and Zwick, 2003) ⁽¹¹⁾. For other European countries there is less evidence available on the wage returns to training. Bassanini et al. (2005) use the European Community household panel (ECHP) to estimate wage returns by country. In the preferred (fixed effects) specification the impact of training incidence on hourly wages is zero or insignificant for Ireland, France, Spain, the Netherlands and Austria while the wage returns are quite high for Portugal (10 %) and Greece (6 %).

Evidence of employees' return to training is much more scarce as the wedge between productivity and pay is very difficult to measure, not only for the researcher (Werwatz, 1996; Harhoff and Kane, 1997; Bougheas and

Georgellis, 2001; Clark, 2001; Euwals and Winkelmann, 2001) but also for the employer because there is often no information on individual productivity growth in relation to training. Some studies relate training to the firm's profitability directly (Hansson, 2001) but for our purpose such an approach is less fruitful as we need to be able to relate the firm's return to the return of the individual worker. A moderate increase in the firm's profit after training does not necessarily mean that the worker profits, it may be the result of a small productivity increase. Therefore, we need information both on the total returns to training and on the division of these returns between firms and workers.

As there are hardly any datasets available which contain information on both productivity growth and wages of individual workers and on the division of the returns between firms and workers a different approach was followed. First, the available empirical evidence on productivity growth after training are presented. Next, evidence on the factors that determine the division of these returns between firms and workers are discussed. In Chapter 1 it was shown that the division of the returns to training (denoted by y_i) depends on the degree of firm-specificity of the training (δ), the degree of imperfect competition on the market for skills (γ), the worker's bargaining power (β) and the retention rate (ρ). So, if we could obtain some measures for these factors by country, sectors of industry or occupation we could say something about the expected division of the returns to training for different training programmes in different European countries. In this chapter the available empirical evidence on the degree of firm-specificity, degree of competition, the retention rate and workers' bargaining power in Europe and the US is collected from different sources and discussed.

(10) Pischke (2001) finds an annual wage return of 3 % but this is not statistically significant.

(11) Correcting the endogeneity bias (e.g. selection into training) Kuckulenz and Zwick (2003) find a wage return of 15 %.

2.1. Evidence on productivity increase

We are interested in a measure for the worker's productivity increase in the training firm, denoted by y_i in the model presented in Chapter 1. Note that y_i is not equivalent to the social returns to training as some workers may leave the training firm in which case the firm-specific part of the returns to training is lost.

There are very few datasets which contain data on individual productivity. Most studies that try to relate training and productivity use indicators at firm level such as value added per employee or turnover/sales per employee. Other indicators considered in the literature are profit per employee, scrap rates, defects/quality standards/customer complaints/customer satisfaction measures, machinery/plant down-time, employee motivation and commitment, absenteeism, employment growth, new product as percentage of product range (Keep et al., 2002).

Cedefop, Hansson et al. (2004) give an extensive review of research on the impact of training on firm productivity and other variables of firm performance. Their main conclusion is that investments in training generate substantial gains for firms irrespective of whether the training is useful in other firms. For our purpose the studies considering the relationship between training and productivity (or other measures of company performance that relate to some extent to productivity) are most informative. Some of the studies already mentioned in Cedefop, Hansson et al. (2004) are discussed below as well as several more recent studies.

Most studies on the relation between training and productivity concern the US. The evidence for the US is quite mixed. Some studies find no or very weak relationships between training and productivity (Krueger and Rouse, 1998; Black and Lynch, 2001) while other studies find considerable productivity effects (Bartel, 1994).

Dearden et al. (2000), using various data sources, including the British labour force survey estimate the effects of training on direct measures of industrial productivity. They find

that an increase of 5 percentage points in the proportion of employees who followed training, leads to 4 % increase in productivity. The effect of training on productivity is about twice as large as the effect on wages.

Barrett and O'Connell (2001) consider the returns to general training and firm-specific training separately. They use firm-level data on Irish firms to estimate the effect of training on the change in labour productivity and conclude that general training has a significantly positive effect while specific training has no significant effect. An increase in the number of general training days by 1 % leads to a productivity increase of 3 %.

Zwick (2005) studies the productivity effect of CVT in Germany. Using data from IAB establishment panels he finds that formal external courses have the largest positive impact on productivity (28 %). Quality circles also have a positive impact. Formal internal courses, seminars and talks, job rotation and self-learning do not have a significant impact. Surprisingly, on-the-job training has a significantly negative impact on productivity. Zwick explains this result by the fact that firms that provide more on-the-job training often have a higher turnover or are restructuring. Both higher turnover and restructuring reduce productivity. In another paper, using the same dataset, he studies the effect of training intensity, measured as the proportion of employees trained, and finds that an increase in training intensity by one percentage point increases establishment productivity by 0.76 percentage points (Zwick, 2006). An important conclusion from his work is that firms' training decisions are strongly related to skill gaps anticipated in the future.

Groot (1999) studies the relationship between training and productivity in Dutch firms. He finds that average productivity growth of training is 16 %. However, these estimates are based on subjective estimates of individual productivity growth by company personnel and not on real productivity data.

Almeida and Carneiro (2006) estimate the return on investments in formal job training in Portugal. Using a census of large manufacturing firms between 1995 and 1999, they find that an

increase in the amount of training per employee of 10 hours a year leads to an increase of current productivity of 0.6 %.

Brunello (2004) estimates the relationship between training and productivity using a survey for 97 large Italian enterprises and finds that a 10 % increase in the average number of hours training per head increases productivity in the sample by 1.32 % (Brunello, 2004; cited in Bassanini et al. 2005).

Most studies in Europe find a significant impact of training on productivity. The estimates for different countries are very difficult to compare, however, as the studies mentioned all use different measures of training including training incidence, number of employees trained, number of training days and training expenditure.

2.2. Evidence on the degree of firm-specificity of training

Vocational training aims to provide vocational skills. But to practise a trade in a company a worker will need a wide range of skills, not only vocational but also generic skills (problem solving skills, reading and writing skills, learning skills, communication skills) and firm-specific skills (knowledge of the company/procedures/specific machinery). Generic skills are especially important in the context of lifelong learning as people do not stay their whole life with one employer but change employers and occupations more often (Kearne, 2001).

Often these generic and firm-specific skills are learned as part of a training programme but, especially firm-specific skills may also be a by-product of the training. Simply by being in a firm, workers will often also learn some firm-specific skills, even if the training provided is aimed at skills that are more generally applicable. It is to be expected that the degree of firm-specificity is higher if most of the training takes place on-the-job than if the training takes

place off-the-job. Therefore, it is to be expected that most on-the-job vocational training programmes provide some firm-specific skills and knowledge as well. There is, however, still little evidence on the size of this firm-specific component.

Most studies use off-the-job training as a proxy for general training and on-the-job training as a proxy for firm-specific training (OECD, 2003). However, while it is plausible that skills which are learned outside the workplace are to a great extent general, the reverse is not necessarily true. Skills learned at the workplace can still be perfectly general, especially if workplace practices vary little between firms within an industry. There are only a few studies, however, that contain direct information on the degree of firm-specificity of training.

Loewenstein and Spletzer (1999) show that the degree of firm-specificity of most training programmes in the US have a very small firm-specific component. From a direct question in the national longitudinal survey of youth (NSLY) 63 % of the workers who received formal ⁽¹²⁾ training provided by employers stated that all, or almost all, of the skills they learned during the training were useful for doing the same kind of work for another employer. About 14 % of workers responded that more than half of the skills could be used at a different employer, 12 % that about half of the skills could be used and only 11 % that either less than half or none of the skills were useful. A similar question in an employer survey (employer opportunity pilot project) aimed at informal training at the start of the job gives a similar picture. About 58 % of employers indicated that almost all skills learned could be used at another employer and only 8 % that none of the skills could be used at another employer. It is important to note that there is little difference in the degree of firm-specificity between formal and informal training. Often formal training is used as a proxy for general training and informal training as a proxy for firm-specific training but, as shown

(12) Formal training refers to well-defined training programmes with an identifiable start and end and a (more or less) fixed content. Such training programmes may have different forms. Training may take place either off-the-job or on-the-job or may be a combination of the two. Informal training is training that occurs more or less spontaneously during work, such as learning-by-doing, watching others and instruction from colleagues.

by Loewenstein and Spletzer (1999), there is no empirical base for this practice.

Booth and Bryan (2002) provide some evidence of the degree of firm-specificity of training in the UK. They show, based on 1998-2000 waves of the British household panel survey, that about 85 % of recipients of (formal) training programmes indicate that the training was aimed at developing their skills generally. This measure for the degree of firm-specificity is very crude, however. Saying that the training is mainly general does not preclude it from also having a firm-specific component.

Evidence for other European countries suggests that the degree of firm-specificity is higher there than in the UK and the US. Barrett and O'Connell (2001) use firm-level data for Irish firms. Training managers were asked to give a breakdown of the total number of training days per employee for general training courses (defined as broad skill and knowledge) and firm-specific training courses (specific to the company's activity: training that is directly related to the operations of the company). They find that roughly 49 % of training is firm-specific and 43 % is general. About 7 % of the training days could not be classified as clearly general or firm-specific. A disadvantage of this approach is, however, that it provided no grading of the degree of firm-specificity.

Smits (2005b) finds that apprenticeship training in the Netherlands has a large firm-specific component. From a direct question on the firm-specificity of apprenticeship training in an employer survey she finds that more than 40 % of training firms indicate that more than 30 % of training is firm-specific. Only 8 % of respondents state that the training does not contain a firm-specific component.

Werwatz (1996) made an estimate of the firm-specificity of the German apprenticeship system by comparing the wages of former apprentices who stayed with the training firm after leaving school, with the wages of former apprentices who found employment in a

different firm. The assumption is that former apprentices who found jobs elsewhere, can no longer use their firm-specific knowledge and skills and, therefore, earn less than apprentices who stay. He found, however, that those who had left, earned more, and concluded, therefore, that the firm-specific component was small. He did find a difference between large industrial firms and smaller, traditional firms. In the first group, the firm-specific component is greater than in the latter. Franz and Soskice (1995) also argue that large companies in Germany train apprentices in both required vocational skills and firm-specific skills.

There is little empirical evidence on the importance of firm-specific skills for IVT and CVT programmes in other European countries. The curricula of initial training programmes are often regulated. Therefore, it is to be expected that the degree of firm-specificity is lower for IVT than for CVT. However, it is important to remember that regulations mostly set a minimum standard and firms are free to provide more training than that.

Concluding, the degree of firm-specificity of training depends much on the type of training programme. Still, there is some evidence that in general, the degree of firm-specificity of training in firms is lower in the UK and US than in continental Europe.

2.3. Evidence on the degree of imperfect competition

If the market for technological general skills (that is skills for which $\delta=0$) is imperfectly competitive, then the external wage rate lags behind the worker's (potential) productivity in the external market. In fact $\gamma=(y_2-w_2)/w_2 > 0$ implies that there is absolute wage compression as defined by Acemoglu and Pischke (1999a; 1999c), that is, the difference between external productivity and pay is increasing the skill level ⁽¹³⁾ ⁽¹⁴⁾.

(13) Remember that initial productivity and pay is normalised at zero so that y^2 and w^2 can be interpreted as absolute productivity and wage growth respectively.

(14) Note that we have not defined γ in the case of no training. If we define $\gamma^*=0$ as the degree of competition for untrained workers then $\gamma>0$ implies that there is relative wage compression as well. As pointed out by Booth and Zoega (2004) relative wage compression is a sufficient but not a necessary condition for firms to finance training.

As discussed in Chapter 1, economic literature provides several explanations for imperfect competition on the market for technological general skills. First, the number of firms in which the skills can be used may be limited. Second, there may be imperfect information either on the quality of training or the quality of the worker so that firms have difficulty assessing the skill levels of workers trained externally. Finally, there may be institutions, such as trade unions or minimum wage legislation that compress the wage structure. It has proven hard to test these theoretical explanations for imperfect competition empirically. In this section two approaches will be followed to get a picture of the extent to which the market for trained workers is imperfectly competitive. First, indirect evidence on the degree of competition will be discussed by considering the available evidence on the density of the market for trained workers, on certification and on the role of trade unions in different European countries. Second, some direct evidence of wage compression in Europe is presented.

2.3.1. Density of the market

Some skills may only be useful in a set of firms defined by product, type of work or geographical area (Becker, 1962). If this set of firms is relatively small, the market for trained workers may not be perfectly competitive and the external wage rate will lag behind external productivity.

Vocational training is, by nature, to a great deal specific to an occupational field or industry. If there are few employment opportunities in the occupation or industry the worker is trained for, there is a positive probability that workers who leave the training firm fail to find a skilled job (Acemoglu and Pischke, 1999a, 1999c). Further, many workers are reluctant to move too far away from their home towns. Anticipating limited employment opportunities in the region and high mobility costs, firms in the region can pay trained workers a wage below their productivity. This wedge between productivity and pay will decrease with better employment possibilities in the region and the industry the worker is trained for. Therefore, firms in regions with low employment density and few employment possibilities are more willing to pay

for technological general skills than employers in regions with a high employment density. Brunello and De Paola (2004) show that in Italy training incidence for general training is indeed higher in provinces with lower employment density. Brunello and Gambarotto (2004) find that in the UK (general) training is also less frequent in dense areas. A 10 % decrease in density reduces the probability of training by 0.07, which is more than 20 % of the average incidence of training in the UK. Density is measured as total employment in private industry and services per square kilometre. Backes-Gellner and Mure (2005) consider the relation between labour-market tightness and training investment in Germany. They use both data on regional labour-market tightness and industry-specific labour-market tightness. They define regional labour-market tightness by the ratio of job offers relative to the total labour force per region and industry-specific tightness by the ratio of job offers relative to all workers in the respective industry. They find that the regional labour-market tightness has a significant negative effect on firms' investment in training while the industry labour-market tightness effect is insignificant.

Apart from the studies mentioned there is little empirical evidence on the relationship between training and the size of the market for trained workers in different occupations and industries by geographical area.

2.3.2. Certification

Successful certification of training makes the market for skilled workers more transparent and thus increases the degree of competition (Acemoglu and Pischke, 2000). In many European countries apprenticeship training is certified but the quality of the certification system differs between countries. For the degree of competition it is especially important that the skill level of trained workers is soundly evaluated and can be communicated to other employers. Ideally, the successful completion of both the theoretical and the practical component of training depends on an examination held by an organisation outside the firm. This is the case in most European countries, for example in Belgium, Denmark, Germany, Ireland,

Greece, France, Luxembourg, the Netherlands, Austria, Portugal and Finland (Linderholm and Parker, 2000). In a few countries such as Spain, Italy, Sweden, and the UK, evaluation of practical skills is done by the training firm (Linderholm and Parker, 2000; Bassanini et al., 2005). It is clear a certification system that relies on evaluation of practical skills by training firms alone is insufficient to guarantee the competence level of the worker as training firms do not always have the right incentives to perform this evaluation adequately.

There is little information available on certification of CVT. Often continuing training is not certified. Pischke (2001) shows that about 62 % of training recipients of the 1998 wave of German socioeconomic panels report they received a certificate from their training. There is, however, little evidence of the value of these certificates on the labour market. It will depend much on the type of training whether the training ends with some validation of the acquired skills. Training that takes place mainly on-the-job is usually not certified while training off-the-job provided by an external training institution sometimes ends with some evaluation. Further, as CVT is usually not imbedded in the national qualification system, it is often unclear how widely this certification is recognised. Therefore, it is to be expected that, in general, firms can appropriate a higher share of returns from CVT than from returns to IVT.

2.3.3. Trade unions

In most European countries, unions are involved in wage determination but there are considerable differences in the level at which bargaining takes place and collective bargaining agreements are covered. For our study it is important to know to what extent unions tend to compress the external wage rate since the external wage level acts as the worker's outside option and thus determines the worker's minimum share in the benefits of training. The external wage rate will be affected if union bargaining takes place at industry or central levels. If wages at industry level are compressed, firms in that industry will be able to appropriate a bigger share of training returns. Union bargaining at firm level does not affect the external wage rate

but instead increases workers' bargaining power to obtain a higher share of the training surplus. This will be discussed in Section 2.5.

Table 1 gives an overview of collective bargaining coverage in several European countries and the US. Collective bargaining coverage is high in Belgium, France, Austria, Finland and Sweden and quite low in the UK and eastern Europe. As can be seen from Table 2, in most countries characterised by low coverage, bargaining takes place at company and plant levels. Industrial-level bargaining is dominant in Austria, Belgium, the Netherlands, Spain and Sweden. So, it is to be expected that firms in these countries can appropriate a higher share of returns to training.

Table 1: **Collective bargaining coverage in Europe and the US: percentage of wage and salary earnings covered by collective bargaining in Europe and the US, 2000**

Countries		%
AT	Austria	95*
BE	Belgium	90*
CZ	Czech Republic	25*
DK	Denmark	80*
FI	Finland	90*
FR	France	90*
DE	Germany	68
HU	Hungary	30*
IT	Italy	80*
LU	Luxembourg	60*
NL	Netherlands	80*
NO	Norway	70*
PL	Poland	40*
PT	Portugal	80*
SK	Slovakia	50*
ES	Spain	80*
SE	Sweden	90*
CH	Switzerland	40*
UK	United Kingdom	30*
US	United States	14

* Lower bound estimates.

Source: OECD, 2004.

Table 2: **Wage setting institutions 1995-2000: centralisation of bargaining**

Company and plant level bargaining	Czech Republic; Hungary; Poland; UK; US
Combination of industry and plant/level bargaining, with an important share of employees covered by company bargains	Denmark; France; Italy; Slovak Republic; Switzerland
Industry-level bargaining	Austria; Belgium; Germany; Netherlands; Spain; Sweden
Predominantly industrial bargaining but also central-level agreements	Ireland; Norway; Portugal
Central level agreements	Finland

Source: OECD, 2004.

2.3.4. Minimum wages and wage compression

In this section we collect some direct evidence on wage compression in different European countries. Minimum wages compress wages at the bottom of wage distribution. If the productivity of low-skilled workers is increased to the level that matches the wage floor, the returns to training fully accrue to the firm that employs them. Minimum wages have no effect on the distribution of training returns for workers

with higher skill levels. Table 3 gives the relative minimum wages and the incidence of minimum wages per country. Relative minimum wages is rather high in France (60 % of full-time median earnings) and as a consequence the incidence of minimum wages is also highest in France. Minimum wages are lowest in eastern European countries and also in Spain and the UK. In most countries the incidence of minimum wages is highest in wholesale/retail trade and much lower in manufacturing (OECD, 1997).

Table 3: **Minimum wage relative to full-time average earnings and the incidence of minimum wages, 2004**

Countries		Minimum wage as a proportion of full-time average earnings	Proportion of workers earning a minimum wage
BE	Belgium	46.39 ^(a)	..
CZ	Czech Republic	38.81	2
FR	France	60 ^(a) ^(b)	15.60
EL	Greece	49 ^(a) ^(b)	..
HU	Hungary	40.70	8
IE	Ireland	50	3.10
LU	Luxembourg	49.57	18
NL	Netherlands	46.14	2.07
PL	Poland	35.06	4.49
PT	Portugal	40.70	5.50
SK	Slovakia	34.14	1.93
SL	Slovenia	44.13	2
ES	Spain	37.65	0.77
UK	United Kingdom	37.89	1.40
US	United States	32.87	1.40

(a) Data from 2002.

(b) Relative to median wages.

Source: Eurostat and OECD (2006).

Table 4: Earnings dispersions in OECD countries 1995-99: 90-10 percentile ratios for the gross earnings of full-time employees

Countries		%
BE	Belgium	2.28*
CZ	Czech Republic	2.86
DK	Denmark	2.16*
FI	Finland	2.36
FR	France	3.07
DE	Germany	2.87
HU	Hungary	4.15
IE	Ireland	3.97
LU	Luxembourg	2.40
NL	Netherlands	2.85
NO	Norway	1.96
PL	Poland	3.50
PT	Portugal	3.76*
SE	Sweden	2.23
CH	Switzerland	2.69
UK	United Kingdom	3.45
US	United States	4.59

* 1990-94.

Source: OECD, 2004.

Table 4 gives an overview of the wage dispersion in several European countries and the US. Wage dispersion is defined as the 90-10 percentile ratios for the gross earnings of full-time employees. The table shows there are considerable differences between countries. Wage dispersion is highest in the US. In Europe wage dispersion is highest in the UK and Ireland. Countries with very low wage dispersion are the Nordic countries (Norway, Finland, Denmark and Sweden).

It is important to realise that wage dispersion is not directly related to wage compression as defined by Acemoglu and Pischke (1999a; 1999c) since a low wage dispersion may either reflect skills compression or wage compression. For example, a lower wage dispersion in Germany than in the US may (partly) reflect a narrower skills distribution in Germany (Freeman and Schettkat, 2001).

Bassanini and Brunello (2003) measure wage compression by taking the difference between the median growth rates of gross hourly wages of employees who received training and those who did not. They show that there are considerable differences in wage compression between countries. In Austria, Germany and France the wage growth differential is close to zero while in the UK, Italy, Spain and Belgium it is relatively high ranging from 0.026 to 0.048. The gain in median wages ranges from 2.6 % to 4.8 %. The wage growth differential also varies between high-skilled and low-skilled occupations and between industries. For high-skilled occupations it is close to zero, for low/medium occupations it is 0.027. In mining, manufacturing and utilities the wage growth differential is 0.033 and in services it is close to zero. Further, the wage growth differential is relatively high for the lowest educational attainment (0.04), close to zero for intermediate level and moderate (0.021) for higher educational level. Bassanini and Brunello (2003) find that their measure for wage compression correlates with the incidence of general training (measured as off-site training). In clusters with a low wage differential there is a higher incidence of general training, although the effect is quite small. For firm-specific training (measured by training on-the-job) there is no relation with wage compression. Note that Bassanini and Brunello implicitly assume that training increases productivity more than wages. It could be the case, however, that a low wage differential reflects a low productivity increase. If the wage differentials fully reflected productivity increases there would be no reason to expect a correlation between training incidence and the wage differential because firms would not be able to appropriate any of the returns to training.

Almeida-Santos and Mumford (2004) analyse the relationship between wage compression and training for Britain. They use data from the workplace employee relations survey 1998. Wage compression is measured as the log of the ratio of the 90th and the 10th percentile levels of wage distribution. They conclude that a higher level of wage compression is associated with a greater incidence and duration of training. When dividing the wage compression

measure to explore the upper and lower halves of distribution separately, they find that it is the wage compression in the upper half that accounts for the positive relationship between wage compression and training.

Budría and Telhado Pereira (2005) study the relationship between education and wage dispersion in nine European countries (France, Finland, Germany, Greece, Italy, Norway, Portugal, Sweden and the UK). They conclude that in most countries wage dispersion is higher for higher-educated workers (tertiary education) than for lower-educated workers. Exceptions are Germany, Greece and Italy. This result suggests that firms can appropriate a higher share of training results for higher-educated workers than for lower-educated workers.

Mourre (2005) examines wage compression in the EU using data on wages from the structure of earnings survey 2002. He defines wage compression as the lower difference in wages across workers or firms compared with the difference in productivity. Mourre estimates wage compression across occupations and across educational attainment. As relative marginal productivity cannot be observed across occupations and educational attainment directly he uses a methodology 'based on the derivation of a labour demand model which is estimated by means of cross sectional econometric analysis' (Mourre, 2005, p. 3). In this model there is no data needed on relative productivity or relative output. An estimate of relative wage compression is obtained by comparing the estimated wage coefficient of the employment equation with that of the relative employment equation. Mourre presents estimates for different groups of countries within the EU. He finds that there is relatively large wage compression across occupations in continental and southern countries (Belgium, Germany, Spain, France, Italy, Luxembourg and Austria), no wage compression across occupations in Anglo-Saxon countries (Ireland and the UK) as well as in northern European countries (Denmark, the Netherlands, Finland and Sweden). The latter surprising result suggests, according to Mourre, that the relative low wage dispersion in these countries, measured by the ratio of the upper and lower

percentiles of wage distribution, just reflects compressed productivity distribution.

Comparing occupations he finds that wages are more compressed for plant and machine operators and assemblers, clerks, craft and related trade workers, service workers and shop and market sales workers and less compressed for professionals, technicians and associate professionals. Low-skilled occupations have the highest wage compression except for elementary occupations. Note that this result is contrary to the findings of Bassanini and Brunello (2003). However, Mourre's estimates seem to depend much on the specification used.

Comparing the evidence for the degree of imperfect competition we can conclude that in general the market for trained workers is more competitive in the UK, the US and eastern European countries than in other European countries. In the UK, the US and most eastern European countries there is little trade union bargaining at industry level, trade union coverage is low and wage compression is low as well. In most continental, southern and northern European countries trade union bargaining takes place wholly or partly at industry level and trade union coverage is quite high resulting in a higher wage compression. Especially in Belgium, Spain, France and Italy there seem to be high wage compression.

2.4. Evidence on the retention rate

The retention rate is an important factor in determining the division of returns to training between the firm, the worker and other firms. If the worker leaves the firm immediately after completing training, the training firm cannot appropriate any of the returns to training. The firm-specific returns are then lost. If the worker finds a job at another firm the general returns are shared between the worker and his new employer, depending on the degree of competition on the market for general skills. If the worker does not succeed in finding a new job immediately and becomes unemployed for some time, some of the general returns are

also lost ⁽¹⁵⁾. Of course, for workers who stay in the training firm after completing the training it also matters how long they stay. So we are not only interested in the retention rate immediately after training, but also in the retention rate in subsequent years.

Separations may be either voluntary, in which case the worker quits, or involuntary, in which case the worker is laid off. In the model presented in Chapter 1 all separations are exogenous and in that case the distinction between quits and lay offs does not matter. However, separations may be connected to the (division of) returns to training. For example, a worker may quit after completing training because the wage offered by the training firm is too low or he may be laid off because his productivity is too low ⁽¹⁶⁾. In practice it will be difficult to determine which part of the separations is exogenous and which part depends on training outcomes.

It is to be expected that there are considerable differences in retention rates after IVT and CVT. In the case of IVT, such as apprenticeship training, workers are often employed with the training firm because of the training. However, not all firms employ apprentices after training because of a future need for skilled labour. Some firms employ apprentices as a substitute for unskilled or skilled labour or because of a social obligation. These firms often lay off apprentices once training has been completed. Other firms use the apprenticeship period as probation and will only retain the most capable apprentices.

Further, job mobility is highest for younger workers in their early 20s at the beginning of their careers (Parsons, 1977; Hall, 1982; Beeson Royalty, 1998). During that period people change jobs until they find a job that matches their capabilities and preferences. Labour turnover also declines with tenure. In

the first year of a job, 56 % of women and 55 % of men will stay in the same job, at seven years of tenure these percentages become 88 % and 90 % respectively (Beeson Royalty, 1998). There is some evidence that employers tend to select workers with the lowest expected job turnover for CVT. For example Beeson Royalty (1996) finds that differences in expected job turnover influence the probability of receiving training and is one reason for women to receive less training than men. Loewenstein and Spletzer (1997) find that employers tend to delay training new workers until they have more certainty that they will stay for some time. Therefore, it is to be expected that the retention rate after IVT is in general lower than the retention rate after CVT.

In the following section the evidence for labour turnover rates after apprenticeship training is presented, then the evidence for labour turnover in Europe and the US in general. Ideally we would like to have information on the retention rates directly after completing training as well as retention rates for subsequent years. Such information is sometimes available for apprenticeship training but usually not for continuing training. Instead information on employer tenure and retention rates for the labour force as a whole differentiated by country and sector of industry is presented.

2.4.1. Retention rates after apprenticeship training

The retention rate is an important factor in determining firms' expected profits from apprenticeship training. However, not all firms train apprentices because of investment motives. As mentioned above, some firms employ apprentices for their contribution to production during the training phase. These

(15) Note that the change to become unemployed after finishing training is not explicitly modeled in Chapter 1. If there is a positive change to become unemployed the external wage rate w^e can be interpreted as the worker's expected earnings if he quits and these earnings are decreasing in the change to become unemployed. Suppose the change to become unemployed is q , in which case the worker has zero earning and that the wage offer in any other firm is equal to ω then the expected external wage rate is equal to $w^e = (1-q)\omega$.

(16) In the theoretical model it is assumed that workers will stay as long as they are offered at least the market wage and will quit otherwise. Firms on the other hand will never offer a wage below the market wage because it is assumed that the market wage never exceeds internal productivity. There is also a class of models that assumes that firms set a wage unilaterally while allowing for workers' expected mobility costs or attachment to the training firm. In these models the retention rate depends on the gap between the market wage and the wage offered by the training firm (Smits, 2005b).

firms will probably lay off apprentices after the training period. Ideally, one should therefore make a distinction between quits and lay offs. Unfortunately most datasets do not allow this distinction. However, by assuming that apprentices after training first accept the job offer of the training firm and subsequently search for a better job opportunity, the initial retention rate can give an indication of the lay-off rate and the subsequent mobility an indication of the quit rate.

In Germany roughly 70 % of all apprentices stay for some time in the training firm after completing training (Harhoff and Kane, 1997; Euwals and Winkelmann, 2001). The proportion of stayers varies markedly between sectors. In large industrial firms the retention rate is much higher than in small firms which are mostly in the crafts sector. Two thirds of apprentices who initially stay with the training firm, leave within three years. After three years only 24 % of apprentices are still in the training firm. For firms with more than 1 000 employees this is 45 % (Euwals and Winkelmann, 2001). In recent years the retention rate has decreased somewhat (Euwals and Winkelmann, 2001). In Britain it seems to be slightly higher. Only 16 % of apprentices are laid off at completion of training (Booth and Satchell, 1994). A few years later the retention rate has decreased to 45 %.

In other countries retention rates are lower. In the Netherlands, fewer than 50 % of graduated apprentices are still with the training firm one and a half years after graduation (Smits and Stromback, 2001). There are considerable differences between training occupations. Apprentices trained in technical and care occupations stay more often with their training firm than apprentices trained in administrative occupations. Apprentices in large firms stay more often than apprentices in small firms. From a survey among Dutch training firms it appears that the average chance an apprentice is offered to continue in the training firm is more than 70 %. It can, therefore, be concluded that far fewer apprentices stay than firms would like. In Denmark retention rates are not high either, 40 % to 50 % depending on the stage of the business cycle (Westergard-Nielsen and Rasmussen, 1997).

In France, the proportion of stayers is quite small. Less than 30 % of all apprentices remain for some time with training firms after completing training (Vialla, 1997 cited in Schwerdt, 2001). Schwerdt (2001) showed that in 1998 only 12 % of former apprentices remained with the training firm one year after training. This low rate is partly because apprentices who continue training at a higher level in the training firm are not included in the figures. In 1998, 29 % of apprentices continued training and 40 % of them did so in the training firm. Surprisingly the retention rate is lowest for large training firms with more than 500 employees (only 7 %). As nearly 40 % of apprentices trained in large firms become unemployed after apprenticeship, it is clear that most apprentices do not leave voluntarily.

All in all it can be concluded that, with the exception of France, in most European countries the lay-off rate after apprenticeship is low but that the quit rate in subsequent years is considerable. This suggests that the training investment must be regained shortly after completing training.

2.4.2. Labour turnover in Europe and the US

Table 5 gives the median employer tenure for several European countries and the US. Employer tenure is, in general, much lower in the US than in Europe. There are, however, also several European countries that have very low employment tenure, notably Denmark, Spain, Ireland, the Netherlands and the UK. Employer tenure is high in Belgium, Germany, Italy and Poland.

Five-year retention rates, measured as the percentage of workers in a year who will still be with their current employer five years later, are only available for a few countries. Five-year retention rates are low in Spain and Finland and high in Germany (OECD, 1997). In Spain, France and Finland, retention rates are decreasing, mostly because of increased use of temporary contracts (OECD, 1997; Dolado et al., 2002).

Although there are considerable differences in median employer tenure between countries, the differences between industries and occupations within countries are even more striking. Moreover

Table 5: Median employer tenure in years (1995) and five-year retention rate (1999-95)

Countries		Median employer tenure in years (1995)	Five-year retention rate (1999-1995)
DK	Denmark	4.4	..
FI	Finland	7.8	40.8
FR	France	7.7	49.9
DE	Germany	10.7	60.7
EL	Greece	7.5	..
IE	Ireland	5.3	..
IT	Italy	8.9	..
LU	Luxembourg	7.2	..
NL	Netherlands	5.5	..
PL	Poland	17.0	..
PT	Portugal	7.7	..
ES	Spain	4.6	42.8
SE	Sweden	7.8	..
CH	Switzerland	6.0	55.2
UK	United Kingdom	5.0	..
US	United States	4.2	48.6

NB: The median employer tenure is the median number of years workers remain with the same employer and is calculated by taking the tenure class into which the middle observation falls and assuming that observations are evenly distributed by tenure within this class. The five-year retention rate is the percentage of workers who remained with their employer for another five years.

Source: OECD, 1997.

Table 6: Annual total separations rates (1) by industry, 2005

	%
Total private	45.9
Natural resources and mining	34.9
Construction	65.8
Manufacturing	31.6
Durable goods	32.1
Nondurable goods	30.8
Trade, transportation and utilities	46.1
Wholesale trade	27.7
Retail trade	55.1
Transportation, warehousing, and utilities	39.8
Information	29.3
Financial activities	25.9
Finance and insurance	22.5
Real estate and rental and leasing	35.5
Professional and business services	57.9
Education and health services	28.7
Educational services	22.7
Health care and social assistance	29.8
Leisure and hospitality	75.8
Arts, entertainment, and recreation	77.9
Accommodations and food services	75.4
Other services	44.2
Government	14.9
Federal	15.8
State and local	14.7
Total	40.9

(1) The number of total separations during the entire year as a percentage of annual average employment.

Source: BLS, 2006.

the degree of dispersion of tenure by industry and occupation across countries appears to be similar. Industries with low employer tenure are hotels and restaurants, wholesale and retail trade, real estate, renting and business activities. Industries with high average tenure are electricity, gas and water supply, public administration and financial services (OECD, 1997). For the US there is information available on annual separation rates by sector of industry, these figures are presented in Table 6. Separation rates by industry follow a similar pattern to average employer tenure. In 2005, the total annual separations rate was 40.9 %. Industries with the highest separation rates are construction, retail trade, leisure and hospitality. The lowest separation rates are found in the government sector, financial activities and educational services.

There are also substantial differences in average employer tenure between occupations. In general lower skill white collar occupations such as service workers, shop and market sales workers and blue collar workers have a low average tenure while higher skilled white collar occupational groups such as legislators, senior officials and managers have a high average employer tenure (OECD, 1997). For educational levels the differences in average tenure are less

marked but in general it seems that lower levels of education have lower tenures. Five-year retention rates are also lower for workers with lower levels of education.

Reviewing empirical evidence on retention rates we can conclude that in general the retention rates in the US and the UK are lower than in continental Europe but that differences between industries within countries are more striking than differences between countries.

2.5. Evidence on workers' bargaining power

The ability to influence the setting of prices or wages depends on several factors: the bargaining skills of the parties involved and the competitive forces that determine the margins for negotiations. Some economists define bargaining power as the entire set of factors that determine the ability to set prices or wages while others refer to bargaining only as the ability to influence prices and wages given the margins set by competitive forces (Lindblom, 1948). As the competitive forces that determine the workers' market wages have been discussed separately in Section 2.1, here, the second definition for bargaining power is used. Workers' bargaining power, denoted by β in the model of Chapter 1, determines what share of the training surplus (that is the difference between internal productivity and the external wage, $y_1 - w_2$) the worker can obtain. Note that the size of the training surplus depends on the external wage rate which is set by competitive forces. There may be either individual bargaining between the worker and the firm or workers may be represented by a trade union. In the latter case the trade union bargains with the firm on the wage of trained workers once the training has been completed (see also Booth and Chatterji, 1998). Note, that only trade union bargaining at firm level will increase workers' bargaining power as it is defined here. Trade union bargaining at central or industry level will not affect workers' bargaining power but will set the margins for bargaining at firm level as it set the external wage rate which is the worker's outside option in the negotiations.

It is to be expected that, in general, workers will obtain a larger share of the training surplus in countries where trade union bargaining takes place mainly at firm level. Countries for which this is the case are the UK, the US, and eastern European countries (Czech Republic, Hungary and Poland). Other countries with an important share of employees covered by company bargains are Denmark, France, Italy, Slovakia and Switzerland (Table 2).

There are several studies on rent-sharing in the labour market that try to obtain direct estimates of workers' bargaining power for different countries. These studies all depart from a model in which unions and the firm engage in Nash bargaining over wages and employment. They arrive at a similar expression for the bargained wage as equation (1.4) in Chapter 1, namely $w_1 = w_2 + \beta (y_1 - w_2)$ (Blanchflower et al., 1996; Van Reenen, 1996; Hildreth and Oswald, 1997; Margolis and Slavanes, 2001; Ballot et al., 2002; Dobbelaere, 2005). Some studies present estimates of β , others present estimates of the elasticity between rents and wages, that is $\beta / (1 - \beta) * (y_1 - w_1) / (y_1 - w_1) / w_1$. The estimated value of bargaining power from these studies ranges from 0.005 to 0.3 for various countries.

Ballot et al. (2002) use panel datasets of firms in France and Sweden to analyse how the returns to investments in physical capital, R&D and training are shared between firms and workers. They find that firms share in the returns from training but that this share is much lower than the share in returns to physical capital. In France firms' share is 82 % and in Sweden 67 %. The bargaining power of workers is found to be 0.091 in France and 0.082 in Sweden.

Dobbelaere (2005) analyses imperfections in both the product and the labour market for firms in the Belgian manufacturing industry. She presents estimates of bargaining power for 18 sectors. She finds that workers' bargaining power ranges from 0.034 in the milk products sector to 0.394 in the sectors of office and data processing machines, precision and optical instruments. It seems as if the sectors of industries where workers have more bargaining power are also those sectors that employ relatively more highly skilled workers.

Margolis and Slavanes (2001) use matched firm-worker panel data from France and Norway to analyse rent-sharing in both countries. They report estimates of worker's bargaining power of 0.0132 for France and 0.0244 for Norway. When allowing for heterogeneous bargaining power, that is different bargaining power parameters for high and low performing firms, the estimated average bargaining power is somewhat higher.

Blanchflower et al. (1996) find that the elasticity of wages with respect to the profit per employee in the US is 0.08. Hildreth and Oswald (1997) find figures ranging from 0.02 to 0.04 for the UK. Using the sample averages to calculate bargaining power we find bargaining power ranging from 0.036 to 0.175.

All in all we can conclude that estimates of workers' bargaining power vary a lot, not only between countries but also between different studies referring to the same country. One of the reasons for these differences might be that workers' bargaining power varies a lot between industries, as is shown by Dobbelaere (2005). Therefore, estimates of workers' bargaining power for a country may depend very much on the industry composition of the dataset used. It is to be expected that in industries where workers have more bargaining power, and thus appropriate a higher share of the training surplus, firms will invest less in training (Chapter 1). There are, however, no empirical studies available that test this relationship.

3. Conclusions and policy implications

In this contribution we developed a framework to characterise vocational training programmes based on the factors that influence the division of returns to training between the employer and the individual. We considered four factors:

- (a) degree of firm-specificity of training;
- (b) degree of imperfect competition on the market for trained workers;
- (c) retention rate of trained workers;
- (d) bargaining power of trained workers.

The higher the degree of firm-specificity, the degree of imperfect competition and the retention rate and the lower the worker's bargaining power, the higher the training firm's share in training returns. The worker's share in returns increases in the retention rate and the worker's bargaining power and decreases in the degree of firm-specificity and the degree of imperfect competition. It is to be expected that these factors differ much between different training programmes within countries and even within industries. There is, however, at the moment hardly any comparable information available on individual training programmes. Nevertheless, to gain more insight into division of training returns for different training programmes we collected the available empirical evidence on the values for these parameters of the model from different sources in the literature by country, and whenever available by sector of industry and occupation.

3.1. Differences between IVT and CVT

As mentioned above, there is little information available on individual training programmes. Nevertheless, we can say a few things about the differences between IVT and CVT. In general IVT programmes are aimed at transferable skills, therefore, the degree of firm-specificity will be lower than for CVT programmes. In most countries IVT programmes, notably apprenticeships, are certified and, therefore,

the market for workers trained in an IVT programme, is as a rule, more transparent than the market for CVT. Further, although there is little comparable empirical evidence on retention rates after IVT and CVT, it is to be expected that retention rates are, in general, lower for IVT programmes than for CVT programmes as firms tend to select workers with the lowest expected job turnover for CVT. So, available evidence suggests that firms can appropriate a higher share of returns from CVT programmes than from IVT programmes.

3.2. Differences between countries

Comparing countries on the factors that determine the division of returns to training between firms and workers the most striking differences can be found between the UK and the US on the one hand, and Germany on the other. In both the UK and the US most training seems to have a very low degree of firm-specificity. In both countries there is little trade union bargaining at industry level, trade union coverage is low and wage compression is low as well. Labour turnover is relatively high. In Germany, most training is general as well, but there is some evidence, at least for apprenticeship training, that the training consists of a considerable firm-specific component as well. Trade union bargaining takes place at industry level and trade union coverage is quite high resulting in a high wage compression at industry level. Labour turnover is relatively low.

So the available empirical evidence on the factors that determine division of the returns to training between employers and workers suggests that firms in Germany can, in general, appropriate a higher share of returns to training than firms in the UK and US. These findings do not come as a surprise as they support the dichotomy in training systems between the UK and the US on the one hand, and Germany on

the other which has been described extensively in training literature (see also Harhoff and Kane, 1997; Winkelmann, 1997).

For other European countries empirical evidence is less conclusive. In Belgium, France and Italy wage compression seems to be high and labour turnover is low, suggesting that firms can appropriate some of the returns to training. In Spain wage compression is high as well but labour turnover is also high. In Denmark and the Netherlands there is moderate wage compression and high labour turnover.

The evidence on eastern European countries is scarce, but in general wage compression seems to be low, most wage bargaining seems to take place at firm level and labour turnover is high (with the exception of Poland) suggesting that in these countries firms can appropriate little of the returns to training.

3.3. Differences between industries

The factors influencing the division of returns to training, especially the retention rate, bargaining power and the degree of imperfect competition (wage compression) appear to vary more between industries within countries than between countries. In most countries turnover rates are high in the services sector, notably in the retail trade, the leisure and hospitality sector, and in the construction sector. Low labour turnover is found in the public sector and in the financial services sector. Wage compression is found to be highest in the service sector. There is, however, still little information available at a lower aggregation level.

3.4. Policy implications

For a training programme to be successful it is important that both parties, the employer and the individual, are able to share in the returns to training. If either the employer or the worker does not share in the returns the quality of the training programme may be negatively affected. To ensure that both parties share in the returns the training should be partly firm-specific or there should be imperfect competition on the market for trained workers.

Government policies aimed at stimulating investment in training should consider this effect. First, it is important to know which party will profit from training and for which kind of training. For example, it makes little sense to stimulate firms by means of wage cost subsidies to invest in training, if firms do not share in the benefits from training. A wage cost subsidy raises the firm's current profits but will not affect its future benefits from training. Therefore, the firm has little incentive to spend much effort in making the training programme a success. So policies aimed at stimulating training investments that lower the costs of training by means of subsidies or tax reductions should be directed at that party who benefits most from the training or should be accompanied by measures that affect the division of benefits. To obtain a clear picture on the division of the benefits of training, ideally one should consider, for each training programme separately, the factors influencing the division of training costs, that is, the degree of firm-specificity, the degree of imperfect competition, the retention rate and the worker's bargaining power. As these factors vary a lot between industries within countries than between countries it is difficult to formulate a government policy for stimulating training at country level. Policies formulated at industry level will probably be more successful as they can better take these factors into account.

3.5. Future research

The framework developed in Chapter 1 has not been tested empirically yet, but has served as a handle to discuss the literature on the returns to training. In the literature, components of the model have been tested separately but there are hardly any publications that consider the effect of all the factors that might affect the division of training benefits between firms and workers simultaneously. The main reason is that there are very few suitable datasets available to test such a model. Therefore, further research should first concentrate on collecting better training data for Europe. As mentioned before, the factors influencing the division between firms and workers not only seem to vary a lot between countries but also between industries

and regions. Therefore, to test the model, data by country, region and industry are needed. The ideal dataset should contain detailed information on private training expenses per worker and indicators for the degree of firm-specificity, the degree of imperfect competition, the retention rate and workers' bargaining power. The model predicts that firms will invest more in training if they can appropriate a higher share of returns, that is, as the degree of firm-specificity, the degree of imperfect competition and the retention rate are higher and workers' bargaining power is lower. The empirical relationship between the variables that determine the division of training returns and firms' training expenses thus provides a simple test of the model.

As discussed throughout this contribution, it is not straightforward to measure the various components of the model. Table 7 gives an overview of possible indicators for the various components of the model, most of which have been discussed in Section 2, and several potential datasets for Europe. There are no datasets available yet which cover all components of the model. The ECHP provides detailed information on training incidence paid for by the worker, and has information on the type of training and to a lesser extent on the type of skills which can be used as proxies for the degree of firm-specificity and also provides some information on certification of training. Further, the ECHP contains information on tendency to quit after training, which may be used as an indicator for the retention rate and on

earnings. As it is an individual survey it contains little information on the firm, however. So, it provides no direct information on firms' training expenditure. The CVTS is an employer survey which provides detailed information on firms' training expenditure but it provides no measures for any other component of the model. Further, IVT is not included in this survey. Information on minimum wages and wage compression can be obtained from the OECD earnings database and the structure of earnings survey. For measures concerning trade union coverage OECD labour force statistics are a useful data source. Comparable measures of training technology or efficiency of training are not available. These have to be controlled by dummy variables for the training method, training level, type of training and type of skills and knowledge.

Most components of the model can be measured by using individual datasets such as the ECHP, but to obtain accurate measures on firms' training expenditure employer survey data are required. Therefore, to cover all components of the model linked employer-employee panel data for Europe are needed which contain detailed information on training per worker, not only on the time and money devoted to training but also on the content of the training programme. Although such a dataset would be very valuable for research on the private benefits for training as well as for formulating and evaluating training policies (Bryson et al., 2006), unfortunately, it does not yet exist. This remains an issue for future research.

Table 7: Measures for the various components of the model

Model component	Measure	Dataset	
Training technology ($\frac{\partial H}{\partial C_f}$)	Dummy variables for training method		
	Level of training	ECHP/IALS	
	Type of training (formal/informal training, on-the-job versus off-the job)	ECHP/IALS	
	Type of skills and knowledge learned (vocational reading skills, computer skills, foreign language)	ECHP	
Private training expenses (C_f and C_w)	Participation in employer and non-employer sponsored training	ECHP/IALS	
	Volume of employer and non-employer sponsored training (hours)	ECHP/IALS	
	Firms' training expenditures per employee	CVTS	
Degree of firm-specificity (δ)	Direct measure in survey: How many of the skills that you learned in this training programme do you think could be useful in doing the same kind of work for an employer different than current employer		
	Type of training: formal/informal training, on-the-job versus off-the job	ECHP/IALS	
	Type of skills and knowledge learned: vocational reading skills, computer skills, foreign language, etc.	ECHP	
Degree of imperfect competition on the market for skills (γ)	Density of the market	Number of workers by region, occupation and/or industry per squared kilometre	EU LFS
		Ratio of job offers relative to total labour force per region/industry	
	Certification	Training leads to recognised diplomas	ECHP/IALS
	Trade unions	Percentage of workers covered by bargaining at industry level	OECD labour force statistics
	Minimum wages	Minimum wages relative to full-time median wages	OECD earnings database/SES
		Percentage of workers paid the minimum wage	OECD earnings database/SES
	Wage compression	Wage dispersion (ratio of the 90th and 10th percentile levels of the wage distribution)	OECD earnings database/SES/ECHP
Retention rate (ρ)	One to five year retention rates after completing the training		
	One to five year retention rates for all workers	OECD labour force statistics	
	Percentage of (recently) trained workers looking for another job	ECHP	
Workers' bargaining power (β)	Percentage of workers covered by bargaining at firm level	OECD labour force statistics	

List of abbreviations

CVT	Continuing vocational training
CVTS	Continuing vocational training survey
ECHP	European Community household panel
EU LFS	European Union labour force survey
IALS	International adult literacy survey
IVT	Initial vocational training
SES	Structure of earnings survey

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Modernising vocational education and training: the importance of information, advice and guidance over the life-cycle

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Abstract

To understand information, advice and guidance (IAG) in a lifelong learning perspective it is crucial to consider the reasons why people tend to spread learning over their life span. We propose that there are three main reasons for adult learning:

- (a) skills with a high level of depreciation might require regular updating;
- (b) economic or technological shocks in the labour market can make it necessary to reinvest in other skills;
- (c) people might want to repair previous inadequate choices in initial or post-initial education.

We show that a large share of participation in education among adults can be related to misguided choices in initial education. We find that approximately 20 % of young graduates regret their choice of educational field. Many go back to school later to repair their inadequate educational choice. In addition, most people who acquire a qualification at a later age would – looking back at their career – have preferred to have done it when they were young. There are substantial costs involved with learning at a later age if this is related to misguided choices: estimates show losses ranging from 3.2% of GDP in France to 11.5% in Italy. These losses pinpoint the need for early guidance. We give evidence that IAG can reduce misguided choices.

In sum, the findings show the very important role of IAG in lifelong learning as accurate IAG early in life reduces the amount of lifelong learning.

Once at work, people learn mainly by doing: 94 % of the time spent on learning is by performing tasks on the job. Learning at the workplace is highly integrated with actual work practice, and requirements thus become more specific. Consequently, learning depends on the ability of people to identify learning opportunities that occur in their daily work practice. In addition, regarding training courses, about 17 % of respondents regret the topic of training and 50 % indicate that in retrospect they would have preferred to participate in these courses earlier. This suggests that people frequently realise rather late that a certain course might be very useful to them. The Eurobarometer 59.0 (January-February 2003) shows that many people feel that they need good quality information and tailored advice to take up studies or training again. We provide evidence that mentoring or other IAG increase the adequacy of the choice of training or working tasks and are a useful instrument to invest in timely training.

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Introduction

The aim of this research is to provide a framework for thinking about the effect of information, advice and guidance (IAG) on the efficiency of vocational education and training (VET) in a lifelong learning perspective, to overview the literature in this field and to provide empirical information for the US and European countries, with a special focus on the Netherlands.

To understand IAG in a lifelong learning perspective it is crucial to take into account the reasons why people tend to spread learning over their life span. Information plays an important role in the timing of participation in training and education, so policies that change the availability of IAG might also affect when people choose to participate in education and training. Section 1 provides a theoretical framework for thinking about the relationship between IAG and lifelong learning. The point of departure of the theoretical framework is that hypothetically there are optimal investments in human capital and that there is a hypothetical optimal timing of these investments (Ben-Porath, 1967). But especially at young ages, people are not able to fully grasp the costs and benefits of participation in education and training, not only due to uncertainty with respect to labour-market development but also because of uncertainty with respect to individual capabilities and preferences. Uncertainty increases the probability of an *ex post* 'wrong' or sub-optimal decision. This will lower the efficiency or productivity of the acquired human capital and will make some people reinvest in education or training to repair earlier investments. Further, empirical evidence has shown that people tend to choose more general types of education and training to avoid these misinvestments. Improved IAG could, therefore, stimulate participation in VET. There is also evidence that less effort is put in learning

due to the uncertainty of the returns (see also Gillie and Isenhour, 2003).

We will argue in Section 1 that there are three main reasons for adult learning:

- (a) skills with a high level of depreciation might require regular updating⁽¹⁾. This might especially be important if these skills are complements to more general or academic skills which have a lower level of depreciation. To maintain the value of these general or academic skills, investments in continued training for the specific skills can be valuable;
- (b) economic or technological shocks in the labour market can make it necessary to reinvest in other skills;
- (c) people might want to repair previous inadequate choices in initial or post initial education.

The remainder of the report consists of three parts. In Section 2 we will overview the effect of IAG on initial education and training choices. Section 3 discusses IAG and continuing learning. Section 4 concludes and discusses implication for research, policy, and practice.

Section 2.1 gives a brief overview of the literature on IAG.

In Section 2.2, we introduce a measure for the quality of the educational choice, which we included in several surveys for the Netherlands⁽²⁾. Often measures concerned with the quality of the educational choice look at the knowledge students have of their future occupations. We instead measure the quality of the choices with respect to education and training in retrospect. The idea of our measure is that people have to make choices regarding training and education at a point in time when they are potentially not fully aware of the future consequences. Once the training or education

(1) These skills are often referred to as specific skills.

(2) These surveys include large scale surveys among Dutch high school and college graduates 1.5 years after graduation for 1991-2005, a survey on a representative sample of the Dutch population in 2005 and a survey on European college graduates three years after graduation in 1998.

is finished this image will become clearer. We, therefore, ask people whether they in retrospect would choose the same education or training again. This approach offers a measure for the adequacy of the choice in education and training. We find that approximately 20 % of the young graduates regret their choice of educational field. In the Netherlands, in vocational education these percentages are higher than among graduates from universities. Further, this percentage increases when people acquire more experience.

In accordance with the idea outlined in Section 1, we find that many of the people who regret their choice go back to school later to repair their inadequate educational choice. Section 2.3 shows that there are significant costs involved with regretting the educational choice and with learning at a later age. Combined with the findings in the earlier sections, these costs pinpoint the need for early guidance.

In Section 2.4 we analyse the adequacy of the timing of education by asking people retrospectively when they think their education would have been most appropriate. It turns out that most people who acquire a qualification at a later age would – looking back at their career – have preferred to have done it when they were young. This suggests that a large share of participation in education among adults can be related to misguided choices in initial education.

In Section 2.5 we overview the literature about the effects of IAG and show that IAG has a beneficial impact on choices regarding fields of study at college, and that it may prevent students from dropping out of school. Section 2.6 concludes.

In Section 3.1 we look at the effects of IAG for learning at school and for learning at the

workplace. There is less research on the effects of IAG for adults, but as we will show later, among others Ohsako (2000), Niles et al. (1998), and Robitschek (1997) indicate that adults can benefit from guidance as well. Once at work, people learn mainly by doing. A rough estimate (Borghans et al., 2006) indicates that 94 % of the time spent on learning is by performing tasks on the job. Until the age of 40 training is still a reasonable part of the learning process, but when workers are older than 40 most of what they learn is on-the-job learning. Learning in the workplace is highly integrated with actual work practice, and requirements thus become more specific. Consequently, learning depends on the ability of people to identify learning opportunities that occur in their daily work practice. There is evidence (e.g. Siann et al., 1998; Buckham, 1998) that it is very hard for people to make adequate learning decisions and to understand how the learning process can be organised. IAG could, therefore, also help people to identify and gain more from the learning opportunities at work. Evidence from the Eurobarometer 59.0 (January-February 2003) shows that indeed from 40 years on people indicate more frequently that good quality information and tailored advice are needed to take up studies or training again (see also Cedefop, Chisholm, 2004).

In Section 3.2 we show that for training courses about 50 % of people indicated that in retrospect they would have preferred to participate in these courses earlier. This suggests that people frequently realise rather late that a certain course might be very useful for them. IAG might, therefore, be a useful instrument to invest in training timely. Section 3.3 concludes.

Section 4 gives the overall conclusions and discusses implication for research and policy.

1. Lifelong learning and IAG

Traditionally, career guidance literature is focused mainly at the educational and vocational choice of young people. This is because for most people the main investments in education take place until their early 1920s, and vocational specialisation in the form of working or training generally starts at the end of full-time education. Career guidance research's main concern is, therefore, whether the development of young people and their vocational choice keeps pace with the educational career.

In recent years the awareness that a well-educated and trained workforce is crucial for society has been growing (among others OECD, 2003). Related to this, many stress that learning is not exclusively related to initial education, but that people have to improve and maintain their knowledge and skills throughout their career (e.g. OECD, 2003; Onderwijsraad, 2003; Groot and Oosterbeek, 1994; Groot and Maassen van den Brink, 1997; Dorhout et al., 2002). VET plays an important role in both initial education and training during the career. Since investments in human capital are very important for the knowledge-based economy, potential improvements in the efficiency of the system have to be considered carefully.

A straightforward conclusion is that as learning continues over the life span, so should also IAG. Important issues are, therefore, whether learning at later ages has the same character as learning when people are young, and whether IAG has to play the same role for adults as it does for young people.

1.1. A new framework for thinking about the benefits of IAG in lifelong learning ⁽³⁾

To address these issues, one needs to consider the reasons for adults to continue learning. Issues related to IAG are related to the reasons why people continue learning. In this section we, therefore, provide a theoretical framework for adult learning that can shed light on the role of IAG in a lifelong learning perspective.

Before we continue, a note on terminology is necessary. Throughout the report we will use the general term 'learning.' Our framework is relevant for all types of learning no matter how learning is organised (formal, informal and non-formal) and whether learning leads to certifications. We distinguish between 'education', 'training' and 'learning-by-doing.' Education is defined as learning in high schools, (vocational or professional) colleges and universities. Training is defined as learning by taking courses in connection to the work someone does. The main difference between education and training is that education usually takes several years to complete, while training takes less long time to complete and takes place during active life. Learning-by-doing is defined as learning by performing tasks at the job.

1.1.1. The benefits of lifelong learning: increasing the skill level of the population

The OECD recently explored the topic of lifelong learning, asking 'why is adult learning important?' Their answer is that 'there are several reasons why, in recent years, adult learning has become an important item on the policy agenda. Education and training contribute

(3) This section is based on Borghans and Golsteyn (2006c).

to the human capital of individuals and make them more efficient workers as well as better-informed citizens in a knowledge society. [...] In the economic domain there are possible benefits of increased employability, greater productivity and improved-quality employment. In the social domain, one can include individual well-being and increased social returns such as better health, lower incidence of crime, etc. There are as well the political benefits of improved civic participation and a strengthening of the foundations of democracy.' (OECD, 2003, p. 26-27). The report's drift is that the level of education is too low in many countries to meet the requirements that are put upon individuals in the labour market as well as in other spheres of life. According to the OECD enormous efforts will have to be made to increase the education level. The only way to realise this in the short run is to educate not only the young but also adults. Borghans and Golsteyn (2006c) note, however, that the advantages of education and training mentioned in the report are in fact advantages of education in general and not advantages of learning at a later age. A major disadvantage of learning at a later age, as mentioned, e.g. by Blöndal et al. (2001), is that opportunity costs of learning rise with age. This leaves the question why it would be beneficial to continue learning after initial education or to postpone learning from a young age to a later age. We turn to this question in the section below.

Many authors have found benefits of learning after the initial education. Cedefop, Descy and Tessaring (2005) give an extensive overview of the literature. One of the authors focusing on the benefits of learning at a later age is Jenkins (2004), who finds a strong association between adult learning and the probability that women who were out of work in 1991 returned to work between 1991 and 2001 after controlling for a range of family and economic circumstances. Stenberg (2006) finds in a recent paper that one year of adult education leads to a growth

in annual earnings of approximately 10 %. Feinstein et al. (2004) find that training has a positive effect on wage growth. However, they also find that firms cherry-pick workers. If those who did not follow training had followed training, they would not have gained from it. Schöne (2004) asks why the return to training is so high. He finds that training ⁽⁴⁾ increases wages by 5 %: similar to one year of education. However, unobserved heterogeneity in wage levels is the most important contributor to the excessive estimate of training returns. Trainees seem to have some favourable unobserved characteristics correlated with wages. After controlling for this bias, the returns to training fall considerably but remain significant and equal to approximately 1 % which still is high given the short duration of the training. There is substantial other evidence that some workers are offered more opportunities for investment in training than others. Groot and Maassen van den Brink (2003) overview the literature to find that more educated workers, younger workers and male workers receive more training.

1.1.2. The benefits of lifelong learning: optimal life-cycle skill formation

In economic literature, the seminal work by Ben-Porath (1967) shows that the optimal path of human capital accumulation contains three phases: full-time education at a young age, part-time education or training after a certain point in time and no investment when close to retirement. Many studies have analysed the optimal path of learning and extended the model by introducing for instance leisure (Heckman, 1976) or uncertainty (Williams, 1979). In a series of recent papers, Heckman (Cunha et al., 2005) finds that:

- (a) skill attainment at one stage of the life cycle raises skill attainment at later stages of the life cycle (self-productivity) ⁽⁵⁾;
- (b) skill begets skill through a multiplier process and hence early investments facilitates

(4) 'Training' refers to a wide variety of types of training, measured by the question 'have you, with this firm, received any formal education in the form of training during the last 12 months?'.
 (5) This is also known as the 'Mathew effect'. Cedefop, Descy and Tessaring (2001) also acknowledge that an initial stage needs to equip young people with foundation skills enabling them to become lifelong learners.

the productivity of later investments (complementarity) ⁽⁶⁾;

- (c) early investments are not productive if they are not followed up by later investments.

The usual interpretation of the model (e.g. Southwick and Zions, 1974) is that people continue to invest in learning to combat the depreciation of their skills. In contrast with this interpretation, Mincer (1997) and Borghans and Golsteyn (2006c) show that the driving force in Ben-Porath's model, why people spread their investments in human capital, is that – within one period – learning has decreasing returns to scale. So the crucial assumption in the Ben-Porath model is that people learn more effectively when they spend fewer hours on learning per week. The reasoning behind this argument is that an individual has limited psychic and intellectual capacity (Mincer, 1997). Although this might be true, we do not think that learning efficiency is the main argument for lifelong learning.

1.1.3. Three reasons for lifelong learning

Borghans and Golsteyn (2006c) show that in the Ben-Porath framework there could be three reasons why it could be optimal for people to postpone learning until adulthood. The first is that there are specific skills, which are complementary to a person's general educational development, which depreciate much faster than the general skills and, therefore, have to be renewed. One could think of knowledge about new legislation, software programs, etc. If the depreciation rate of this specific knowledge or its relative importance have increased, people will – when investing optimally – spend more time on learning these skills while working to maintain their specific skills. Borghans and Van Loo (2002) identify learning and depreciation. They show that for most skills, learning ⁽⁷⁾ stops after a certain age, only field specific and computer skills continue to be acquired at later ages suggesting that learning these skills is interrelated with the actual production

process. Field specific skills are the only skills acquired significantly more by workers who just entered the labour market than after five years, hence these skills may be much more efficiently acquired at work than at school.

The second reason for investing in human capital at a later age could be an unexpected change in the circumstances. One obvious candidate for this is a shift in the wage structure. An increase in the price of human capital will not affect investment decisions, since this will increase the value and the costs of further investments simultaneously. However, when the value of high levels of human capital increases substantially, people who took less education when they were young, might decide to go back to school. There is evidence that the increase in adult participation in education in the US is indeed related to the increase in wage inequality. In other countries, where the wage inequality between skill levels has been much more stable, adults' participation in education was also more stable over time. The other candidate is a drop in the individual discount rate. At a later age, people might get rid of binding credit constraints, or might become aware of the importance of education for their later career. In such cases it can be explained that people invest in general education – in contrast with specific skills – later during the life-cycle.

A third reason why people might go back to school is individual uncertainty ⁽⁸⁾. People may generally not be able to fully grasp the costs and benefits of participation in education and training. This is not only due to labour-market developments or changes in discount rates but may even be due to uncertainty with respect to individual capabilities and preferences. There is ample evidence that for young people it is very difficult to adequately project themselves working in a specific occupation later in their life. Knowledge about the occupation is limited ⁽⁹⁾, but it is also very difficult for young people to understand how they will value aspects of their

(6) Rosen (1976), Jenkins et al. (2001) and Brunello (2001) also find evidence for complementarity.

(7) In their research, 'Learning' entails all types of learning, such as learning at college, from colleagues, or at home.

(8) This applies mostly to going back to education. It applies less to training.

(9) This applies less to training because people are often already working. However, Borghans and Golsteyn (2006d) show that also workers have problems understanding which skills they will need to invest in.

job when they are older, for example Borghans et al. (2003) find that many young girls who choose to become a flight attendant, do not realise *ex ante* how much they will value being with their family once they grow older and have children. As a consequence, the level of regret of choosing their educational discipline among flight attendants is very high. Uncertainty will increase the probability of an *ex post* inadequate educational choice. Later in their career these people might realise that they made a choice that did not fit to their preferences and capabilities.

In sum, we argue that in the discussion about lifelong learning a distinction has to be made between maintenance and reparation. Increases in the level of time spent on maintenance can reflect optimal reactions to new circumstances, but will mainly relate to specific knowledge characterised by high levels of depreciation. Reparation only reflects erroneous decisions in the past. People may regret their choice of educational discipline for instance when they find out after graduation that the position of their qualification on the labour market deteriorated and they are going to earn a lower wage than the wage they expected. A decrease of the wages of a specific qualification will only be a temporary reason to invest in education since it only applies to those who have already chosen an education. Once young people know the new wage structure, they may adjust *ex ante* their initial investment decisions, making later corrections abundant. If reparation is also characterised by a lack of understanding how important education and vocational choices can be for the career, or to young people facing credit constraints which prevent them from entering education, the phenomenon can be more persistent. The best policies to combat these underinvestments will be to help people choose their educational field by providing IAG and to relieve credit constraints. When reparation is the reason for adult learning, both policies – when successful – will induce a shift from adult learning to investments in education at a younger age.

1.2. The growing importance of IAG

Improvements in IAG throughout the whole career is regarded by many as a way to improve the efficiency of the VET system. Following the ideas in the section above, there are three reasons why adequate IAG has become of growing importance:

- (a) since in VET education and training are closely linked with specific occupations, choices regarding participation in education and training are associated with a higher risk. People can make ‘misinvestments’ because economic conditions can change and alter the value of specific skills in the labour market. Research (e.g. Jovanovic, 1979) has shown however that a large fraction of such misinvestments is related to a mismatch between an occupation and people’s personal capabilities and preferences. Somebody chooses to be schooled for a certain profession because he/she expects that this job will suit him, but experiences later that this choice was based on a misconception. Borghans and Golsteyn (2006a) show that 20 to 40 % of all Dutch workers who left education ⁽¹⁰⁾ indicate they would have chosen another field of study if they could choose again. Many of them actually decide to go back to education. In this report we will show estimates of the costs of these reinvestments for several European countries. The estimates vary between 3.2 % (France) and 11.5 % (Italy) of the total labour costs in these countries. Throughout this report, we will show that IAG plays an important role in improving choices with respect to education and training;
- (b) with the growing importance of lifelong learning, similar participation decisions regarding education and training have to be made throughout the whole career. There are several reasons why these later investments are more complex for individuals

(10) The study does not include students from VET.

to be made. Borghans and Golsteyn (2006d) show for instance that many people do not know which courses to take to reduce skill deficiencies at work. Once people have left initial education ⁽¹¹⁾, most of their time is spent on other activities than learning, so in this environment it will be less obvious to think about learning opportunities. Schools ⁽¹²⁾ offer uniform and consistent curricula, but training for further development and maintenance requires that people select specific courses, based on their capabilities and frailties, therefore requiring much more self-reflection. Finally, since learning by doing contributes substantially to the acquisition of skills of people who are working, the work environment and possibilities for learning at work have to be taken into account in training decisions;

(c) finally, the very nature of lifelong learning also implies that people have to decide about the optimal timing of training participation. Recent survey results show that apart from what kind of training to participate in, people also face serious difficulties in deciding when to take part in these courses. Many respondents indicate that looking back at previous training participation, they would prefer a different timing of the same course (Borghans and Golsteyn, 2005). IAG is an important policy instrument to assist people in making these difficult choices and, therefore, to increase the efficiency of the VET system. Recent research has shown the benefits of such policies (e.g. Bimrose et al., 2004; Bosley et al., 2002; Killeen et al., 1994; Mayston, 2002).

(11) The study does not include students from VET.

(12) And plausibly also apprenticeships.

2. IAG and initial education and training choices

2.1. Vocational choice theory and research and its links to IAG

Herr (2001) gives an interesting overview of the historical development of the research on career guidance. He defines career development as 'both the constellation of psychological, sociological, educational, physical, economic and chance factors that combine to shape individual career behaviour over the life span (Sears, 1982) and the interventions or practices that are used to enhance a person's career development or to enable that persons make more effective career decisions (Spokane, 1991, p. 22)' (Herr, 2001, p. 196). Herr describes that the need for vocational guidance emerged in the US as a reaction to:

- (a) increased urbanisation and occupational diversity due to the industrialisation in the late 19th, early 20th century;
- (b) the large immigration into the US;
- (c) the notion that workers should have a right to determine their own destiny instead of being the chattels of employers.

An influential related stimulus was the emancipation of women on the labour market.

Parsons (1909) in his influential book *Choosing a vocation*, laid the foundations which guided the development of vocational guidance for at least the first 50 years of the 20th century. He argued that a three-step paradigm could serve as a framework for the counsellor:

- (a) a clear understanding of yourself, aptitudes, abilities, interests, resources, limitations, and other qualities;
- (b) a knowledge of the requirements and conditions of success, advantages and disadvantages, compensation, opportunities, and prospects in different lines of work;

- (c) true reasoning on the relations of these two groups of facts (Parsons, 1909, p. 5; Herr, 2001, p. 201).

This quote shows that the basis of career guidance is to enhance getting 'a clear understanding of yourself'. Compared to economic theory, it pays less attention to the demand for specific occupations in the labour market. In economic theory, a lot of evidence suggests that people are partly guided by wage considerations in their choice of educational field (among others Willis and Rosen, 1979; Robertson and Symons, 1990; Keane and Wolpin, 1997). There is also an important development in economics literature which focuses on expectations of wages. These theories can explain which people make better choices than others (Dominitz and Manski, 1994; Betts, 1996). For career guidance this implies that information about expected wages and job opportunities in specific occupations and industries can improve educational and vocational choices. There are several initiatives in the Member States to identify skill needs and to inform people about market opportunities ⁽¹³⁾. When making educational and vocational choice people have to combine self-knowledge and information about the contents of a job with labour-market information. Career guidance approaches to help people balancing these aspects are still underdeveloped.

In their review of the literature, Levine (1976) and Gottfredson (1981) explain how vocational choice became to be seen as a development process, which parallels with the development of a self-concept. In the second half of the 20th century, among others Super (1957, 1990) influenced the nature of vocational guidance. His life-span approach focused on the development of the self-concept, where the individual translates self-concepts into occupational preferences, moves into occupations and actualises the self-

(13) These include, for example, European Employment Observatory networks, Network on early identification of skills needs in the UK, and Cedefop Skillsnet. See for a more extensive overview http://www.trainingvillage.gr/etv/Projects_Networks/Skillsnet/websites.asp.

concept⁽¹⁴⁾. Vocational choice would be the result of a process starting with individual's early fantasy choices, followed by tentative choices and then by realistic choices. The individual learns from experiences, a process that is largely irreversible. They distinguish five stages related to specific ages. In each stage people develop specific skills:

- (a) growth stage: 4-11 fantasy, 11-12 interests, 13-14 capacity;
- (b) exploration stage: 15-17 tentative, 18-21 transition, 22-24 trial;
- (c) establishment stage: 25-30 trial, 31-44 stabilisation;
- (d) maintenance stage: 45-64;
- (e) decline stage: 65-70 deceleration, 71+ retirement.

Around age 10 the role of gender is identified, around age 12 social class identity is included, after age 14 the unique self develops with personal preferences and estimations. More recently, Helwig (2001) used a 10-year longitudinal survey to confirm Gottfredson's theory that the occupational aspirations of children develop in five stages⁽¹⁵⁾.

Holland (1987) analyses vocational choice as a matching process. In his trait-factor theory, individuals compare their personality with the environment and select the most suitable occupation. The vocational choice itself is organised in the following steps: recognising the need for a decision, searching for information, developing alternatives, making the decision, implementing, and overcoming post-decision making problems.

The practice of IAG follows the developments in the literature on career counselling closely. And vice versa, experiments with the practice of IAG also form the basis of many empirical papers, as we will discuss in greater detail below. Importantly, many assessment instruments were developed to empirically test the theories: for

example, the self-directed search, the vocational preference inventory, adult career concern inventory, career maturity inventory, the values inventory, the career beliefs inventory. In the last decades of the 20th century these assessment instruments were used by, among others, Campbell et al. (1983), Herr (1997), Holland et al. (1981), Hoyt (1980), Oliver and Spokane (1988), and Spokane and Oliver (1983) to demonstrate the effectiveness of tools of career counsellors to help their clients make more adequate career choices.

2.2. Regretting initial education and training choices⁽¹⁶⁾

To be able to determine the empirical relevance of the concept of reparation of human capital investments, we need a measure for the quality of choices in education and training. In principle, people could be interviewed about the image they have of aspects of their future job and this image could be compared to actual aspects of the jobs. However, for two reasons such an approach is undesirable. First, in this case the researcher would determine which aspects are crucial for comparing image and reality. A person can have an inadequate image of the reward in a certain profession but if the reward does not interest him/her, it does not matter in the evaluation of the educational choice either. There can be other aspects (e.g. the amount of leisure or commuting time, the provision of child care facilities by the employer, etc.), which the researcher does not think of, which are crucial for the individual to decide to follow a certain education or training. Second, it is not likely that many people will ever get a very clear image of their future profession (in part also because these professions are changing constantly)⁽¹⁷⁾.

(14) Other seminal contributions have been made by Ginzberg et al. (1951), Roe (1956), Holland (1966), Krumboltz (1979).

(15) In line with the idea that children develop in certain stages, a series of recent papers written by Heckman (e.g. Cunha et al., 2005) discuss that both cognitive abilities (like IQ) and non-cognitive abilities (like time preference, self control, temperament, etc.) can be developed at young ages. However, some stages in life are more productive in producing certain skills. Heckman calls these stages sensitive periods for these skills. If one stage alone is effective in producing a skill, it is called a critical period.

(16) This section is based on Borghans and Golsteyn (2005).

(17) Workers who have to decide upon which training to follow know better what their profession is like, but Borghans and Golsteyn (2006d) show that many workers experience difficulties choosing the right courses.

It is sufficient that one has enough information to make a responsible choice ⁽¹⁸⁾.

The idea underlying our measure is that a person makes an adequate choice if he/she makes the same decision based on the imperfect information, as he/she would make if he/she knew all the consequences of his decision. Assuming that people have a clear understanding of the consequences of their choice 1.5 years after they finish education and training, we ask them ‘would you, in retrospect, choose the same education/training as the one you followed again?’. Those who answer they would – at the same or another institute – apparently made the right choice. If the respondents indicate they would have wanted to study another discipline (or no education or training at all), we consider they regret their educational choice, thus indicating a low adequacy of educational choice ⁽¹⁹⁾.

Of course, at the individual level there might be differences in the way people answer this questions and unpredictable changes in circumstances and specific personal circumstances may affect the *ex post* evaluation of the study chosen. Even people who are not

well-informed might be very satisfied with their choice afterwards. Further, people will not experience all facets of their job and especially will not experience alternative professions they did not choose. For that reason the knowledge of respondents to the retrospective question is not perfect either. Still knowledge of the pros and cons of the choice made will be much better than when the initial educational choice was made. Therefore, we consider that the percentage of people who regret their choice *ex post* is a good proxy of the adequacy of the choice in a certain group.

We included this measure in several surveys. These surveys include large scale surveys among Dutch high school and college graduates 1.5 years after graduation for 1991-2005 (Research Centre for education and the labour market graduate survey), a survey on a representative sample of the Dutch population in 2005 (*Enquête levenslang leren*) and a survey on European college graduates three years after graduation in 1998 (Cheers, Careers after higher education: a European research study). Table 1 gives an overview of these datasets.

Table 1: **Overview of datasets**

Survey	Date	Target Group	Timing approach
SIS (<i>Schoolverlaters Informatie Systeem</i>)	1991-2005	Dutch graduates from VMBO, HAVO, VWO, MBO, HBO, WO ⁽¹⁾	1.5 years after graduation
Cheers (Careers after higher education: a European research study)	1998	European college graduates	3 years after graduation
<i>Enquête levenslang leren</i>	2005	Representative sample of Dutch population	All ages

⁽¹⁾ See the Annex for an overview of the Dutch educational system. See also list of abbreviations.

(18) Symons (1997) has a rather pessimistic view on the capabilities of the young to choose their education. He poses the following provocative question: ‘would you let a 16 year old tell you what to do with the rest of your life? The answer would be a very clear, obvious and emphatic ‘no’. In reality however, this is what most of us do in making long-term decisions about careers in high school.’

(19) Students may regret their education for the wrong reasons as they may have very little information about the alternative disciplines and related occupations.

Table 2 shows for a Dutch sample of graduates that on average 21 % of the respondents regret their educational choice 18 months after entering the labour market ⁽²⁰⁾. It is of course important to investigate whether the answers of the respondents really can be interpreted as an indication of an inadequate educational choice and whether this indicator does not merely reflect satisfaction with the transition from school to work. There are many indicators that the variable picks up the right things. Correlation with questions about job satisfaction and the transition from school to work is very low and it is not especially the group of unemployed or people who did not find an appropriate job who say that they regret their choice. Of course low wages and high unemployment might cause people to regret their choice, but analyses show that mainly the labour-market conditions for a field of study in general rather than the individual outcomes are related to regret. Further, the correlation between regret and unemployment levels and average wages is not very strong. It is mainly the change in these circumstances that leads to regret. This implies that when students know that employment perspectives of a certain study are not very good, they do not regret their choice afterwards. When, however, good perspectives deteriorate while they are enrolled, students do regret this choice, which they made lacking adequate information about future labour-market perspectives. This implies that our measure of regret is more related to the adequacy of the educational choice than with

the satisfaction with the transition from school to work.

Men and women regret their choice approximately equally often. The average regret decreases significantly if the level of education increases. Graduates from vocational colleges in the Netherlands regret their choice much more than graduates from higher vocational education and university. There are several potential reasons for this difference. First, students who attend vocational colleges made education and vocational choices at an earlier age than students at higher vocational education and university. Readiness for their choice might, therefore, be less developed. Second, tracks in vocational education tend to be more specialised than tracks in higher education. Specialisation also increases the probability of an error. There is evidence that specialisation is indeed associated with more regret, but also that students who face more difficulties to make an adequate choice tend to choose courses that are less specialised. Third, Borghans and Golsteyn (2006b) measured the ability to imagine the future, and find that this measure is correlated with cognitive ability. Also within educational levels there is a correlation between regret of a choice and cognitive abilities of the respondent.

The likelihood of regret is strongly related with the doubt students had at the point in time when they made their choice. Less than 10 % of the students ⁽²¹⁾ indicating they never doubted their choice report regret after graduation.

Table 2: **Regret and the educational level**

	%
	Regret
Vocational college	27.9
Professional college	20.1
University	19.4
Total	20.7

Source: SIS (ROA, 2004) Borghans and Golsteyn (2005)

(20) The sample includes approximately 6 700 respondents. All graduates in the sample are included to compute this average.

(21) Here, we refer to students from all educational levels, and from both vocational and general educations.

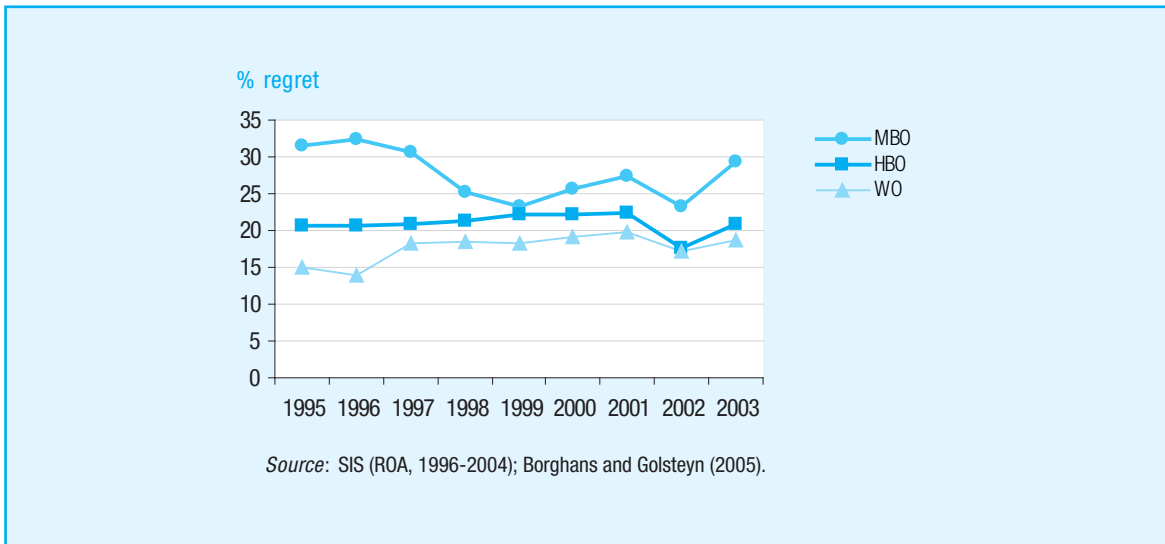
About 20 % of the students who made their educational choice half a year before the start of the education regret their choice later on. While approximately 30 % of those who chose their education in the summer vacation before the start of the education, regret their choice. Also, regret is clearly related with the degree of doubt the students indicated to have. Of those students indicating they doubted their choice strongly, 49.7 % regret their choice (Borghans and Golsteyn, 2005).

Figure 1 shows the development of regret per educational level for the period 1995-2003. At the vocational college level (MBO ⁽²²⁾) the percentage of graduates with regret has decreased during this period. Since regret at the vocational college level was high when the Dutch labour market was in a recession and decreased during the upswing, there seems to

be a cyclical pattern. This might indicate that for these graduates, regret depends on being able to find adequate employment. At professional college (HBO) and University (WO), there is a gradual increase in the percentage of graduates regretting their educational choice.

The results discussed so far are obtained from a sample of graduates 18 months after graduation. An interesting question is whether graduates at the point in time when they were interviewed already have a good image of their occupation. If some consequences of their choice still have to appear, the average level of regret could increase even further. However, one can also imagine that people put the role of the specific education they followed into perspective after they worked for a longer period. Figure 2 gives – based on a representative sample of the Dutch population ⁽²³⁾ – an overview of the

Figure 1: Percentage of regret by educational level, graduation year 1995-2003

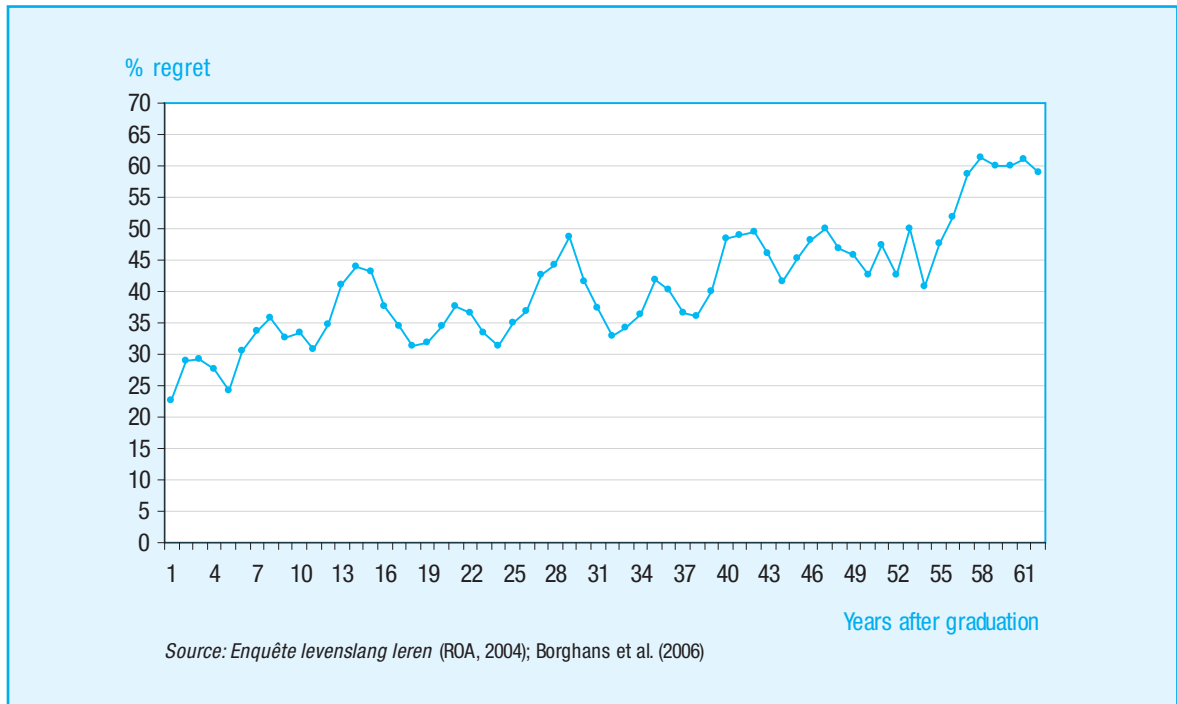


(22) See the Annex for an overview of the Dutch educational system and the list of abbreviations.

(23) *Enquête levenslang leren* (ROA, 2005).

(24) Based on Borghans et al. (2006). Due to the limited size of the sample (2 400) we have taken a moving average of three years.

Figure 2: **Regret of educational choice and years since graduation from initial education (vocational college or college education)**



total Dutch population's regret⁽²⁴⁾. It appears that regret increases with years of experience. This indicates that 18 months after graduation, people cannot see all the consequences of their decision yet and that it takes a long time before they accomplish this. Some 10 years after graduation, the average level of regret stabilises around 30-40 %. Note that in this figure young and old cohort are compared. Older people, who graduated more than 40 years ago, tend to regret more their initial educational or vocational choice.

2.3. The cost of regret

Borghans and Golsteyn (2006a) show that regretting an educational choice is an important incentive to change education⁽²⁵⁾. Some

students stop their education to switch to another, while others realise the consequences of their choice after graduation. Some of students who regret their choice after graduation start a second education, which is more in line with their interests and capacities. Others put up with their decision and continue in the direction they have chosen. Probably some of them try to search for jobs which can turn their careers in a different direction. As far as people actually start a new education because they are not satisfied with the current education in retrospect, wrong educational choices are directly coupled to costs. Cunha et al. (2005) show also that remediation of inadequate early investments is difficult and very costly because skill attainment at one stage of the life cycle raises skill attainment at later stages of the life cycle (self-productivity) and skill begets skill through a multiplier process and hence early

(25) Freiden and Staaf (1973) find also that many students switched between educational fields.

investments facilitates the productivity of later investments (complementarity).

Apart from erroneous educational choices, poor information about the future prospects of a chosen field of study also reduces the incentive to put effort in the study. Borghans and Golsteyn (2006b) show that students who have a less clear picture about their future study fewer hours per week and stay longer in school to postpone the transition from school to work. An important question that has not yet been studied is whether improved IAG indeed increases efforts of students while studying.

Learning at a later age may play an important role in adjusting educational choices made earlier in life. The possibility to change educational field during a later career phase, makes the labour market more flexible. Individuals can adjust their educational choice if they notice that the education they chose when they were young does not fit them or gives them for instance a lower wage than they expected. This implies that there are not only possibilities to prevent

discrepancies between demand and supply by helping young children to make the right educational choice but also to diminish them by retraining adults.

These adjustments are not without costs, however⁽²⁶⁾. If educations at a higher age are indeed followed to correct earlier choices, it would be more efficient to have followed this education as soon as possible. As a consequence of the adjustment, the total time in education will increase and the graduate will become available for the labour market later or will experience some breaks in the work career.

With an average working life of 40 years, a one-year delay in education can be seen as a 2.5 % capacity loss. Based on the international survey Cheers among graduates three years after graduation (approximately 3 500 graduates per country) a conservative estimate of capacity losses can be calculated for different countries. The costs are highest in Italy, Austria and Finland while the Czech Republic, France, Japan and Sweden have relatively low capacity losses⁽²⁷⁾.

Table 3: **Costs of learning delay by countries**

Countries		Length education	Second education	Started late or delay during education	Total capacity loss as percentage of GDP
AT	Austria	7.6	1.1	1.2	9.9
CZ	Czech-Republic	2.3	0.3	0.5	3.1
DE	Germany	3.3	2.3	1.1	6.9
ES	Spain	2.4	1.3	0.8	4.5
FI	Finland	5.4	0.2	1.9	7.5
FR	France	1.1	1.3	0.6	3.0
IT	Italy	8.0	2.6	0.9	11.5
JP	Japan	0.4	0.0	0.0	0.4
NL	Netherlands	1.5	2.7	1.1	5.3
NO	Norway	2.4	0.7	1.4	4.5
SE	Sweden	2.4	0.4	0.4	3.2
UK	United Kingdom	0.2	2.6	1.1	3.9

Source: Cheers, 1999; Borghans and Golsteyn (2006a)

(26) Based on Borghans and Golsteyn (2003).

(27) For a description of the method followed to calculate the costs we refer to Borghans and Golsteyn (2006c).

The high capacity losses in Italy are due to the fact that students take too long time to graduate. In Germany, Italy, the Netherlands and the UK many students continue studying after they graduated from college education. This also reduces considerably the number of years they will work on average.

2.4. Timing of education

In a lifelong learning perspective not only the question whether people are able to select the right training courses and participate in learning that adequately enhances their skills, but also the question when to participate becomes important. In the survey among the Dutch population (*Enquête levenslang leren*, 2004), the question whether people in retrospect are satisfied with the period at which they followed the education is, therefore, included. We analyse the quality of the timing of the education by comparing answers of people in all age groups to the questions at which point in time they graduated and when they would have liked to have graduated in retrospect. From the data, we find that 28 % of the respondents rather would have graduated earlier, 37 % indicate that they would like to have graduated at the same time and 35 % indicate that they would like to have graduated later. Those who want to have graduated later appear to be mostly people who rather would have followed a higher education. Because higher educations take a longer time to finish, the endpoint of the education moves to a later point in time.

Many respondents who did not continue a higher education straight after high school indicate, however, they would like to have followed their education earlier. Figure 3 shows the relation between the actual age of graduation and the in retrospect preferred age of graduation. It appears from the figure that even people who graduated at a very high age indicate they would like to have graduated before their 30th birthday.

This confirms that the majority of the people who follow an education at a later age do this because they find out too late how useful the education is to them and not because they think

it is more useful to follow the education at a later age. This finding confirms that most people consider youth the most appropriate period to participate in education. Although a substantial number of people participate in education later in their career, they do not consider this timing as optimal. Apparently these are people who only recognised later what kind of education was most appropriate for them and decided to repair their earlier investment according to their new insights. More effective career guidance in their youth could have increased the probability of a more adequate educational choice at that time. Adult participation in education, therefore, reveals the need for vocational guidance among young people. Improvements in the educational choice when students are young could reduce the need for later repair and could thus lower the need for acquiring full qualifications later in life. This result applies no matter how education later in life is organised.

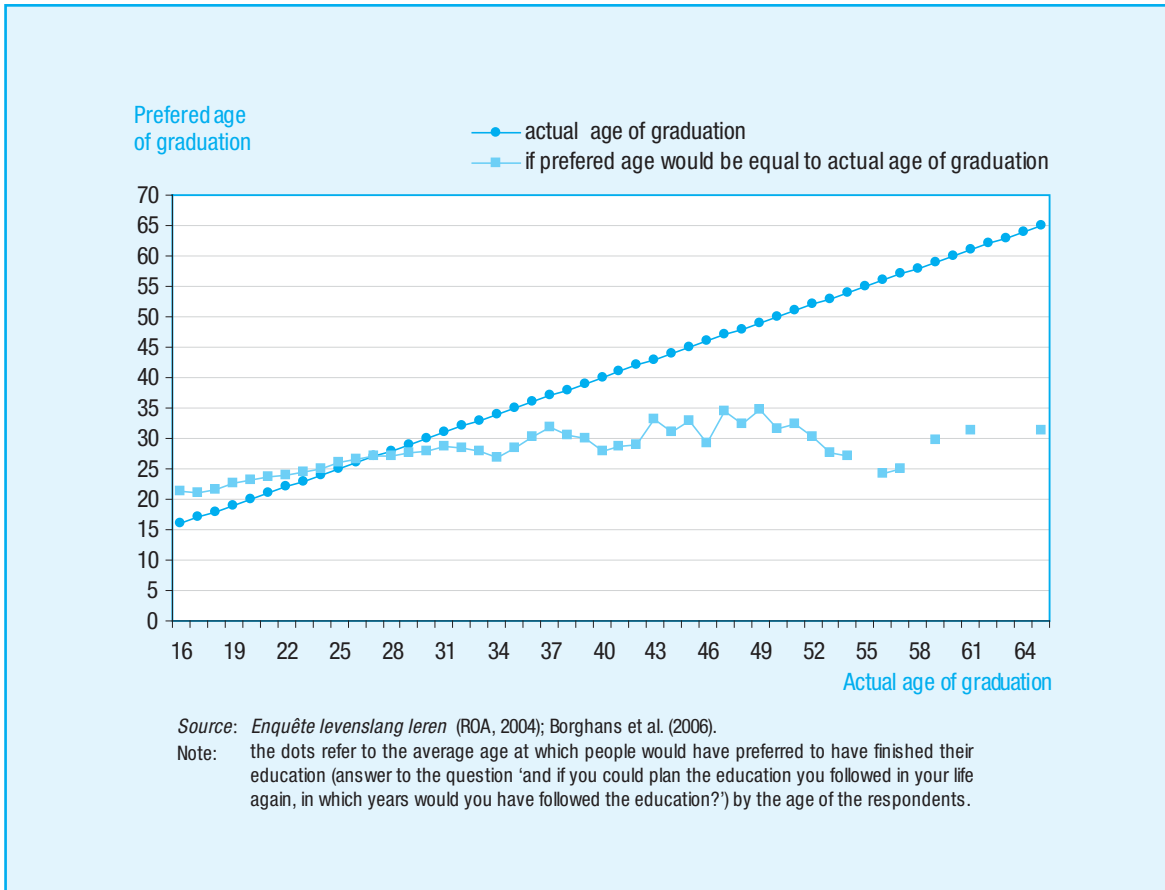
2.5. Can career guidance improve initial vocational choices?

Since it is apparently difficult for all students to imagine the consequences of their educational and vocational choices, a policy response could be to help them making their choices by delivering IAG. But do such interventions produce the expected effect on the choice process?

2.5.1. High school students

A lot of evidence indicates a need for offering career guidance to students. Using qualitative research, Siann et al. (1998) and Buckham (1998) show that respectively Chinese and British college students tend to be very insecure and to know merely stereotypical things about their future professions. Sheperd-Johnson (2000) shows that a sample of students from Long Island, New York, generally reveal a shallow understanding of how school relates to the world of work and show limited awareness of the skills and knowledge needed for success in the future. Young people seem to think the factor which

Figure 3: **Average preferred and actual age of graduation from vocational college or college education**



will lead to success is the possession of career-specific knowledge, which is partly contrary to modern labour-market demands.

In addition, counselling is highly demanded by students. Blanton and Larrabee (1999) report that 58 % of US students aged 18-25 believe high schools are not doing enough to help them plan their careers. Based on an overview of the literature, Gordon (1998) identifies heterogeneous subtypes of undecided students for which specific career counselling strategies can be developed. Based on the level of decidedness ⁽²⁸⁾ she defines seven groups of students and shows the different strategies for counsellors in each group. For instance, individuals with low goal

instability are more satisfied with computerised treatments, whereas students with high goal instability are more satisfied with interpersonally oriented approaches.

From a Japanese sample, Nishada (1992) indicates that few students know what their future occupation will precisely look like and pleas for a larger influence of schools to give more specific examples of occupations ⁽²⁹⁾. Davey (1993) finds for a sample of US high school students that nearly all of the respondents (93.4 %) have some dreams about their future occupation, but nearly half of the students did not expect to enter their most desired occupations. The main reason given for this was an expected

(28) Gordon (1998) uses this term to overview the literature because many researchers use similar terms to group their subtypes.

(29) This would require a close cooperation between schools and companies/workplaces.

lack of financial means to study. Borghans and Golsteyn (2006b) show from a Dutch sample that a very important aspect which determines the quality of the educational choice is the level to which students can imagine their future life. Less imagination induces students also to stay longer in school.

Psychologists typically use scales to measure the effect of interventions on the ability of subjects (students/workers, etc.) to form better pictures of their career. One widely known and internationally used scale is the career decision scale. It is a 16-item scale in which the individual indicates whether the characteristic is 'like him' or 'not like him' on a 4-point Likert response continuum. Higher scores on the scale indicate greater indecision⁽³⁰⁾. Using this instrument, for instance Betz and Klein Voyten (1997) find, using a US sample, that self-efficacy (i.e. the extent to which individuals think they can successfully make career decisions) and expectations about the usefulness of career exploration lead to greater certainty about careers. The latter scale scores how certain an individual is about his career. They find, as do for example Betz and Hackett (1986) for a US sample, that a lack of self-efficacy is an important predictor of career indecision. Post-Kammer and Smith (1985) draw a similar conclusion for different age-groups from a US sample. The counsellor may increase self-efficacy by giving information to the student about performance accomplishments, by helping students to enhance learning and manage anxiety, and by giving verbal encouragement. In addition, their study shows the importance of assessing and encouraging the students' beliefs that career exploratory behaviour will lead to useful career development outcomes.

Also, many experiments have been done to assess the effect of career guidance. Employing an experiment in which a counsellor gave eight 50-minute lessons in 2 weeks to a treatment group, Kraus and Hughey (1999) find that treated female high school juniors in the Midwest scored significantly higher on career decision making self-efficacy than women in the

control group, while no significance difference was found for men. Jurgens (2000) reports the effectiveness of two types of interventions on career certainty. One treatment consisted of a four-phase intervention: a two-hours decision-making workshop, a two-hours session on the Discover computer-system, a one-hour individual counselling session, and a two-hours professional forum in which the participants met with eight professionals to discuss occupations. A second treatment group only had the two-hour session on the computer-system and the individual counselling session. Both these treatments significantly increased career certainty. However, the four-phase treatment did not significantly outperform the two-phase treatment. Using an experiment on Taiwanese students, Peng and Herr (1999) find that career education courses have a positive impact on career decision-making. Wei-Cheng (1999) finds that computer based career guidance systems long lastingly increased vocational identity of students in the Midwest. Barnes and Herr (1998) find that individual counselling is a more powerful intervention than the Discover computer program.

Many other authors find that career-counselling at high school is effective in assisting high school children in the area of career development. Comparing results of various papers, Oliver and Spokane (1988) report that career intervention studies between 1950 and 1982 generally find a positive effect of career-counselling on career decision-making, understanding of careers and career-related adjustment. Interestingly, they find that guidance activities are most efficient before high school starts. Whinston et al. (1998) find for studies between 1983 and 1995 also positive, although smaller, overall effects of career intervention on career decision-making.

Hughey and Hughey (1999) argue that students should be taught already in high school how to cope with the changes which they will experience in their careers. Gillies et al. (1998) analyse the impact of a career education intervention in upper elementary school. For 10

(30) The reliability of the scale is measured by internal correlation of the scores on the items, Cronbach's alpha, which is very high in most studies and therefore shows solid reliability (e.g. Osipow, 1987). Maguire (2004) reports a recent discussion of measurement of the outcomes of career guidance.

weeks, grade 6 Australian children were helped to acquire a better understanding of self in relation to the world of work and the diversity of life roles in which individuals engage. They find that children improved their knowledge about jobs and the personal attributes required for job success.

2.5.2. Additional empirical evidence on the effects of career counselling from national studies

Improving the picture students have about the future prospects of education and training will not only improve the chances of a good choice, but will also increase motivation for study. Borghans and Golsteyn (2006b), using a Dutch sample, indeed find evidence that students who are better able to imagine the future, study more hours per week, have a lower probability to drop out and finish their study earlier.

Krumboltz and Worthington (1999) explain that workforce preparation programmes seek besides vocational development indirectly to address a wide variety of other social problems through workforce preparation efforts, for example drop out rates, juvenile delinquency, teenage parenthood, drug abuse, psychological well-being.

Savickas (1999) concludes from numerous studies that youth cope better with the school to work transition if in high school they develop awareness of the choices to be made and of the information and planning that bear on these choices. He discusses the result of several longitudinal studies which examine the relation between the career development of high school students and detailed information about their adaptability to the world of work. One of these studies is Super's career pattern study (Super, 1954; 1957), in which it is shown that about one-third of the respondents engaged in floundering and drifting (i.e. a random movement from one position that is not logical to the next) during most of the seven years after high school. At age 25, 80 % of the participants were stabilising, i.e. they had little doubts about their career path. Moreover, Savickas shows that to make a better career choice, important factors are the attitudinal qualities, i.e. the readiness of an individual to choose a career (e.g. positive

attitude towards planning, independence in making choices, involvement in the career development process) and information one has about the world of work and the principles and practices of career decision-making.

George et al. (1992) argue that counsellors can become key persons in combating the dropout problem. A conservative estimate shows that at least 11 % of the US dropouts possess the ability necessary to complete high school. The reasons why people drop out are complex (familial, personal, socioeconomic factors, educational achievement and school behaviour), yet the signs of students at risk can be evident as early as the third grade. The authors indicate which steps counsellors can take to prevent dropping out (early identification of potential dropouts, support programmes for the identified, encouragement of the identified to engage in social activities related to the school) and how they can help students who dropped out, for example encouragement to enter work study programmes.

Palladino-Schultheiss (2005) argues that career interventions during elementary school are imperative for preventing disadvantaged to drop out and to stimulate them to continue in school. Rojewski and Kim (2003) show, using the US national educational longitudinal sample (NELS), that levels of occupations children aspired to were firmly established by the time they were in grade eight.

At many high schools, some form of help is offered to increase the quality of the educational choice. In Table 4, Borghans and Golsteyn (2005) compare students who regret their educational choice and those who are satisfied with their choice, and the extent to which they made use of help during their choice of education.

They use the ROA graduate survey's 2005 supplement sample which contains information on 6 300 graduates both from high schools and all levels of college. In the survey, all respondents provide information about which high school they attended and which form of help they received at this high school.

When looking at individual differences between students (the left column in the table), it appears that students who talked with their parents or mentors about their options regretted

their choice less often. An obvious reason for this relationship, however, is that especially students who need advice will talk to their mentor. So possibly the correlation does not show that talking to a mentor makes a student better off, but shows that students who face more problems in choosing talk to mentors more frequently. The question, therefore, arises whether students who talked to mentors would have made a better choice if they had not talked to them. In other words, the real question is not whether students visiting a study counsellor make better choices but whether a larger supply of study counselling facilities would improve the quality of the choice.

This causality problem can be avoided by looking at the provision of help and support for career choice at the school level. Schools differ in the help they offer. In schools that offer more facilities, students are more likely to make use of such facilities. Therefore, the use of facilities by the respondent's fellow-students is analysed. This use of help does not indicate the respondent's capability to make an adequate choice, but does give information about the policy of the school with respect to educational choice guidance⁽³¹⁾.

It could also be that differences in use of guidance services are correlated with the socioeconomic background of the students. Therefore, with the second estimation technique we control for the average educational level of the parents of fellow-students per school.

Table 4 shows the results. The consequence of comparing differences between schools is that the effect of personal conversations with parents or mentors disappears. The only variable now having a negative effect on regretting the educational choice is the visit to the study counsellor. Interestingly, Oliver and Spokane (1988) and Whinston et al. (1998) also report that individual counselling is most effective.

2.6. Conclusions on IAG to support initial choice

In Section 2, we have shown that there is a great need for IAG in the initial phase of the education. For a Dutch sample of graduates, we find that on average 21 % of the respondents regret their educational choice 18 months after entering the labour market. Regret increases with years of experience. 10 years after graduation, the average level of regret stabilises around 30-40 %. Regretting a choice is an important incentive to continue learning in a different discipline after graduation. The price of this continuation of learning is that people are not working at the time they are in education. These capacity losses are substantial and vary significantly between countries.

Besides the quality of the choice for a discipline, we also analyse whether people invest in their education timely. Our estimates confirm that the majority of the people who follow an education at a later age do this because they find out too late how useful the education is to them and not because they think it is more useful to follow the education at a later age. Adult participation in education, therefore, reveals the need for vocational guidance among young people. Improvements in the educational choice when students are young could reduce the need for later repair and could thus lower the need for acquiring full qualifications later in life.

There is abundant evidence that IAG helps to improve choices in initial education. We show that visiting a study counsellor is an effective method to decrease the probability of regretting the education.

(31) This estimation technique is called two-stage least squares. We instrument the respondent's use of help by his fellow-students' use of help.

(32) High schools are the Dutch HAVO and VWO.

Table 4: **Effects of high school ⁽³²⁾ factors on regret**

	Differences between students			Differences between schools		
	coefficient	Standard error		coefficient	Standard error	
Lessons on educational and professional choice	-0.011	0.009		-0.094	0.064	
People came to speak about their professions	-0.007	0.010		0.040	0.044	
Personal conversations with mentors	-0.014	0.009	*	-0.143	0.106	
Personal conversations with study counsellors	0.002	0.009		-0.178	0.064	***
Talked to parents about educational choice	-0.022	0.009	**	0.557	0.718	
Searched for contact with people working or studying in interesting fields	-0.011	0.007		-0.108	0.118	
Test for educational or professional choice	-0.022	0.020		0.052	0.255	
Extended documentation about educations and professions at school	-0.020	0.016		-0.063	0.128	
Subscription to magazine about educational choice	0.057	0.032		-1.216	0.844	
Been to the educational choice meeting in Utrecht	0.007	0.018		-0.046	0.061	
Professional guidance	0.056	0.034		-2.230	4.728	
Number of times been to college information days	0.006	0.004		-0.062	0.078	

Source: SIS supplement (ROA, 2005); Borghans and Golsteyn (2005).

*** = significant at 1 % niveau, **=significant at 5 %, *=significant at 10 %.

3. IAG and continuing learning

3.1. IAG decisions over the life cycle

With the increasing importance of lifelong learning the question arises in what way traditional IAG has to be adjusted to the fast changing work environments and the end of linear career paths. This new environment not only influences the choice of a vocation when being young, but also investments in training and learning by doing during working and adult life. The need for career counselling for adults has, therefore, recently gained much focus on policy agendas.

Watts (1996) stresses the need for lifelong career counselling to make a new concept of career accessible to all. Careers are no longer an orderly progression up a hierarchical ladder within an organisation or profession, but rather an individual's lifetime progression in learning and work. The fast moving economy in which people have to change tasks often in their lives, calls for a three-prong strategy which entails career counselling as an integral part of all education provision, all employment provision and access to neutral career guidance when individuals wish to review opportunities to move between educational institutions or employers.

Ohsako (2000) argues that counselling can play an important role in lifelong learning. Among others, counselling can stimulate adults to learn, provide customised guidance through the overwhelming amount of information about learning, promote their self-efficacy, help workers to learn at the workplace and remove learning barriers.

In addition, many older workers thought, when they started their careers, that the skills they acquired during initial education and training would last until retirement. These people are now often confronted with more complex work environments, to which they have to adjust. Simon and Osipow (1996) argue that despite the obvious need to assist them by counselling only

few theories (e.g. Super's life-career rainbow) have addressed this issue. According to Simon and Osipow, counselling interventions for the older adult can be grouped into three areas of assistance:

- (a) helping people to find connections among various personal life events and personality changes;
- (b) helping them find the general themes in their career and patterns of work preferences;
- (c) using the first two, help individuals to becoming aware of the future.

In this way, people may become more aware of their vocational identity even confronted with fragmented professional careers and may become more satisfied with their careers, with aging and retirement.

Beijan and Salomone (1995) proposed that a sixth stage should be added between Super's (1957) late establishment and early maintenance stage, called career renewal. According to these authors, many adults in their 40s undergo a state of instability strong enough to be called a (midlife) crisis, in which they feel compelled to choose the alternative they prefer regarding vocational, religious, political questions. The individual perceives a loss of self, forcing to find a new self-concept by expressing aspects of the personality previously undeveloped. Many adults are then questioning the purpose of their vocational and personal life and looking for meaningful goals for the future. Counselling can help these people to choose among three alternatives:

- (a) renew a commitment to their careers by updating skills and developing new competences;
- (b) alter their lifestyle to devote more time to leisure and family and merely maintain work skills to stabilise their career;
- (c) change careers and then concentrate on the establishment stage tasks.

Niles et al. (1998) analyse how adults use exploration (i.e. learning more about oneself and

one's situation) to cope with career development tasks. Mentors, peers, or other resources might be useful to them in their exploration. Using the adult career concern inventory on a sample of US adults, they grouped respondents into three clusters, which helped career counsellors to identify the exploratory needs of their clients regarding their career. The first cluster was exploring to maintain their current position until retirement. People in this cluster wanted to solve problems in their current workplace, for example getting more social support and identifying new skills to acquire for their current jobs. The second cluster used exploratory behaviour to access to new occupations or re-enter the workforce. Career counselling for re-entering women, focused then on similar issues as with adolescents exploring for the first time, although they were on average 33 years old. For people in this cluster expressing the need to change to make a fresh start, career counselling focused on helping to gain a realistic image of career beliefs. In short, career counselling with people from the second cluster focused on identifying values, interests and transferable skills. The third cluster was exploring to innovate and move ahead. They want to make progress in their careers or find new ways to do the old things. Career counsellors found for one subject in this cluster that instead of changing occupation, she needed to change job from being a nurse to a nursing position at a local substance abuse centre.

Guidance may even be relevant for adults in the latest stage of their career. Among others, Liptak (1990) shows that counselling can help individuals who plan for retirement to be more successful in coping with the transition.

3.2. IAG in training and learning by doing

3.2.1. Training

Colquitt et al. (2000) discuss individual factors (e.g. anxiety, locus of control, self-confidence, self image) which may increase the incidence of training. In a recent paper, Borghans and Golsteyn (2006d) show that there are several reasons why later investments are more complex for individuals to be made. Once people have left initial education, most of their time is spent on other activities than learning in formal settings, so in this environment it will be less obvious to think about learning opportunities. A school offers uniform and consistent curricula. Training for further development and maintenance however requires that people select specific courses, based on their capabilities and skill shortages, therefore requiring much more self-knowledge.

The line of argumentation that older people will be facing more trouble when choosing what to learn should not be confused with our earlier argument that older people know more about their lives and hence possess better information that would have been relevant for choices in the past. Older people know better what kind of learning in the past would have been relevant for them during their career, but the decision about how to continue learning becomes more difficult since their learning environment becomes vaguer and, therefore, much more complicated.

Table 5 provides information for the frequency of regret of training participation, on average 1.5 year after finishing the course⁽³³⁾. The table shows that there is only a small difference in regret between men and women. Also when comparing education background, the differences are not large. The major exceptions are people with only primary education. In this group about 27 % of all participants in training courses regret the participation afterwards⁽³⁴⁾. There is a very

(33) This information is taken from the Survey 'Levenslang Leren,' in which a representative sample of the Dutch population is interviewed. The sample contains 2 400 respondents.

(34) This may be due to the fact that people with primary education have only a limited spectrum of training opportunities afterwards and those mainly at lower levels.

Table 5: **Percentage workers who regret the training they participated in, by gender, educational background and extent of support of the employer**

	%
	Regret of recent training
Men	16.3
Women	17.2
Educational background	
Primary school	26.9
Low secondary (VMBO)	18.7
High secondary (HAVO/WVO)	15.4
Vocational college (MBO)	14.5
Higher vocational education (HBO)	15.1
University (WO)	18.6
Support from employer	
Little or no feedback	19.8
Substantial feedback from manager	10.8
Total	16.7

Source: *Enquête levenslang leren* (ROA, 2004); Borghans et al. (2006).

sharp distinction, however, between workers who receive feedback from their manager about their development and support from their firm to participate in training and those who do not. Only 10.8 % of the workers who are supported by their firm to work on their development regret their training participation, while among others this percentage equals 19.8 %. This suggests that support or guidance by the manager or other professionals might be very important for choosing the right training course.

In 2003 the Eurobarometer included several questions about lifelong learning (see also Cedefop, Chisholm, 2004). In one of these questions the respondents were asked to mention three likely obstacles for taking part in training. Among the alternatives the respondents could answer 'I do not know what I could do that would be interesting or useful'. Figure 4 shows that the probability of answering that good information about what could be

useful is lacking, is clearly related to age. From about 40 years on, the fraction of workers that indicates that they do not know what kind of course to follow steadily increases.

Table 6 provides the same information per country, distinguishing workers younger and older than 40 years. In the group of workers younger than 40 years, the fraction not knowing what kind of course to follow is low in all countries, varying from 1.3 % in Greece to 7.9 % in West Germany. Among the older workers, there are many more who do not know what training could be useful, but also the variation between countries is much larger. In Iceland only 5 % of the workers older than 40 indicate that they do not know what course to participate in. Also in Greece, Norway and Sweden this percentage is less than 10 %. In East Germany, Spain, Italy and Portugal more than 20 % of the workers older than 40 indicate not to know what training could be useful.

Figure 4: **Fraction of workers indicating that having access to good quality information and advice tailored to their needs would encourage them to take up studies or training, by age**

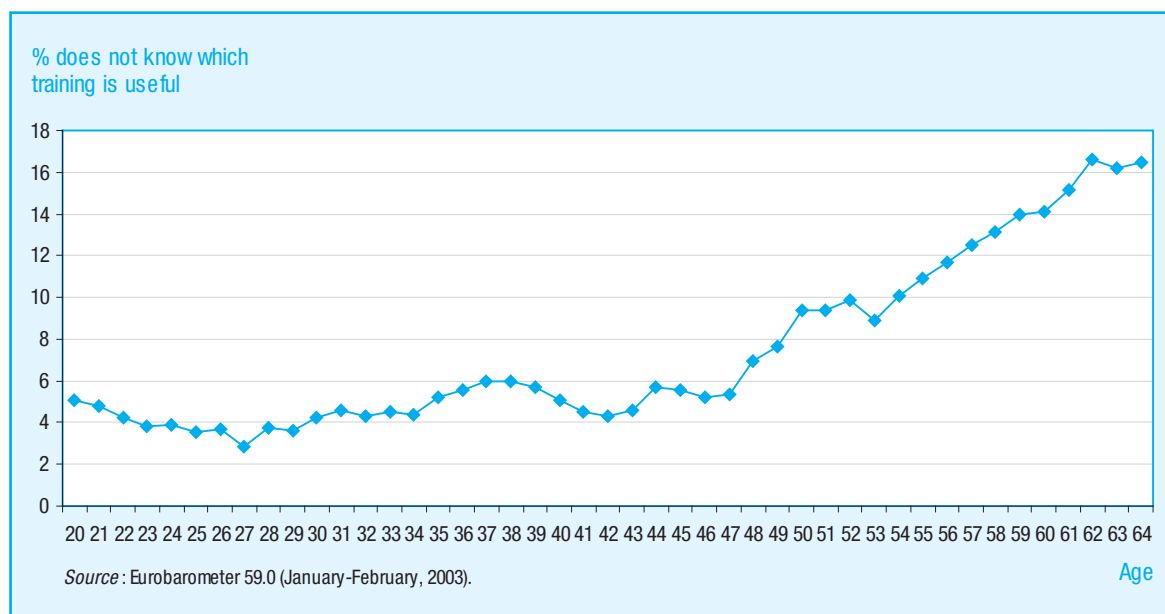


Table 6: **Fraction of workers indicating that having access to good quality information and advice tailored to their needs would encourage them to take up studies or training, by country and age group (younger than 40 versus older than 40)**

		%	
		<40	>40
AT	Austria	4.4	15.2
BE	Belgium	5.8	14.1
DE (E)	East Germany	6.0	20.2
DE (W)	West Germany	7.9	15.3
DK	Denmark	3.1	11.8
EL	Greece	1.3	8.4
ES	Spain	4.1	20.3
FI	Finland	2.8	14.5
FR	France	5.1	18.6
IE	Ireland	6.8	16.0
IS	Iceland	4.9	5.0
IT	Italy	3.8	22.1
LU	Luxembourg	5.8	10.4
NL	Netherlands	3.8	11.9
NO	Norway	1.7	7.4
PT	Portugal	4.1	21.6
SE	Sweden	3.0	9.7
UK (GB)	Great Britain	6.3	14.9
UK (NIE)	Northern Ireland	5.3	17.9
	Total	4.5	14.7

Source: Eurobarometer 59.0 (January-February, 2003).

3.2.2. Learning by doing

From this evidence, we can conclude that many people do not seem to know which training they can learn from most. Therefore, the task for an employer or counsellor to advise the worker becomes crucial. IAG in the form of a manager guiding employees to benefit from learning opportunities related to work is also plausibly much more important than help offered to choose courses.

Mentoring can thus be an efficient way to provide counselling within an organisation. A mentor is often defined as a person a few levels ahead in the organisation who lends support to a less experienced worker. Mentoring relationships can be very beneficial for the worker in terms of promotions, salary increases, career satisfaction as among others Chao et al. (1992), Kram (1985), Turban and Dougherty (1994) and Dreher and Cox (1996) report. However, Scandura (1998) shows there may be also negative aspects of (bad) mentoring. Murphy and Ensher (2001) stress that not all mentoring relations are effective. They define three mentoring types:

- (a) direct support to enhance the protégé's career;
- (b) psychosocial support;
- (c) role model.

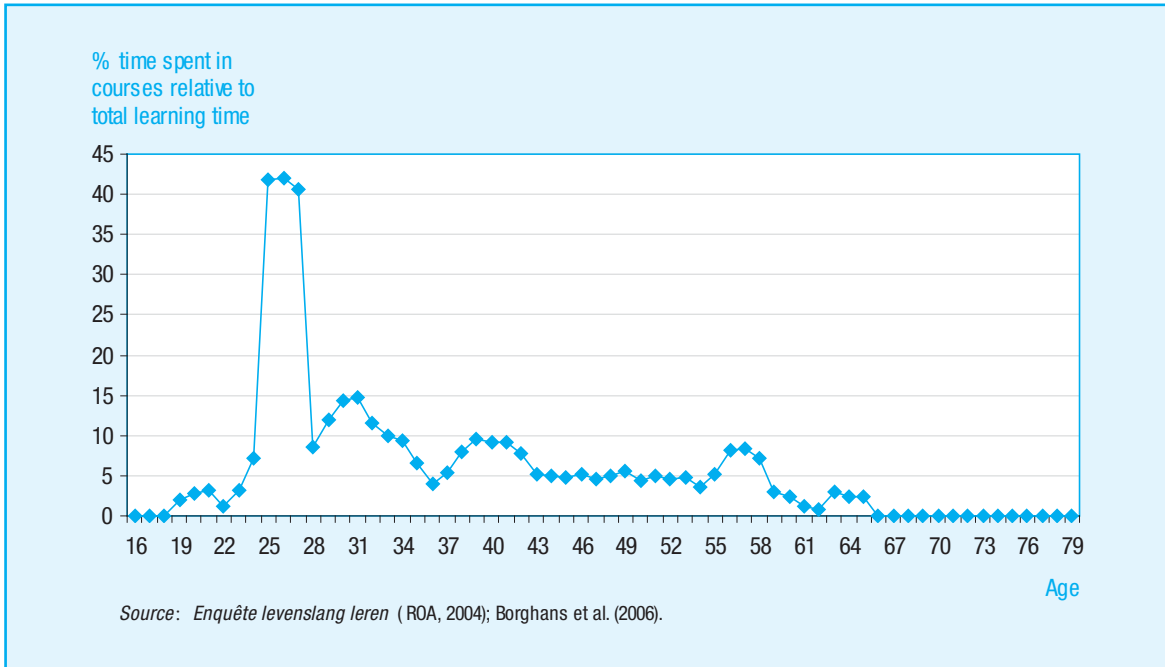
In relation to this, Chao et al. (1992) show that support is most effective if it is informal. Murphy and Ensher (2001) use a sample of 31-50 year old people who work in a media organisation. They find using a sample of US West coast media organisation and school district that there is an important positive effect of mentoring support on career outcomes, for example job satisfaction and perceived career

success, but only if there is direct support to enhance the career of the worker. When there is psychosocial support or when the mentor acts as a role model there is no effect on job satisfaction or perceived career success.

The relative importance of training as regard learning-by-doing is an important issue in the discussion of the relevance and kind of IAG to be given during working life. While in training courses, people spend some time outside their work environment to learn, learning-by-doing is characterised (Arrow, 1962; Rosen, 1972; Killingsworth, 1982; Jovanovic, 1995) by the fact that work activities are used to learn. Even without the purpose to learn, many work activities will make the worker learn. This can be intensified by selecting the tasks for a worker to promote his learning. Borghans et al. (2006) calculate that 94 % of learning on the job is related to learning-by-doing while only 6 % of the learning time is concerned with following courses and training. Learning by doing is more prominent when people are young, but is still very relevant among older workers. Younger workers spend approximately 40 % ⁽³⁵⁾ of their time on tasks from which they learn. This gradually decreases when people gain experience. Older workers however still spend 25 % of their time on tasks from which they learn. Training participation is also much more concentrated among younger workers, as is shown in Figure 5. In the age group 25-27 a large share of learning on the job is training. Around the age of 30 about 15 % of the learning time is in education or training. When people become older this share decreases, and the importance of learning-by-doing increases.

(35) Note that this percentages refers to the total amount of learning time relative to total time on the job, while the earlier mentioned 94 % refers to the time people spent on learning-by-doing relative to the total learning time.

Figure 5: The fraction of the time spent in training relative to total learning time



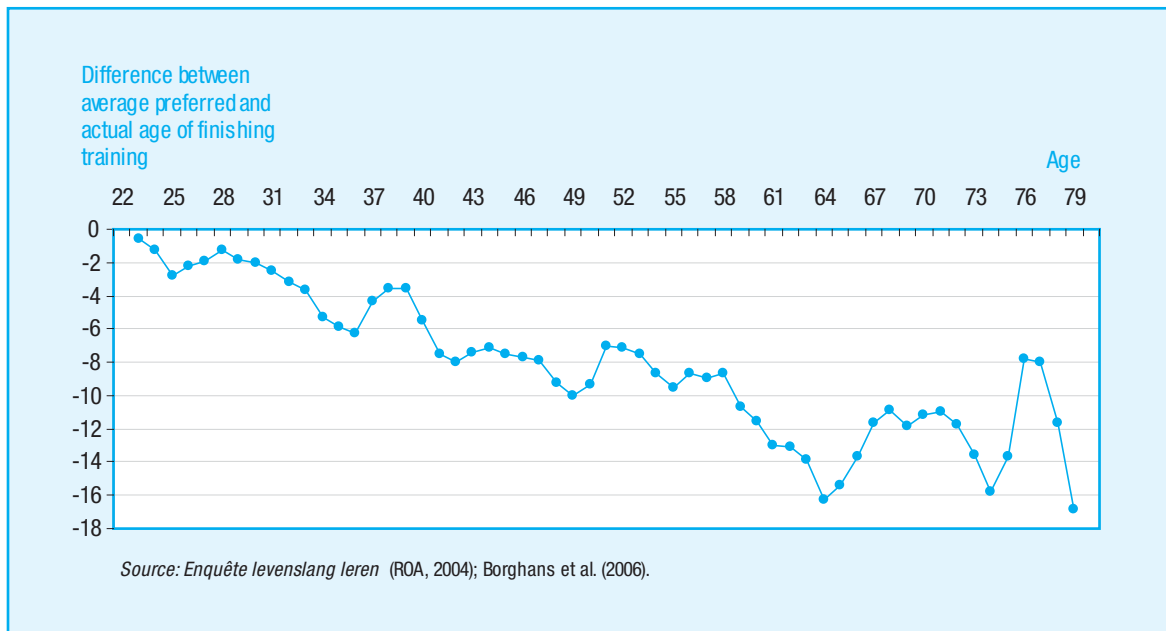
3.3. Timing of training

Regret of the timing of training differs substantially from regret of the timing of education. Among those who participated in a training course ⁽³⁶⁾, about 50 % indicates that if they could choose again they would have participated in this course in another period of time. Almost everyone who indicates that the timing was not adequate say that they would have preferred to follow the same training earlier. Figure 6 shows how many years earlier those who wanted to follow a course at another point in time would have wanted to follow the course. The figure shows that the difference between the preferred and actual timing of the course is larger for older people. Around 55 years of age, people indicate that on average they would have liked to follow

the course 15 years earlier. This indicates that especially elderly people follow courses, which they, in retrospect, would have liked to have followed much earlier. On average these people who indicate that it would have been better to follow the training earlier, do not prefer this course to be followed very early in their career, but only prefer an earlier stage in their working career.

This finding suggests that for people to consider counselling participation during their working career is useful. It seems that many workers realise only late that a certain course could be useful to them. They first seem to need certain work experience to understand the need for a training that would have been more efficient when participation had anticipated the need for these skills.

(36) Participation in training is defined by the question 'how many courses or training did you complete in the past two years.'

Figure 6: **Difference between average preferred and actual age of finishing training**

3.4. Conclusions on IAG to support further learning

In this section, the need for IAG when people continue learning after initial education is discussed. We argue that these later investments are more complex for individuals to be made and that there is, therefore, a great need for IAG. Our evidence suggests that an important way to provide IAG may be managers helping

their employees to make the right decisions concerning which courses to choose or which tasks to focus on. Evidence shows that the role of a manager helping or guiding his employees is crucial. Only 10.8 % of the workers who are supported by their firm to work on their development regret their training participation, while among others this percentage equals 19.8 %. From about 40 years on, the fraction of workers indicating that they do not know what kind of course to follow steadily increases.

4. Summary of findings and implications for policy and research

4.1. Summary of findings

The aim of this research is to provide a framework for thinking about the effect of IAG in a lifelong learning perspective, to overview the literature in this field and to provide empirical information for the US and European countries, with a special focus on the Netherlands.

Our framework for thinking about IAG in a lifelong learning context starts with a discussion about the reasons for lifelong learning. We argue that to understand the role of IAG in a lifelong learning perspective it is important to look at the economic reasons why people learn at a later age. We show that there are three reasons why people spread learning investment over their life-cycle:

- (a) specific skills might depreciate rather fast, but because they are complements to more general skills, it is worthwhile to keep investing in renewing these skills;
- (b) economic or technological shocks on the labour market may make it necessary to invest in new skills;
- (c) misguided educational choices in the past might lead to reparation of these previous educational investments.

As we will argue in the section below, it is important to note that the different reasons for lifelong learning lead to different requirements for IAG.

Improvements in IAG throughout the whole career can improve the efficiency of the VET system. We argue throughout the report that there are three reasons why adequate IAG has become of growing importance:

- (a) since VET is closely linked with specific occupations, choices regarding participation in education and training are associated with a higher risk. People can make 'misinvestments' because economic conditions can change and alter the value of specific skills in the labour market. Research

(e.g. Jovanovic, 1979) has shown however that a large fraction of such misinvestments is related to a mismatch between an occupation and people's personal capabilities and preferences. Somebody chooses to be schooled for a certain profession because he/she expects that this job will suit him/her, but experiences later that this choice was based on a misconception. Borghans and Golsteyn (2006a) show that 20-40 % of all Dutch workers who left education indicate that they would have chosen another field of study if they could choose again. Many of them actually decide to go back to education. In this report we have shown estimates of the costs of these reinvestments for several European countries. The estimates vary between 3.2 % (France) and 11.5 % (Italy) of the total labour costs in these countries. Throughout this report, we showed that IAG plays an important role in improving choices with respect to education and training;

- (b) with the growing importance of lifelong learning, similar participation decisions regarding education and training have to be made throughout the whole career. There are several reasons why these later investments are more complex for individuals to be made. Borghans and Golsteyn (2006d) show for instance that many people do not know which courses to take to reduce skill deficiencies at work. Once people have left initial education, most of their time is spent on other activities than learning, so in this environment it will be less obvious to think about learning opportunities. Schools offer uniform and consistent curricula, but training for further development and maintenance requires that people select specific courses, based on their capabilities and frailties, therefore requiring much more self-reflection. Finally, since learning by doing contributes substantially to the acquisition

of skills of people who are working, the work environment and possibilities for learning at work have to be taken into account in training decisions. People who are supported by their manager to participate in training and receive adequate feedback for development make substantially less errors in their training participation decisions;

- (c) finally, the very nature of lifelong learning also implies that people have to decide about the optimal timing of training participation. Recent survey results show that apart from which kind of training to participate in, people also face serious difficulties in deciding when to take part in these courses. Many respondents indicate that, looking back at previous training participation, they would prefer a different timing of the same course (Borghans and Golsteyn, 2005). IAG is an important policy instrument to assist people in making these difficult choices and, therefore, to increase the efficiency of the VET system. Recent research has shown the benefits of such policies (e.g. Bimrose et al., 2004; Bosley et al., 2002; Killeen et al., 1994; Mayston, 2002).

4.2. Implication for policy and research

At the European level, the policy framework for guidance and counselling is set in the Council resolution of 2004⁽³⁷⁾. The council defines guidance as follows: 'in the context of lifelong learning, guidance refers to a range of activities that enables citizens of any age and at any point in their lives to identify their capacities, competences and interests, to make educational, training and occupational decisions and to manage their individual life paths in learning, work and other settings in which these capacities and competences are learned and/or used.'

The importance of the role of guidance is reflected (among others) in the following quote: 'guidance can provide significant support to individuals during their transition between levels and sectors of education and training systems and from school to adult and working life; to young people re-entering education or training after leaving school early; to persons re-entering the labour market after periods of voluntary or involuntary unemployment, or homemaking; to workers where sectoral restructuring requires them to change the nature of their employment; and to older workers and migrants.'

Our report also stresses that IAG is extremely important throughout the life of an individual. The main contribution of this report is that we have provided a new framework for thinking about lifelong learning and that we regard the role of IAG in the light of this framework. As noted in the section above, the report identifies three reasons for lifelong learning. These reasons lead to different requirements for IAG:

- (a) when people learn at a later age to upgrade depreciated skills, the role of IAG is to provide information about the way in which their skills can be updated;
- (b) due to economic or technological shocks, information is needed about the new employment opportunities that might provide alternatives to people facing a decrease in demand in their own sector,
- (c) reparation of misguided initial educational choices asks for improved IAG for young people to improve their picture of their future working life to avoid misguided educational choices.

There is evidence that a large share of participation in education among adults is related to the reparation of previous erroneous decisions or unexpected shocks in the labour market. As far as guidance can help people to avoid these misinvestments, improved IAG could reduce costly reinvestments later during the career. Although there is ample evidence that young workers lack an adequate picture

(37) Available from Internet: http://ec.europa.eu/education/policies/2010/objectives_en.html#reforming [cited 16.10.2006].

of the future working life, there is not yet much known about the way in which the image of the future can be efficiently improved. From what is known about the problems students face when making an educational and vocational choice, policies that stimulate students to create a realistic picture of their future working life, seem to be promising.

In the area of research, a lot of work remains to be done as well. Analyses based on cross-sectional information about differences in the way students gather information might lead to biased results, since students who face

problems with making a choice follow other strategies than students who are better able to handle these difficult choices. Randomised experiments with approaches to assist students in their choices, following them sufficiently long to monitor the effects, are therefore a promising way to improve our knowledge about tools to effectively help students. In this way it can be systematically investigated which concrete forms of IAG are most effective, while also the size of the impact of these policies on mismatch and misinvestments can be quantified.

Annex

The Dutch educational system

High school	Further education
High (VWO) 6 years	University (WO) 5 years
Intermediate (HAVO) 5 years	Professional college (HBO) 4 years
Low (VMBO) 4 years	Vocational college (MBO) Apprenticeship 1-3 years

List of abbreviations

Cheers	Careers after higher education: a European research study
HAVO	<i>Hoger algemeen voortgezet onderwijs</i> [Senior general secondary education (5 years, age 12-17)]
HBO	<i>Hoger beroepsonderwijs</i> [Higher professional education (4 years, age 18-22)]
IAG	information, advice and guidance
MBO	<i>Middelbaar beroepsonderwijs</i> [senior secondary vocational education (4 years, age 16-20)]
SIS	<i>Schoolverlaters informatie systeem</i> [School leaver information system]
VET	vocational education and training
VMBO	<i>Vorbereidend middelbaar beroepsonderwijs</i> [pre-vocational education (4 years, age 12-16)]
VWO	<i>Vorbereidend wetenschappelijk onderwijs</i> [Pre-university education (6 years, age 12-18)]
WO	<i>Wetenschappelijk onderwijs</i> [University education (4 years, age 18-22)]

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