

Gender segregation in the labour market: roots, implications and policy responses in Denmark

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Gender segregation in the labour market: root causes, implications and policy responses in the EU

September 2008

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Country abbreviations

AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
EL	Greece
ES	Spain
FI	Finland
FR	France
HU	Hungary
IE	Ireland
IS	Iceland
IT	Italy
LI	Liechtenstein
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	The Netherlands
NO	Norway
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
SE	Sweden
UK	United Kingdom

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Executive summary

The aim of this report is to analyze employment segregation for women and men in the European Labour Market at both the sectoral and occupational levels. It provides a comparative analysis of trends in segregation across the 27 EU Member States, Norway, Iceland and Liechtenstein, examines the root causes of the phenomenon, the consequences, as well as current and desirable policy responses.

Gender-based employment segregation is so pervasive that distinctions have multiplied in order to facilitate analysis: occupational versus sectoral segregation, overall or horizontal versus vertical segregation, vertical versus hierarchical segregation. Horizontal segregation is understood as under (over) representation of a given group in occupations or sectors not ordered by any criterion and is often referred to as segregation *tout court*. Vertical segregation denotes the under (over) representation of the group in occupations or sectors at the top of an ordering based on ‘desirable’ attributes – income, prestige, job stability etc. Finally, hierarchical segregation stands for under (over) representation of the group at the top of occupation-specific ladders. All forms of gender-based segregation are considered in this report, although overall and vertical segregation in occupations receive closest attention.

The first part of the report examines levels and change in overall segregation in European countries (chapter 1). It goes on to review the most important factors that impinge on segregation (chapter 2) and to assess three main implications, namely, undervaluation of women’s work, confinement in ‘low quality’ jobs, and skill shortages (chapter 3). Policies are reviewed and assessed in chapter 4. The second part of the report summarises the highlights from case study research conducted at national level on 10 occupational groups, the evidence from this research being used as reference throughout the report.

Persistence and change in segregation within Europe

Three indexes are used to measure segregation and track its change over time, respectively the Karmel and MacLachlan index (IP for short) the Index of Dissimilarity (ID) and the classification of occupations into feminized, mixed and male-dominated. The reference data source is the European Labour Force Survey.

In percentage terms the IP index varies between 0 and 50. It is the indicator currently used to monitor segregation within the EU employment strategy and can be interpreted as the share of the employed population that would need to change occupation (sector) in order to bring about an even distribution of men and women among occupations or sectors. The ID index has a similar interpretation but varies between 0 and 100 in percentage terms because the change of occupation required to even out the distribution of employment is attributed to one sex only, men or women. All the three indexes that have been used turn out to be broadly in agreement about cross-country differences in the level of segregation or the pattern of change over time.

For the EU as a whole segregation as measured by the IP index is still relatively high, reaching 25.3% level for occupational segregation and 18.3% for sectoral segregation. However, differences among countries remain wide, with a gap of about 10 percentage points between the most and the least segregated country.

Whether occupational or sectoral segregation is considered, the same four countries belong to the high- and the low-segregated group, respectively. The four high-segregation countries are Estonia, Slovakia, Latvia and Finland, and the four low-segregation countries are Greece, Romania, Malta and Italy. The well-known opposition of the 1990s between high-segregation Nordic countries and low-segregation Mediterranean countries has given way to a similar opposition between (part of) the East and (part of) the Mediterranean.

At aggregate level, indexes of occupational segregation reveal no significant change between 1992 and 2000 for either EU27 or EU15. However, a slight upward trend is detectable for the current decade and is more pronounced for sectoral segregation. Modest change at the aggregate level hides contrasting patterns at country level. Austria, the Czech Republic, Denmark, Norway, Sweden, and the UK experienced relatively fast de-segregation, with decreases in the IP index ranging from 2.8 to 1.5 percentage points between 1997 and 2007. In contrast, segregation increased in Bulgaria, Ireland, Italy, Latvia, Romania and Spain.

With the exception of four countries, mixed occupations increased over the past decade in all the countries where segregation indexes declined, and conversely. Across most countries, moreover, change affected male dominated occupations more than female-dominated ones, since the share of the former decreased proportionately more.

Decomposition of the Index of Dissimilarity into a structural component, a sex ratio, and a residual component suggests that in the short term both the structure of occupations – i.e. their respective weights on total employment - and the sexual composition of workers within occupations contribute to the overall change in segregation, often but not always in the same direction. Over longer periods of time, however, change in the sexual composition of workers within occupations tends to become the dominant component. In other words, long run decreases in segregation ultimately depend on achieving a more balanced representation of women within each occupation.

This notwithstanding, there is evidence that significant increases in female employment are likely to raise the level of segregation in the short and medium run. A temporary trade-off may therefore arise between the objective of raising women's employment and that of favouring de-segregation.

Evidence from the case studies helps clarifying the micro-dynamics that governs the relationship between segregation and employment in the short and long runs. In the short and medium run it may be easier for women to enter where overall employment grows, sometimes inflating an already large female share and thereby increasing segregation. When the inflows are sufficiently large, however, some women also end up in niches of relatively male occupations from where they can branch out in the long run, thus rebalancing the sexual composition.

Root causes of segregation

The debate on the root causes of gender segregation in employment dates from the seventies, but it remains the point of reference to date despite the fact that so much has changed since then. After decades of research, most scholars would agree that there can be no single-factor explanation for such segregation, and that the latter may lead to pay discrimination.

Key factors identified in the voluminous literature on segregation are, in no particular order, comparative biological advantages, under-investment in human capital (schooling or training),

differential income roles, preferences and prejudices, socialization and stereotypes, entry barriers and organizational practices.

Given widespread enforcement of equality legislation over the past years, impressive advances of women in education, progressive loss of importance of physical attributes for productivity, change in family roles and, last but not least, successful challenging of gender norms by feminism, current research has both narrowed down the list of potentially relevant factors identified in the early debate and nuanced the original explanations.

Priority is given in recent research to four sets of factors: choice of study field, stereotypes, the demand for shorter or flexible hours of work because of the unequal care burden and differential income roles, and covert barriers and biases in organizational practices, including collective bargaining procedures.

There is mixed statistical evidence and some qualitative (case study) evidence that the field of study still influences which occupations men and women enter. During the last fifteen years greater diversification of choices in tertiary education appears to have preceded de-segregation in employment in the EU15 group of countries. This does not hold for Central and Eastern European countries where the distribution of women and men across fields of (higher) education has recently become more balanced without this showing up in a more balanced distribution in employment. One reason for mixed evidence is that the correspondence between field of study and occupation has been found to be sufficiently close only for about 10 percent of jobs, those in the licensed professions such as doctors, teachers, lawyers, accountants and so on.

Stereotypes are ubiquitous and continue to influence behaviour, but it is not easy to pinpoint how far they stand for genuine preferences, how far they express social norms or how far they are used to surrogate information. The actual role that stereotypes play in segregation may in fact be overestimated by qualitative research because they offer a ready-made and socially acceptable rationalization of decisions that may have been taken on other grounds. Thus, for example, some researchers argue that the traditional association between caring and woman is a cogent, if partial explanation of why medical specialties like paediatrics are female dominated. At the same time, when Norwegian men have been explicitly asked why they are not attracted to pre-primary school teaching they stated poor pay as a reason, not fear of association with a caring role. Overall, case studies suggest that the role of stereotypes is less pervasive among younger professional women and men.

The unequal care burden and the consequent inability to prioritize income commitment within the family drive the quest of many women for shorter and more flexible hours of work. Among qualified women (the ‘professionals’) this search for hourly friendly occupational niches often results in re-segregation into professional niche, or it hinders entry into occupations featuring high/irregular work hours and workload. For this sub-group of women re-segregation in search for more convenient working schedules can sometimes be penalizing, but it has also led to successful opposition to the culture of long hours of work, e.g. among General Practitioners in the UK (family doctors).

When the search for shorter working hours becomes a choice for part-time work, it further restricts the choice of occupation, especially among the less qualified. A strong indication in this respect is the fact that measured levels of segregation increase by between 15 and 30 percentage points in the vast majority of member countries (22 in EU25) when full time women are dropped from the calculations, i.e. when the occupational distribution of men is compared to that of women part-timers rather than that of all women employed.

Although legal barriers to women's entry or restrictive practises have long been outlawed, covert biases or forms of impediments still operate, often restricting career paths and career prospects for women within occupations. Examples that bear special importance for vertical or hierarchical segregation are closer rungs on ladders in feminized jobs career tracks, mechanisms of cooptation and discretionary managerial practices for selection, hiring and promotions that de facto favour men, as well as lack of networking resources among women. All these mechanisms interact with different types of employers (large/small, private/public) in shaping the pattern of segregation.

It remains important to distinguish between high paid, professional occupations and low pay ones. There is evidence that most of the factors sustaining segregation are becoming less important among younger cohorts of educated, professional women. This is less clearly the case for low-paid occupations.

Implications of segregation

Attention to the implications of gender-based segregation in research and policy circles has traditionally gone to wage inequality, including undervaluation of female work and discrimination. Whilst pay remains central, other working conditions such as employment security, health risks or provisions for reconciling work and family life are important components of the overall quality of jobs, and, because of segregation, may accrue differently to female and male employees. Recently, segregation has been questioned also because it threatens to exacerbate labour and skill shortages.

Instances of undervaluation of women's jobs are still common. Lingering overt biases in job evaluation practices, covert biases deriving from the way job evaluation procedures are operationalised, poor visibility of female skills, the fact that female dominated jobs are often less 'professionalized' or afford shorter occupational ladders, all emerge from the case studies as important factors. Unsurprisingly, however, such instances are found to occur more frequently at the lower end of the occupational pyramid. Clear examples from the case studies are office cleaners in Germany or the police in Slovenia for overt biases in job evaluation; home based care workers in Italy or France for poor visibility of skill; the long-term care sector in Austria for insufficient 'professionalism' before the latest reform redefined the career ladder in the attempt to attract men.

In contrast, the possibility that occupations become devalued following feminization is not clearly supported by evidence, but the cases in point are professional occupations such as doctors, magistrates or university teachers. These are largely public sector jobs, a probable factor of protection from undervaluation.

Concerning pay discrimination, cross-country studies do not find that segregation is a significant contributing factor, while country-specific econometric analysis confirms that segregation between/within occupations and between sectors or industries accounts for a large share of discrimination.

This latter finding, however, cannot be taken to mean that all segregation implies pay inequality. One way to quantify the strength of the link between pay inequality and segregation is to break down indexes of segregation into a component accounted for by pay inequality – call it vertical - and a neutral component. The decomposition that has been carried out here uses EU-SILC data on employment and hourly pay by occupation and it finds that the vertical component is between

one third and nine tenths of the neutral component in 17 out of the 22 countries included in the calculations.

Following the proposal of the European Foundation for the Improvement of Living and Working Conditions four main dimensions of job quality have been considered: career and employment security; health and well-being of workers; reconciliation of working and non-working life and skills development. Concern about differences in job quality partly overlap with the fears raised in the debate on labour market segmentation that the unequal distribution of secure and stable jobs may be exacerbated by segregation.

Analysis of selective indicators for these four dimensions of job quality indicates that, in addition to pay, important asymmetries in favour of men still concern career prospects, and access to managerial and supervisory positions, while women are much less exposed to long working hours. All of these asymmetries are channelled via occupational segregation to a greater or lesser extent.

Gender differences are rather contained in other job dimensions, specifically the distribution of fixed-term contracts, non-standard hours, opportunities for skill development within occupations, and the chances of transiting from temporary to stable employment. With specific reference to successful transition out of temporary employment, the indicator used here is the number of countries where the rate of successful transitions for a given occupational group between 2004 and 2005 was higher than the economy-wide average. The findings are that, if anything, the number of success cases (countries with a transition rate above the national average) are marginally higher for prevalently female occupations, probably reflecting the fact that occupations where employment is declining are more often male dominated

However, modest differences in some of the selected dimensions of job quality do not justify policy complacency. First, differences are still pronounced for some occupations or countries, although they are contained for the EU as a whole. Also, the finding that fixed-term contracts are more or less equally distributed between the sexes does not make them more acceptable; nor does it cancel the risk that uncertainty about future employment prospects may hinder fertility among the many young women on fixed contracts.

Segregation may oppose efficient reallocation of labour supplies, male and female Both Cedefop projections and national reports indicate that skill and labour shortages are likely to affect mixed occupations less than male or female dominated occupations in the medium run. Instances of (broad) male dominated occupational groups for which shortages are anticipated include plant and machine operators and assemblers, senior officials, managers and legislators, and craft and related workers. Female dominated occupational groups where shortages are expected feature service workers and sales workers, clerical workers and elementary occupations - including care workers with low levels of qualification - and professionals or associate professionals - including qualified care workers such as nurses.

Also, a degree of polarization is emerging in the pattern of future skill needs, with growing occupations at the lower end of the (recognized) skill spectrum as sale workers unbalanced in favour of female employment, and growing occupations at the top end of the spectrum unbalanced in favour of male-dominated jobs, e.g. computing. This adds cogency to the need for de-segregation, because the latter can favour the redistribution of labour supply flows and of opportunities for the development of higher skills. If this to happen, however, de-segregation must be pursued by attracting men into feminized areas such as care work as well as by facilitating women's advancement in managerial professions or growing technical occupations.

Policy Issues

Policies to tackle segregation have a long-standing tradition in relatively few member states, primarily the Scandinavian countries, the UK, France, the Netherlands and Germany. The Southern European countries are still grappling with low female participation. Their policy interest lies less with specific de-segregation policies than with general provisions for the reconciliation of work and family life. For Eastern European and other new member states the debate on segregation is generally very recent, or there is hardly any policy debate.

Given that policies favouring reconciliation are discussed extensively in recent reports for this network, attention here is focussed on societal and labour market provisions implemented by Member States. The former include events to raise awareness of gender segregation, educational programmes to counter stereotypes at school and media, and communication initiatives to counter stereotypes and spread information among the general public. Labour market provisions include training and the countering of skill and labour shortages; they also include programmes to identify and oppose biases in job evaluation procedures, pay systems and in other organizational practices concerning selection, recruitment, career ladders, and job assignment.

Most of the countries with the longest traditions of de-segregation policies – Denmark, Germany, Finland, Iceland and The Netherlands - show willingness to address the ‘early in life’ roots of segregation by investing in ‘motivational events’ or in educational programmes designed to positively encourage ‘atypical’ choices among young boys and girls, and to promote new role models. While similar initiatives in the past were actually one-sided as they primarily encouraged girls to enter male areas of work or take up male models, recent initiatives also purport to encourage boys to enter female areas of work like teaching or caring. An additional difference with the past is that some of these initiatives directly involve private firms. Good examples include the parallel information campaigns labelled *Girls' Day* and *New Pathways for Boys* in Germany, educational events like the *Strong Women – Complete Men*, the *Women's Occupations – Men's Occupations* or the *Father's Day* in Liechtenstein and Switzerland.

At European level, training remains the most popular policy option to counter segregation. Female and male employees participate in vocational training course on a fairly equal basis, although women receive, on average, 10% less in hours of training. However, 10 member states are reported to have recently implemented governmental training programmes specifically devoted to counter segregation - Austria, Belgium, Finland, France, Germany, Greece, Norway, Portugal, Sweden, and the UK. The total number of countries with targeted training initiatives is probably larger because training programmes are known to have low visibility, especially in those countries where the primary responsibility for training rests with private firms or educational institutions.

Unlike for training, few countries have a tradition in job evaluation that can be used to redress the undervaluation of women's jobs. Among them are Belgium, Germany, the Netherlands, the UK, Finland and Norway. Belgium has suspended experimentation, following unsuccessful attempts in the past, while it is still too early to assess the results of a fresh initiative in Germany directed at the public sector. Specific software has been developed in the Netherlands and Norway to help companies (and individuals) check whether actual wages comply with gender-neutral job evaluation procedures, but there may be limitations to the effectiveness of these tools.

Certification can also be used to fight the poor visibility, and thus undervaluation, of ‘female’ skills. However, only two initiatives in this sense are reported, respectively for home care

workers in France and for women returners in Liechtenstein. Provisions to address biases in organizational practices other than job evaluation or certification of skill are also rare.

The Norwegian success story for quotas in company boards has revitalized interest in such positive actions since 2004. This success has prompted the introduction of quotas elsewhere - Portugal, Greece, Austria and, possibly, the Netherlands - but the scope and the expected efficacy are far more limited.

Effectiveness is the ultimate test for policies, but the provisions implemented to redress segregation do not always pass this test because of poor design or poor implementation. As a general rule, segregation policies suffer from poor coordination, targeting, monitoring and follow up. The picture that is offered by the national reports is, at its very best, that of a wealth of initiatives still in search of an effective, coordinated strategy. This is also the conclusion of an investigation conducted by The Trade and Industry Committee for the UK. The scope and resilience of the phenomenon has not facilitated co-ordinated action, but a lack of strong policy motivation is certainly to blame.

Some policies fare better than others. Not training, which attracts two important criticisms. The first is that general training provisions have reinforced segregation, while specific provisions asked women, rarely men, to change, often encouraging the former to enter areas that men were quitting in search for better opportunities – e.g. manual, technical work in manufacturing. In the past, this lop-sided approach to training may have been partly justified by the fact that women were still a labour reserve in many countries, and labour or skill shortages arose primarily in male-dominated occupations. With 10 member countries near or above the seventy percent mark in female participation, coupled with the fast growth of feminized services and care occupations this is no longer justified.

In order for men to be encouraged to enter female areas or work and taught to value traditional feminine skills, it is important to invest more in motivational events, media and educational campaigns since early ages. There are historical examples of dramatic change in gender stereotypes in response to massive public campaigns, e.g. during the World War II.

However, pay is a strong incentive to overcome stereotypes, and evidence from case studies strongly supports the contention that the most effective way to attract men to female areas of work is to find ways to raise the pay. Undervaluation of women's work is far more difficult to tackle directly and, as seen, is of primary concern among low pay workers. The important and common finding in two countries conducting specific investigations on potential biases of job evaluation schemes - the Netherlands and Finland – is that job evaluation systems themselves are not the cause of gender pay differences; rather incorrect implementation of these systems is to blame. This calls for monitoring rather than re-designing such systems.

Certifying skill and re-designing career ladders in feminised, poorly paid areas of work such as caring may also contribute to fight undervaluation, although there is still not enough evidence for sound assessment. However, any attempt to fight undervaluation is bound to fail if it ignores the issue of migration. As exemplified by the experience of migrant workers in elderly care in Italy, Greece or Spain, resorting to cheap migrants' labour can interfere with attempts to challenge occupational segregation or undervaluation of care jobs.

In high paid, professional jobs re-segregation within lower paid niches and/or glass ceiling barriers are the key concerns. In this case a definite shift of focus towards organizational practices and away from supply side explanations is promising. Standardized, transparent

procedures for selection, hiring and promotion have proven to reduce bias against women. In the wake of the latest Norwegian examples quotas should be reconsidered for decision-making positions.

Gender based employment segregation is still widespread. Not all of it heightens disparities in pay or job quality between men and women, but some of it does, and the extent to which this occurs depends significantly on the prevailing institutions and culture. Thus, any successful attempt to address segregation ought to rely on policies that define clear targets and that are country specific to an extent. However a common set of principles for an effective policy approach to segregation has emerged from past policy experience of the Member Countries as well as from current research.

At the analysis stage, the quantitative indications that indices of segregation afford on the level and change in segregation should be used with caution, since a trade-off between decreasing segregation and increasing female employment may arise in the short and medium term.

Concerning the choice of policies, the latest research suggests three main priorities. First, reconciliation provisions should be given a central place since choice of working hours is still important for the occupations that men and women enter. Second, the policy focus should be shifted from individual gender differences on the supply side to the way organizations work and, in particular, to persisting biases in organizational practices for selection, hiring and promotion, skill recognition, structuring of career tracks, job and skill evaluation. Third, stereotypes should be fought by pursuing change in the attitudes, choices and actual competences of men, not only those of women.

Current or foreseen skill and labour shortages in male and female dominated employment areas add reasons to de-segregation. However, this new policy objective requires an integrated approach that, while relying on training also invests in educational programmes and media initiatives that engage with attitudes early in life.

Two broader policy issues are important for de-segregation, low pay and immigration. Any attempt to rebalance men's and women's representation at the bottom end of the employment and pay pyramid will be stifled if low pay is not addressed or if potential conflicts and synergies between de-segregation and reliance on migrant workers are not evaluated.

Finally, it is especially important to monitor initiatives and ensure follow up in programmes addressing segregation, since many initiatives in the past failed for not doing so. In view of the current fragmentation of programmes it is equally important to ensure effective coordination among the different initiatives.

Introduction

In a long term perspective there is perhaps no better way to assess how the position of women in employment vis-à-vis men has evolved in industrialized countries than to analyze change in employment segregation by gender and in the gender wage gap. This report concentrates on employment segregation, updates previous reports on this subject (Rubery and Fagan 1993; Emerek et al. 2002), expands analysis to the new Member States, and incorporates the insights from recent research.

The aim of the study is to analyze gender segregation in the European Labour Market at both the sectoral and occupational levels. It should provide a comparative analysis of the situation across the EU Member States, examine the root causes of segregation, its main consequences, and possible policy responses, such as measures for de-segregation or job evaluation practices to redress imbalances in the current valuation of women's and men's jobs.

Important objectives of the European Employment strategy include improving job quality, reducing gender segregation, reducing segmentation in the labour market (notably through flexicurity policies), and tackling the gender pay gap. The recent communication of the European Commission on the gender pay gap makes explicit reference to the persistence of the latter in relation to enduring occupational and sectoral segregation. The new version of the Employment Guidelines reiterates the link between the gender pay gap and segregation as follows: *'The gender pay gap should be reduced. Particular attention should be given to the low level of wages in professions and sectors which tend to be dominated by women and to the reasons which lead to reduced earnings in professions and sectors in which women become more prominent.'* (EC 2008: p.31).

Whilst the European Employment Strategy identifies reducing the gender wage gap as an objective in its own right, addressing gender segregation in employment is potentially relevant to additional objectives, and specifically to reducing skill shortages in the EU countries and making use of the entire labour force potential. This gives cogency to the idea of incorporating de-segregation into national strategies of lifelong learning and training.

Given the European Employment Strategy's open recognition of the desirability of reducing the segmentation between groups of workers that differ systematically in terms of duration and stability of the contractual relation (e.g. fixed-term versus standard, indefinite contracts), conditions of work (e.g. unsocial versus normal working) or of entitlement to social security benefits, it is also advisable to explore the link between segmentation thus defined and gender-based segregation in employment.

The report is divided into two parts. The first chapter in Part One examines levels and change in overall segregation in European countries. The second chapter reviews the most important factors that impinge on segregation. The third chapter focuses on the three main implications of segregation, namely undervaluation of women's work, confinement in 'low quality' jobs, and skill shortages. The fourth chapter reviews and discusses policies, including training. Part Two summarizes the evidence from case study research that has been collected at national level for 10 professional groups and is used for discussion throughout the report. The overall summary concludes the report.

PART I. GENDER EMPLOYMENT SEGREGATION IN EUROPE

1. Persistence and change in segregation within Europe

1.1. Definitions

‘Employment segregation’ is a rather dramatic expression for the gendered division of labour in paid employment. Early in the 1960s, when the expression was introduced into the academic debate, its dramatic overtones were justified on the grounds that the division of labour exhibited radical separation between men’s and women’s work. It was also justified by the presumption that ‘different’ often implied ‘unequal’: in those days women often earned little more than half of what men did. Women’s earnings now fare much better, and gendered divisions in employment have changed or weakened, but the resilience they show motivates investigation of the extent to which they continue to sustain inequality.

Because the phenomenon is so pervasive, distinctions have multiplied in order to facilitate analysis: occupational versus sectoral segregation, horizontal versus vertical, vertical versus hierarchical. All the types of gender-based segregation will be considered in this report, although occupational segregation will receive closest attention, thereby reflecting the balance in the literature.

The distinction among horizontal, vertical and hierarchical segregation is less straightforward than that between occupational and sectoral segregation, and it has evolved over the years. In the early debate, vertical segregation referred to the under (over) representation of a clearly identifiable group of workers in occupations or sectors at the top of an ordering based on ‘desirable’ attributes – income, prestige, job stability etc. Horizontal segregation was understood as under (over) representation of that particular group in occupations or sectors not ordered by any criterion, and it was often referred to as segregation *tout court*. Under-representation at the top of occupation-specific ladders was subsumed under the heading of ‘vertical segregation’, whereas it is now more commonly termed ‘hierarchical segregation’. However, some semantic disagreement persists in the literature, and in this same report we shall sometimes use ‘vertical’ and ‘horizontal’ in their broader senses.

This chapter deals with overall segregation in the European Union while quantitative analysis of vertical segregation is postponed to chapter 3, and descriptive analysis of both vertical and hierarchical segregation is carried out for the occupations surveyed in Part II. The main questions addressed in this chapter concern levels and change in segregation in the European Union over the past 15 years. The next section introduces measures of segregation, and the following one illustrates the findings based on these measures. The final section investigates the relationship between growth in female employment and change in segregation, enquiring whether a trade-off exists in the medium term between pursuing increasing female employment and decreasing segregation.

1.2. Measures

Employment segregation by sex persists at high levels in Europe. *The Life of Men and Women in Europe* (Eurostat 2008) comments on existing gender differences in occupations as follows: ‘... the degree of concentration in a limited number of occupations is much higher among women than among men. In 2005, almost 36% of women in work in the Union were employed in just six of the 130 standard occupational categories (ISCO-88 3-digit) whereas the top six occupations for men accounted for just over 25% of the total in work’. Table 1 reports 6 occupations with the

largest number of men and women, and none of them overlap. Shop salespersons and demonstrators, the top occupational category for women employing 8% of those in work, accounted for under 3% of men in employment. The next three largest categories for women – ‘domestic helpers’, ‘personal care workers’ and ‘other office clerks’ – between them employed a further 19% of women, but only 3% of men (Eurostat 2008, p.59).

Table 1. The top six occupations for women and men in Europe, 2005

Women		Men	
Code	Description	Code	Description
522	Shop salesperson and demonstrators	832	Motor vehicle drivers
913	Domestic & related helpers, cleaners & launderers	712	Building frame & related trade workers
513	Personal care and related workers	131	Managers of small enterprises
419	Other office clerks	713	Building finishers & related trades workers
343	Administrative associate professionals	311	Physical & engineering science technicians
512	Housekeeping & restaurant services workers	723	Machinery mechanics & fitters

Note: ISCO-88 occupational codes (EU-25)

Source: Eurostat 2008, p.59

The highest concentration of women’s employment is found in Cyprus and Romania, where in each case over 50% of the women employed worked in the six largest occupational groups in 2005. In Cyprus, around 19% of women in employment worked as ‘domestic and related helpers, cleaners and launderers’, reflecting the importance of employment in hotels and private households in that country; and in Romania, just over 27% worked as ‘crop and animal producers’, reflecting the importance of agriculture. The lowest concentration was in Italy and Latvia, where the top six occupations accounted for 32–33% of all women in work.

Indexes are the most commonly used summary measures of segregation. Bridges, who has recently proposed a new index, has spoken of ‘the battle of indexes showing signs of fatigue’ (Bridges 2003: p.564) to refer to the voluminous and still growing literature on the measurement of segregation. It is generally accepted that no single index is fully satisfactory, and that different indexes are appropriate for different purposes. In this chapter we make use of the following three measures (for details see Box B.1 of the Appendix):

- the standardised or Karmel and MacLachlan Index (IP)
- the Duncan and Duncan Index of Dissimilarity (ID)
- a tripartite classification of female-dominated, mixed and male-dominated occupations or sectors.

The Karmel and MacLachlan (1988) index (IP) is the reference index for the present report because it was adopted to construct indicators EO3 and EO4 in order to measure and monitor gender equality within the European employment strategy. Although the index has the advantage of taking direct account of the female share of employment, this may turn into a disadvantage when comparing values over time, because the level of segregation may increase solely because women’s employment has increased.¹

The Index of Dissimilarity (ID) is arguably the most widely used for international comparisons because it was proposed as early as 1955 (Duncan and Duncan 1955). It measures the sum of the absolute difference in the distribution of female and male employment across occupations or sectors. Like the IP index, it assumes that segregation implies a different distribution of women and men across occupations or sectors: the less equal the distribution, the higher the level of segregation. The value of the ID index also depends on the rate of female employment, but it does so only indirectly via changes in the occupational structure that accompany increases or

¹ This holds as long as the share for women is below that for men.

decreases in the proportion of women in the workforce. However, we shall carry out a simple decomposition to separate change in this index due the occupational structure from change in the gender composition within occupations/sectors.

Hakim (1993) proposed that female-dominated, male-dominated and mixed occupations can be identified by adding or subtracting 15 decimal points from the overall share of female employment. Suppose this share is 40%: occupations or sectors with 25% women or less are considered male-dominated, those with 55% or more women are female-dominated, and the remainder are mixed. The measures proposed by Hakim are the shares of female, mixed and male-dominated occupations thus defined. Clearly, this is not a proper index, yet it is a rather informative way to track the actual profile of segregation and its change over time.

Indexes other than the IP will be used to verify the extent to which IP-based findings on levels and trends of overall segregation are robust. But they will also serve specific purposes: the ID index will be used to assess how far change is attributable to the evolution of the occupational structure versus de-segregation within occupations. Hakim's measure will be employed to assess how far change has affected female- versus male-dominated occupations. The widely known Gini index will be used to measure overall segregation and the relative importance of vertical versus horizontal segregation within it (see Box B.2 in the Appendix).

Some methodological issues should be addressed before the findings are illustrated. First, segregation is common to all countries, but the inequalities or asymmetries from which it originates are to some extent country-specific: they depend on the country's labour market, culture, and broader institutional context. Thus, measuring segregation for the EU as a whole (or subgroups of countries within it) makes accounting sense because, for example, knowing that the IP index for EU27 countries has decreased or increased is relevant information. However, satisfactory analysis of why this is so must rely on the study of individual labour markets. A further issue is that segregation is best measured and analyzed for occupations rather than for sectors. Employment decisions are taken primarily with jobs in mind, not sectors, and any sector tends to comprise very different types of jobs.

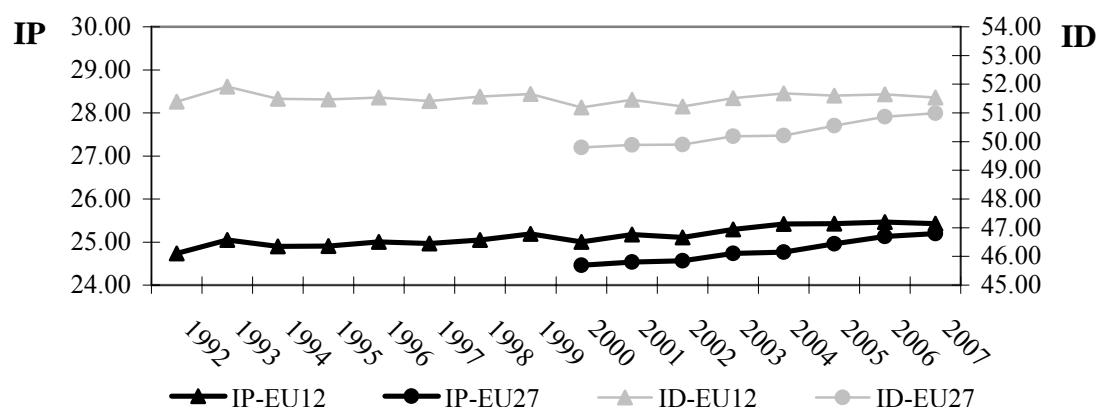
For the above reasons, the analysis will focus largely, though not exclusively, on occupations, and when EU totals are reported, primary attention will be paid to cross-country comparisons. In order to facilitate such comparison we employ the simplest of tripartite ordinal scales: 'low' 'middle' and 'high'. The high (low) group comprises countries scoring above (below) the average value plus (minus) one mean absolute deviation (MAD); the middle group is the residual.

The main data source for measurement of segregation are two series from the European Labour Force Survey (LFS): employment by occupations (ISCO-88 3-digit) and by sectors (NACE 2-digit). Both series are available for different intervals for different countries, starting from 1992.

1.3. Extent of segregation and change over the past fifteen years

There has been uneven and contrasting change in overall segregation over the past fifteen years. If we take the EU12 group, for which the longest data series is available, both the IP and the ID indexes have hardly changed since 1992. A slight upward movement is detectable for the EU as a whole over the current decade: the EU27 value for the IP went up from 24.5 to 25.2 between 2000-2007, this weakly rising trend being confirmed by the Index of Dissimilarity (Figure 1).

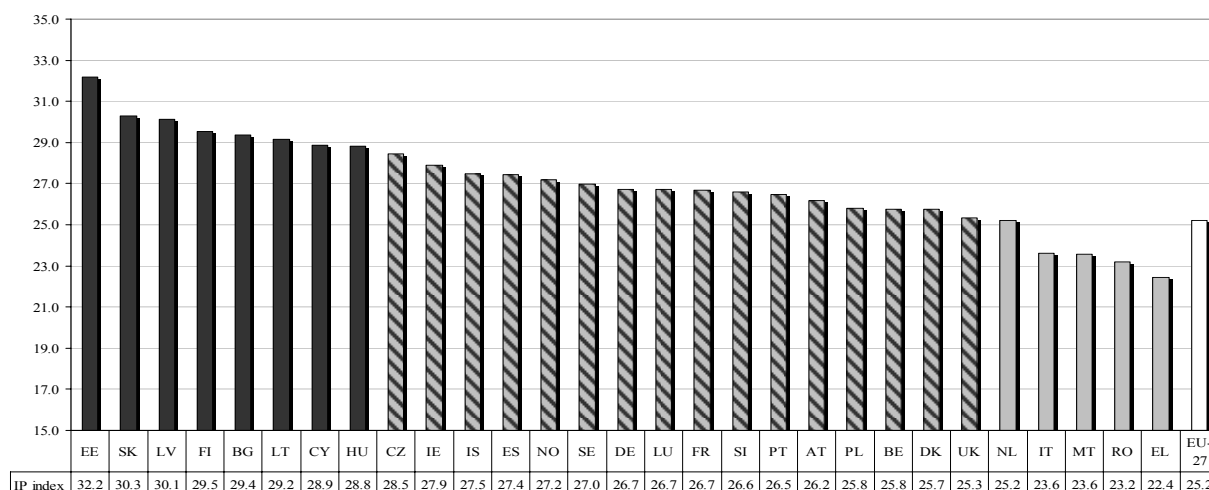
Figure 1. Gender occupational segregation in the EU, 1992-2007



Source: own calculations using LFS (3-digit)

This aggregate impression of overall stability is misleading, however, because it hides rather different levels and trends at country level. Figure 2 orders countries on the basis of the 2007 IP value for occupational segregation. Countries belonging to the ‘low’ scoring group are Greece, Romania, Malta, Italy and the Netherlands, with a clear over-representation of the Mediterranean group. The group of ‘high’ segregation countries includes Estonia, Slovakia, Latvia, Finland, Bulgaria, Lithuania, Cyprus, and Hungary, all of them post-socialist countries with the exception of Cyprus and Finland. The top and bottom countries in this ranking are markedly far apart: out of a theoretical maximum of 50%. Estonia, the highest segregated country, records a value of 32.2% for the IP against 22.4% for Greece, the lowest segregated one.²

Figure 2. Gender occupational segregation in Europe, 2007



Note: countries are grouped by level of the IP-index into high (black bar), medium (patterned bar) and low (grey bar). High (low) segregation countries score above (below) the EU average + (–) the Mean Absolute deviation,

Source: own calculations using LFS (ISCO-88 3-digit)

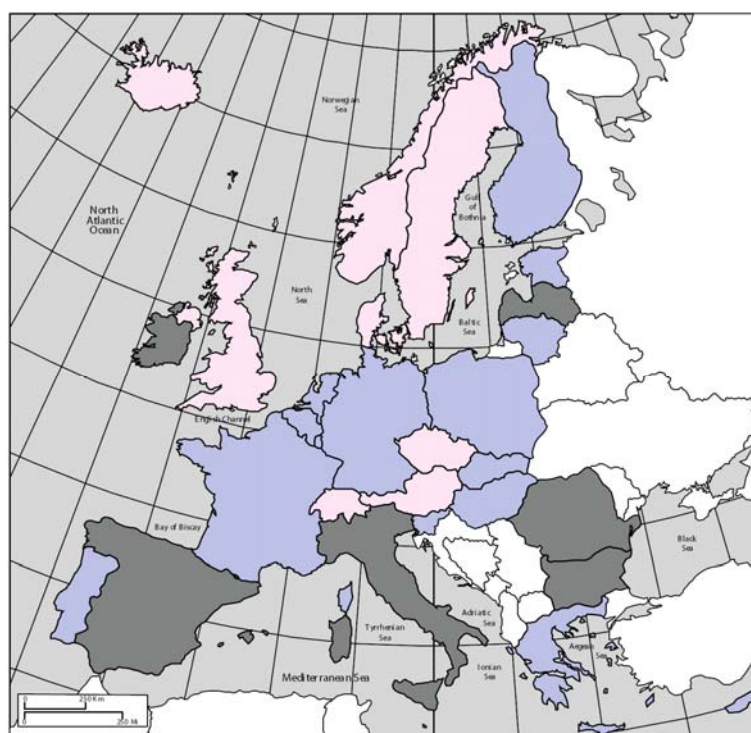
A commonplace feature of employment segregation in Europe before enlargement was the paradox whereby Scandinavian countries recorded some of the highest levels of segregation, whilst the Mediterranean countries exhibited surprisingly low levels. This picture has changed over the past decade, not only because of enlargement but also thanks to some convergence

² Practically the same results are obtained when employing the ID index: suffice it to say that the Pearson correlation coefficient for the ranking yielded by the IP and the ID for 2007 is 0.996, i.e. nearly 100.

across countries. Nordic and Scandinavian countries have recorded relatively fast de-segregation, whereas most Mediterranean countries, together with a few Eastern European ones, have actually experienced an increase in segregation.

Figure 3 documents the pattern of change by assigning different colours to the three groups in our ordinal scale: countries increasing by more than 1.72% (the mean value plus the MAD); countries decreasing by more than 1.36% (the mean value minus the MAD); and essentially stable countries with values intermediate between the two extreme groups. Rapidly de-segregating countries are Sweden, Norway, Denmark, the UK, Austria, Czech Republic and Iceland, whereas re-segregating countries are Romania, Bulgaria, Italy, Ireland, Latvia, Spain.

Figure 3. Change in gender occupational segregation in Europe, 1997-2007



Note: The logic by which countries are grouped is the same as in Figure 2 but applied to change in the IP-index:

■ within 0.176 ± 1.54 ; ■ larger increase; ■ larger decrease

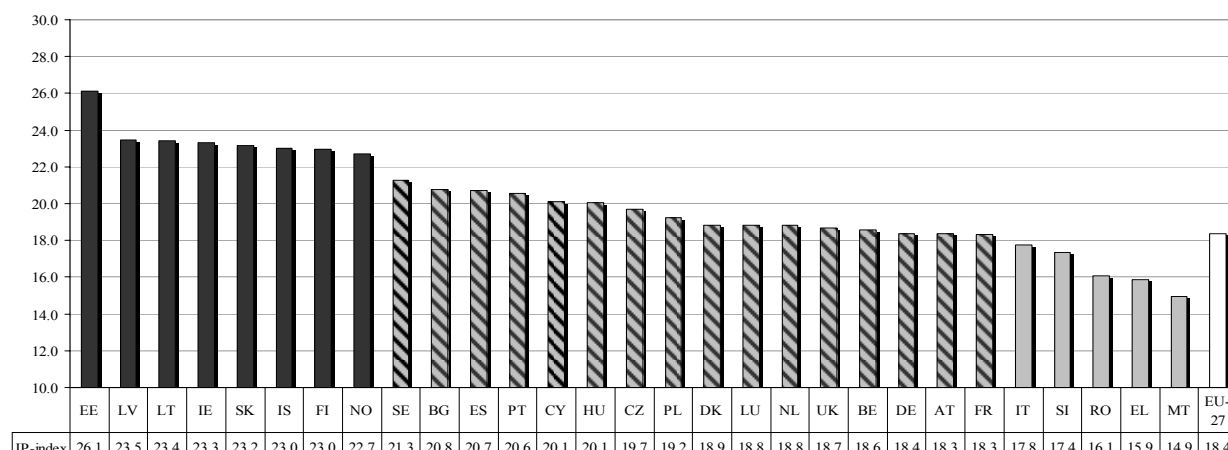
Source: own calculations using LFS (ISCO 3-digit), earliest and latest years as in Table A.1 in the Appendix

Analysis of trends using Hakim's classification of occupations into male-dominated, female-dominated and mixed adds some flesh to the statistical bones. In line with expectations, between 1997 and 2007 mixed occupations increased in all the countries where segregation indexes declined, and conversely. Four exceptions are the Czech Republic, Finland and France - where the past decade witnessed a remarkable increase in female-dominated occupations – and Germany, where the increase mainly affected male-dominated occupations. Across countries, change was more pronounced for male-dominated occupations, whose share decreased proportionately more (see Table A.1 in the Appendix).

Looking at sectoral rather than occupational segregation makes some, though limited, differences to the above findings. The overall IP value for EU27 is lower than the corresponding figure for occupational segregation: 18.4% in 2007 as opposed to 25.2%. This drop in the value of the index is considerable, but it is also to be expected on account of the lower number of sectors than occupations. The 2007 ranking by countries is depicted in Figure 4. Seven countries change group with respect to their ranking for occupational segregation, mainly from the 'high' to the

‘middle’ segregation group. However, the top four countries for occupational segregation are also found in the high sectoral segregation group, and conversely for the bottom four countries (see Table A.1 in the Appendix).

Figure 4. Gender sectoral segregation in Europe, 2007



Note: countries are grouped, according to the level of the IP-index, into high/low-segregated, with the IP-index accordingly being higher/lower than Mean+MAD/Mean-MAD ($19.97+2.14$ / $19.97-2.14$); the residual is a middle group

Source: own calculations using LFS (NACE 2-digit)

Since 2001, sectoral segregation has displayed a somewhat more marked upward trend than has occupation segregation, with an overall increase for the EU27 of 1.2 percentage points(see Table A.1 in the Appendix). Only seven countries record a decrease. De-segregating countries include Austria, Portugal, Malta, Denmark, Sweden, the UK, the Netherlands and Slovenia, all of which except for Portugal having also experienced near stability or fast de-segregation of occupations. Overall, these findings are not inconsistent with those for occupational segregation, but they confirm that not much information is gained by considering sectors.

1.4. Segregation and female employment

Returning to occupational segregation, the change therein stems from variations in employment which impact on the structure of occupations, as well as from the re-balancing of male and female employment in each occupation. A simple decomposition of the ID index yields a structural component that captures the effect of change in the structure of occupations, a sex-ratio component that captures the effect of change in the gender balance within occupations, and a residual effect (see Box B.3 in the Appendix). The findings from this decomposition are summarized in Figure 5, where countries are ordered according to the level of change recorded by the ID index in the relevant period (the black line across bars). Figure 5a considers the longest interval in our data – 1992-2007 – and includes the oldest member countries. Figure 5b restricts the window of observation to between 1997 and 2007 in order to encompass a larger number of countries.³

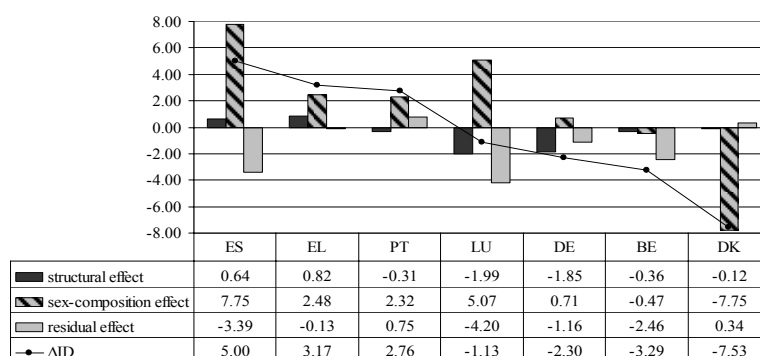
In figure 5.b, the structural and the sex-ratio components bear the same sign in the majority of countries: that is, both components contribute either to decreasing or to increasing segregation. However, Romania and the UK are two glaring exceptions, for in both countries a large structural component has worked in favour of more segregation whilst the gender balance within

³ We consider countries for which sufficiently comparable occupational series are available for two extreme years.

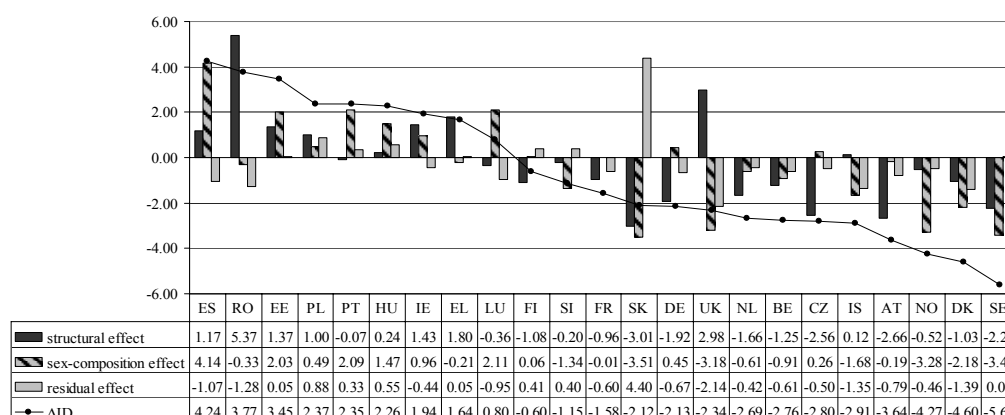
occupations has improved. Moreover, there is no clear indication that either component is dominant: in 11 out of 23 cases the structural component dominates the sex-ratio effect in absolute terms, but the opposite occurs in the remaining cases.

Figure 5. Components of the change in occupational segregation in Europe, 1992-2007

5a. 1992-2007



5b. 1997-2007



Note: in Figure 5b the change in ID is between the earliest and the latest years as in Table A.1 in the Appendix
Source: Own calculations using LFS (ISCO 3-digit)

For the five countries included in both Figures – 5a and 5b – the two sets of results can be used to compare behaviour over the short run – the past decade – and over a longer period – the past fifteen years. Over a shorter period of time the importance of the structural effects diminishes in favour of the sex-ratio effect. Take Denmark for example: between 1997 and 2007 the structural effect decreased segregation by 1 percentage points versus 2.2 points for the sex-ratio effect. Over the longer period, however, the structural effect practically disappeared while the sex ratio effect more than doubled.

Overall, these are indications that the structure of employment, i.e. where and to what extent overall employment grows, is more important for segregation in the short run, whilst the decisive factor in the long run is de-segregation within occupations. Put simply, it may be easier for women to enter where overall employment grows, sometimes inflating an already large female share and thereby increasing segregation. When the inflows are sufficiently large, however, some women also end up in niches of relatively male occupations from where they can subsequently branch out if they are sufficiently motivated by income and working conditions. This is consistent with the evidence from the case studies discussed in the second part of the report: for example, among doctors, where women initially crowded into a limited number of specialties from where they are now slowly branching out. The same case studies, however, indicate that

there is some asymmetry between well-paid and low-paid employment areas. Women are not always able to seize the opportunity of more jobs in well-paid occupations, as suggested by the de-feminization among computing professionals; whereas they seldom fail to do so in lower-paid and already-feminized occupations like care or cleaning.

A related but important question concerning the impact of employment growth on segregation is whether there is a trade-off in the short or medium run between increasing female employment and decreasing segregation. The pattern over the past century suggests that higher female employment eventually decreases segregation (Bettio 2008), but the opposite has sometimes been observed in the short or medium run or with cross-country comparison (Rubery et al. 1998; Emerek et. al. 2002; Gilles 2007). In the 1990s, in particular, a positive correlation between segregation and female employment was found for the EU15, and it was driven primarily by the contrast between high-segregation, high-employment countries like Sweden, Finland or Norway and low-segregation, low-employment countries like Italy or Greece (Bettio 2002).

In order to verify the strength of this correlation Table 2 reports the Pearson coefficient between the ID index for occupational segregation and the female employment rate.⁴ The calculations are repeated for levels and trends, over different groups of countries depending on the availability of data. The coefficient is positive and significant at the conventional 5% level when the 2007 rates of female employment are correlated with the ID values across the 29 countries surveyed in the LFS. It is equally positive and significant for the correlation between changes in the female rate and in the ID value over the past decade across the EU15 countries.

Table 2. The relation between occupational segregation and the female employment rate

Indicator	Female employment rate, 2007	Change in female employment rate, 1997-2007
Level of ID-index, 2007	42.01	-
Change in ID-index, 1997-2007	-	70.7 †
Level of IP-index, 2007	42.1	-
Change in IP-index, 1997-2007	-	78.2 †

Note: the measure applied is the Pearson correlation coefficient, always significant at 5%; † EU15

Source: own calculations using LFS (ISCO 3-digit) for occupations and ESTAT data for female employment rate

These findings are not entirely robust, however, and this may be due to the fact that the employment structure diminishes in importance in the longer term. For example, the coefficient drops below significance level if Norway and Iceland are removed from the first correlation, indicating that the results should be treated with some caution. Nevertheless, this positive association has been observed sufficiently often in the post-war period to require some explanation. The occupational and industrial structure have evolved to date in ways that have benefited female employment more than would have happened if there had been an even expansion of industrial demand: Rubery has found that this applies to nine European countries between 1982 and 1993 (Rubery et al. 1998: p.102). One underlying reason why growth has concentrated in female-dominated occupations is the marketization of household production, i.e. the process by which household-based activities (including care) are progressively brought to the market or in the public sector. Because of the strong sex-typing of these activities, externalization to the market or the public sector simultaneously frees female supplies and creates demand for paid female labour (Bettio 2002; Bettio and Plantenga 2008; Freeman and Shettkat 2005).

⁴ The ID is used in lieu of the IP in order to minimize a possible statistical bias. As noted earlier, the IP index depends directly on the female share of employment and may therefore increase even if no change occurs in the structure of employment or the sex-ratio within occupations. Such dependence is indirect for the ID and works via the structure of employment.

Summary

The above analysis is based on three measures of segregation, the Karmel and MacLachlan index, also employed to calculate official indicators EO3 and EO4, the index of Dissimilarity, and Hakim's criterion to categorize occupations as female-dominated, mixed and male-dominated. Occupational segregation has been prioritised after ascertaining that sectoral segregation yields a similar but less neatly defined picture. The main findings can be summarised as follows:

- For the EU as a whole the level of segregation as measured by the IP index is still relatively high, with a 25.3% value for occupational segregation and a value of 18.3% for sectoral segregation out of a maximum of 50%.
- Differences among countries are still wide, with a gap of about 10 percentage points in the IP index between the most and the least segregated countries. Whether occupational or sectoral segregation is considered, the same four countries belong to the high- and the low-segregated group, respectively. The four high-segregation countries are Estonia, Slovakia, Latvia and Finland, and the four low-segregation countries are Greece, Romania, Malta and Italy. The well-known opposition of the 1990s between high-segregation Nordic countries and low-segregation Mediterranean countries has given way to a similar opposition between (part of) the East and (part of) the Mediterranean.
- The indexes of occupational segregation for Europe as a whole - EU27 or EU15 - do not indicate significant change since 1992. However, a slight upward trend is detectable over the current decade.
- Aggregate trends in occupational segregation hide contrasting patterns at country level. Fast de-segregating countries are Austria, the Czech Republic, Denmark, Norway, Sweden and the UK, while re-segregating countries comprise Bulgaria, Ireland, Italy, Latvia, Romania and Spain.
- With the exception of a few countries, mixed occupations have increased over the past decade in all the countries where segregation indexes declined, and conversely. Across countries, change has been more pronounced for male-dominated occupations, whose share has decreased proportionately more.
- Differential growth of female employment partly accounts for differential change in occupational segregation. Decomposition of the ID index into a structural component, a sex ratio, and a residual component suggests that in the short term both the structure of occupation and change in the sex composition within occupations contribute to the overall change in segregation, often but not always in the same direction. Over longer periods of time, change within occupations tends to become the dominant component.
- This latter finding is consistent with the evidence from the case studies reviewed later in the report which suggests that it may be easier for women to enter where overall employment grows, sometimes inflating an already large female share. Once women have made inroads into male areas, they may branch out if they encounter low barriers or if they are sufficiently motivated by income and working conditions.
- Significant increases in female employment may therefore raise the level of segregation on a more or less temporary basis. This is further confirmed by evidence of a positive cross-country correlation between the female employment rate and levels of segregation. The overall indication is that a trade-off may exist in the short or medium run between the objective of raising women's employment and that of favouring de-segregation.

2. Root causes of segregation

The central question addressed in this chapter is how and why employment segregation comes about and changes over the years. The first sections of the chapter concentrate on the main factors discussed in the literature and the related findings from empirical studies. The latter part of the chapter introduces evidence from the case studies surveyed in Part II of this report.

2.1. *Old and new explanations*

The debate on the root causes of segregation held centre stage in economics, sociology, demography and industrial relations during the 1970s and 1980s. Subsequent theoretical developments mainly refined or revisited earlier explanations. Empirical investigations continue to flourish, and several recent reviews of the literature indicate that there is still lively academic interest in segregation (for reviews of theoretical analysis and empirical findings see Anker 1997; Bielby and Reskin 2005; Blau *et al.* 2006: chapters 5–7; Bettio 2008; for methodological reviews on the measurement of segregation see Bridges 2003 and Watts 1998).

After decades of debate, a battle of indexes, and abundant empirical investigations, there are two statements that would probably find most scholars in agreement, even mainstream economists: firstly that segregation may indeed imply pay discrimination, and secondly that there can be no single factor explanation for it. A number of key factors can be singled out from the voluminous literature on the subject and grouped as follows:

- Comparative advantages;
- Under-investment;
- Preferences and prejudices;
- Socialization and stereotypes;
- Entry barriers and organizational practices;
- Differential income roles.

Comparative advantages. Biology is perhaps the oldest explanation for the gendered division of labour. In the not too distant past of mass manufacturing, the emphasis was on a variety of physical differences like muscular power versus resilience or dexterity. As technological progress evened out the role of physical characteristics, attention shifted to the brain or how the mind works.

A frequently cited study of the 1970s (Maccoby and Jacking 1974) found that whilst women show a high degree of verbal competence, men are better at solving numerical and spatial problems. England *et al.* (1982) gave support to this idea with their finding that female employment was lower in more mechanized jobs requiring spatial abilities. Systematic over-representation of women in less mechanized, and hence more labour-intensive jobs, is a key finding of other studies of the 1980s (Bettio 1988; West 1982), but it has also been given a different interpretation as shall be discussed below.

Recently, the debate has been revived by the PISA results on the comparative performance of boys and girls in mathematics and by the controversy surrounding the statement by the principal of Harvard – Laurence Summers (2005) – that women have less aptitude for mathematics than men. However, Guiso *et al.* (2008) found that, across countries, the ability score in mathematics for women is negatively correlated with measures of gender gap in status and other indexes of gender inequality.

Given modern technology, therefore, comparative biological advantages may continue to play a role in a very limited number of occupations where an above-average competence in mathematics or language (as well as other subjects) matters for productivity; but even this limited role may not be due to biology alone.

Under-investment. Biology is also the point of departure of the human capital theory. Here, an innate comparative advantage in domestic production accounts for under-investment in education or training on the part of women, thus confining them to poorly-skilled and poorly-paid areas of employment (Mincer 1974; Heckman 1979). However, the fact that in most European countries women are outperforming men up to the first level of tertiary education (Eurostat 2008: Tab. A.20) makes the human capital explanation somewhat obsolete with respect to formal education. The same holds for later and more sophisticated versions of this argument, such as that put forward by Coate and Loury (1993), which claims that women choose to under-invest in education because they anticipate that employers will be prejudiced against them and will assign them to jobs which do not require investment.

Segregation by field of study in favour of ‘soft’ disciplines has also been rationalized within the human capital approach, although some believe that stereotypes are primarily to blame. Women in higher education, the argument runs, opt for soft subjects either because they do not think of education as a job-related investment, or because the obsolescence of the human capital that they acquire in these subjects is lower in case of work discontinuity, or less costly. Although gender differences persist, the historical reality is that de-segregation in higher education has proceeded at a relatively fast pace among younger cohorts of students, with the exception of mathematics and computer sciences (Eurostat 2008). In fact, the statistical evidence on the strength of the link between segregation in occupation and in employment is mixed. Valentova et al. (2007) found that segregation by subject explains little of the current cross-country pattern of overall segregation. A significant correlation between change in the segregation of education and in employment is detectable for the EU15 over the past fifteen years, not for Central and Eastern member countries (Box 1). Such mixed evidence is consistent with the latest finding by *Employment in Europe* that there is a close connection between field of study and job requirements for only a minority of jobs (EIE 2008).

Under-investment may also concern on-the-job training when job- or firm-specific skills are important. On average, women receive less hours of on-the-job training than men do (see Table A.2 in the Appendix). However, employers’ decisions and collective bargaining are more likely to account for under-training than women’s own choice to under-invest. Moreover, if it were true that, anticipating career breaks, women chose occupations where less firm-specific investment was needed, starting salaries would be higher in female-dominated occupations because there would be less need to offset training costs (England et al. 2000). This is hardly a common finding!

Preferences. Women may have a clear preference for certain occupations, and likewise for men. Mainstream economists assume that preferences for jobs and job characteristics are defined prior to entry into education or the labour market, and they theorize that people are willing to pay for their own preferences if necessary (Rosen 1986). According to the theory of compensating wage differentials, if, say, women are found in caring jobs and are paid less than men for comparable effort and skill, the ensuing wage gap is interpreted as the pay that women are willing to forgo in order to enjoy the ‘caring’ aspect of their jobs. However, in spite of the assumption by economists of well-defined and stable preferences, ascertaining what people really prefer may not be simple. Because of cognitive dissonance, preferences may ‘adapt’ to outcomes once a

choice has been made, or if there is no choice. Hence, proving that women truly prefer female-dominated jobs even if they are paid less is problematic and comes dangerously close to being tautological. In fact, we are not aware of attempts to directly validate the compensating differential argument in relation to occupational segregation.

...and prejudices. Preferences may include ‘prejudices’, because ‘*de gustibus non est disputandum*’ (Becker 1957). If some male employers are prejudiced, Becker (1957) argues, but there are enough non-prejudiced employers willing to operate with an all-female or prevalently female work force, then segregation may actually protect women against the risk of discrimination (and lower pay). It is perhaps not surprising that this historically counter-intuitive hypothesis derived from Becker’s theory of discrimination has been subject to little empirical testing, and with controversial results at best (Masters 1975; Reich 1981).

Goldin (2002) has recently revisited Becker’s line of argument turning it into a more sophisticated ‘pollution’ hypothesis. Because women are late-comers to the labour market, the argument runs, there is more uncertainty about their attributes and capacities. When they first enter male-dominated occupations where certain capacities are sources of higher pay and prestige – as physical strength used to be in the past – this is taken to imply that the job may no longer need such capacities. Fearing ‘pollution’, male workers oppose women’s entry and (non-prejudiced) employers respond by creating two occupations, which are sex-typed ‘female’ and ‘male’ respectively and paid equally in order to avoid male opposition and be able to hire women. Nevertheless, the solution of creating two separate occupations takes time, and in the intervening period women may be crowded into occupations that require less of the highly paid capacities and command lower pay. Thus instances of discrimination may occur alongside processes of ‘neutral’ segregation. Goldin cites a wealth of historical examples in support of her account. Her explanation has the advantage of providing theoretical foundations for the idea that not all segregation is necessarily ‘bad’. However the reasoning boils down to the idea that a resilient phenomenon like segregation ultimately depends on the fact that not enough knowledge has been gained about women’s productive potential. Some may find this unconvincing.

Socialization and stereotypes. In contrast to economists, sociologists believe that preferences are socially constructed via the labour market, as well as via the family and other social institutions. In their view preferences are bound to reflect sex-based stereotypes⁵:

‘All societies categorize members by their sex. Personality traits, preferences and potential are inferred from individual’s biological sex. These sex-based inferences are sex-stereotypes. Stereotypes matter because they are generally known and prescribe appropriate behaviour’ Reskin and Bielby (2005: p. 73)

In the labour market, stereotypes can also be used as proxies for productivity when the true characteristics of the individual workers are not fully known: for example, women are ‘better’ at teaching, men at driving, women are less reliable because of discontinuity hence less productive, and so on. This may give rise to statistical discrimination i.e. whereby all women are assumed to be discontinuous at work even if only some of them are (Phelps 1972).

Whether stereotypes are used as surrogate information or in order to prescribe behaviour, they are ubiquitous, and they are attributed considerable importance for segregation by sociologists: see, among others, Harman and Reskin 1986 for earlier work, and Reskin and Bielby (2005) for

⁵ In their identity theory Akerlof and Kranton (2000) introduced the notion of *normative stereotypes* among economists using formal language.

more recent findings. Especially telling are examples of the explicit and intentional construction of stereotypes like that of ‘Rosie the Riveter’. In order to deal with the shortage of men in factories during the Second World War, the media first created the female ‘Riveter’ – a woman also able to do men’s work – and then demolished it once the war was over (Honey 1984).

As this examples clarifies, history is needed to explain how a particular occupation has come to be associated with one or other sex. In other words, explanations based on stereotypes are either very general or they are detailed but ex-post. This shortcoming also applies to Akerlof and Kranton’s (2000) attempt to translate the notion of normative stereotypes into the formal language of economists and use it to ‘model’ segregation. Their argument is couched in terms of the costs of breaking stereotypes against the possible advantages of doing so; but it leaves unexplained how and why specific stereotypes have come into existence.

At practical policy level, however, the message is clear: implementing processes that use education or the media to remove the association between given occupations and womanhood can go a long way towards de-segregation. Akerlof and Kranton, for example, credit the American feminist movement with having weakened this association in the 1970s, when indexes of segregation recorded their first major decrease since early industrialization.

Barriers to entry and organizational practices. Stereotypes gained importance as mechanisms of segregation with the progressive demolition of the formal barriers preventing women from entering specific occupations. Barriers had been imposed by legislation but also by unionized workers in the guise of restrictive practices (Humphries 1977; Rubery 1978; Hartman 1979). In the most developed market economies, legal bans and restrictions may now be regarded as things of the past, but some of that past is sufficiently recent for it to exert influence still today. For example, women were allowed to enter the judiciary only as late as 1963 in Italy, and the first female judge was appointed in 1947 in the Netherlands. Moreover, the lifting of a legal ban does not guarantee that covert opposition will disappear. May (2008) maintains that some of the arguments used in the past to justify formal barriers to entry to higher education are still used today to justify segregation of school/university curricula in the USA.

Covert and milder forms of barriers may be found in organizational practices that bias selection and promotion for women by using stereotypes (Kanter 1977). Whilst discrimination at hiring may be less common today because of anti-discriminatory legislation, personnel practices are still largely discretionary. For example, gender is often taken into account when assigning jobs. In the well-known case of Sears versus Roebuck, one of the largest department stores in the USA, the American Equal Employment Opportunity Commission claimed that the assignment of men to the large household appliances department constituted discrimination against women. This was because sellers of appliances were paid commissions proportional to the value of their sales and earned higher salaries (Milkman 1986). The case was lost, and men and women continue to be assigned to different jobs within department stores, in the USA and elsewhere.

The dual labour market and the internal labour market hypotheses that Barron and Norris (1976) and Doeringer and Piore (1971) proposed in the 1970s postulate systematic differences in payment systems, career ladders and working conditions in male and female jobs. The reasons may be actual or presumed discontinuity on the part of women, or plain discrimination. At least some of these differences still persist, because it has been found that predominantly male jobs still have longer ladders. In female-dominated jobs, by contrast, the rungs on ladders are closer together and therefore yield less advancement at each promotion (Peterson and Saporta 2004; Barnett, Barron and Stuart 2000).

A different example of potentially biased organizational practices are mechanisms of cooptation for hiring or promotion, which tend to favour men because women have poorer networking resources. In general, research has found that the more bureaucratic, formal and transparent personnel practices are, the weaker is the association between jobs and workers' sex (Reskin and McBrier 2000). Jobs in large firms or in the public sector tend to be more bureaucratically regulated. Thus different payment structures or different types of employer (large/small, private/public) concur to shape the pattern of segregation (Grimshaw and Rubery 2007).

Income and care roles. Based on detailed case study analysis, Bettio (1988) argues that occupational segregation often confines women to lower value added, lower paid jobs. On the one hand, women have a weaker bargaining position, not so much because of differential productivity but primarily because of the unequal distribution of care work and commitment to securing monetary income for the family. Even when women equally share the commitment to securing money, they are assumed not to 'need' as much (the 'pin money' stereotype). On the other hand, different jobs have different value added for employers depending on the location of the job in the production structure, not on the productivity or training of the worker. For example, labour-intensive jobs tend to yield less value added per hour worked and have often been feminised (West 1982; Bettio 1988: chapter 8). Given widespread assumptions about gendered income and care roles, employers find it easier to match men with greater value added jobs for which they are willing to pay more. An inevitable offshoot of this 'matching' is the under-valuation and under-recognition of the specific skills required by women's jobs (Elson and Pearson 1981; England 2004).

The unequal care burden also provides an explanation alternative to compensating wage differentials for the frequent finding that women seek occupational niches where hours are shorter or more flexible. It is not that women are willing to forgo pay because they enjoy flexible hours whilst men do not; rather, women are more likely to accept lower (per hour) wage offers if this is the only way that they can combine the roles of mother and wage earner.

2.2. Evidence from national case studies

Case study research on occupations reviewed by the national experts is summarized in Part II for 10 occupational groups: *university professors, doctors, financial professionals, IT technicians, lawyers and judges, home helpers in elderly care, nursery care workers and pre-primary school teachers, cleaners, retail sector and police.*

Evidence from these studies does not add to the above list of factors, but it clearly prioritises some over others. The main focus has been on the choice of the field of education, covert barriers and biases in organizational practices, including collective bargaining procedures, stereotypes and hours of work. We briefly highlight the most significant findings below, while a more extensive description is given in Part II of the report.

Organizational practices. The importance of organizational practices for the pattern of segregation emerges from several case studies.

- In their research on teachers of economics in Italian universities Carabelli et al. (1999) found that supply-side explanations like motherhood or fewer publications could not fully explain differential career outcomes for male and female faculty, whereas poorer networking resources among women was a more convincing explanation.
- Research on faculty in Germany indicates that how women are or behave in comparison to men has been overestimated in comparison to how academic institutions are and

behave (Wissenschaftsrat 2007, p. 20). Advocacy of standardization and transparency of hiring and selection procedures is, in fact, strongly supported by the findings on university teachers.

- Longitudinal research on doctors in Norway (Gjerberg 2002) suggests that, whilst having children is one factor accounting for the fact that young female doctors change specialty more often than men when they form a family – e.g. from surgery or internal medicine to gynaecology – some exclusionary mechanisms could also account for these changes.
- Work assignment by managers of maintenance cleaning firms in Belgium is an example of how organizational practices can still be driven by prejudices or stereotypes. Male managers – the vast majority – often assign jobs entailing longer hours to their male staff on the assumption that men are the main breadwinners (Meulders 2008).

Stereotypes. The role of stereotypes that emerges from the surveyed case study research is complex. The following are examples of how and why stereotypes matter:

- In Hungary, acceptance of a stereotypical division of labour between men and women in the family hinders awareness of the seriousness of vertical segregation among managers: vertical segregation is taken to be a ‘natural’ consequence of the family division of labour.
- Across countries, medical specialties where women predominate are allegedly viewed as ‘feminine’, ‘caring’, requiring inter-personal skill and ‘emotional work’. Some scholars go so far as to claim the existence of ‘innate skills’, e.g. for female paediatricians (Brooks 1998, quoted in Fagan 2008).
- Seven in every ten law professionals in Ireland (barristers or solicitors) are women in family law, but only five out of ten work in commercial law. Allegedly, although higher representation in family law partly ensued from larger inflows of women when legislative changes introduced legal separation and other family law remedies, “the global tendency for family law practice to be dominated by women....suggests a gendered explanation” (Bacik et al. 2003, author’s emphasis).

However, what lies behind stereotypes is not always clear. In Portugal where almost half of doctors are women, dentistry is male-dominated whilst clinical haematology is female-dominated. Is this evidence that dentistry requires less care and involves less emotional work? Moreover, qualitative research in the sector of financial intermediation carried out in the Czech Republic highlights how women cope with discriminatory behaviour by complying with feminine stereotypes so as to gain acceptance for career advances. In similar vein, the findings of a study of academic engineers in Italy suggests that women first entering subdisciplines dominated by male culture and practices may exploit stereotypes in order to ease their acceptance. But once the presence of women has somehow been ‘accepted’, the process of breaking stereotypes becomes less costly.

Additional indications that the true role of stereotypes may be overestimated because they offer ready-made and socially acceptable or socially appealing reasons for choice come from Norway. According to Solberg (2004), male students attending pre-school teacher training courses are significantly less motivated than female students, but they report a lack of alternative employment opportunities as the main reason for their low motivation, not the prospect of entering a heavily feminized occupation.

Discussion on the importance of *field of study* for segregation is bound to overlap with that on stereotypes, as some of the above examples make clear. Case study research on the high-paid professions underscores the importance of educational choices. Women are found to flow into a profession following an increase in the supply of female graduates with the appropriate

qualifications. This tends to be the rule, although there are exceptions, e.g. among IT technicians in Greece, where the share of women is still much smaller than that among students (Karamessini 2008). However, the correspondence between qualifications and field of education is much weaker for non professional occupations, which are in the majority, as noted (EIE 2008, Chapter 5). Overall, therefore, more diversified choices of field among men and women do not consistently match with more diversified employment structures at aggregate level (see Box 1).

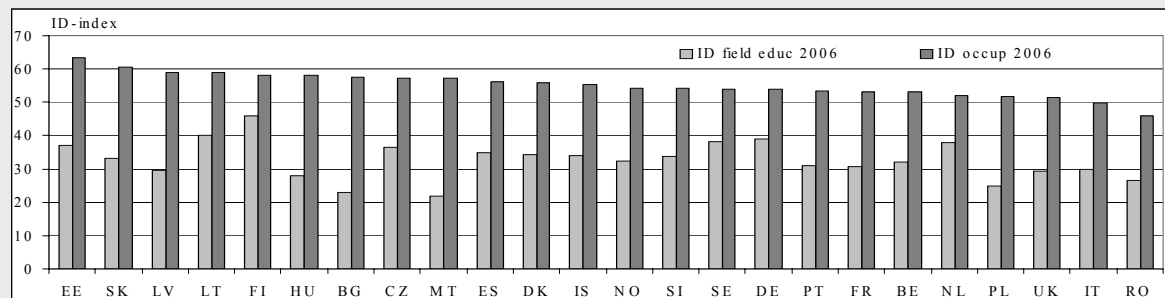
Box 1. Field of study and occupational segregation

Choice of level and field of education is a popular explanation for occupational segregation that several national reports emphasize. Since women are outperforming men in levels of education attained - up to the first stage of tertiary education - choice of field is the primary channel through which education can influence de-segregation in the future.

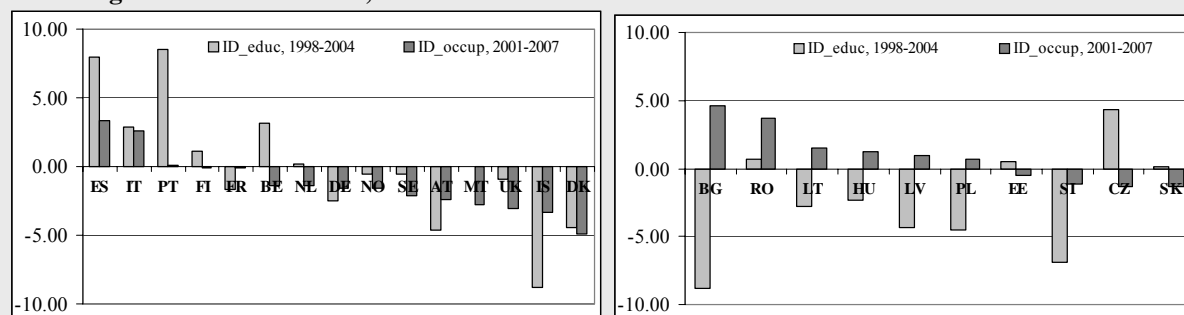
As with choice of occupation, segregation indexes are used to measure the dissimilarity of choice of study field between men and women. Figures 6a and 6b juxtapose for each country the value of the ID index for occupations and that for fields of study in tertiary education, the purpose being to detect any influence of education on occupational patterns. Chart 6a uses levels in segregation, while Chart 6b reports change over the past decade allowing for a three-year 'production' lag, i.e. assuming that less (more) differentiation in fields of study at year t will show up in employment some three years later ($t+3$). Over time, and for EU15 countries only, de-segregation of education clearly associates with de-segregation in employment (and conversely). This is as expected. However, it does not hold for Central and Eastern European countries, where the distribution of women and men across fields of education has recently become more balanced - with the exception of Romania, Estonia and the Czech Republic - without this showing up in the distribution in employment. Moreover, inspection of levels of segregation across countries does not reveal a clear tendency for more dissimilar educational choices to be matched by more dissimilar occupational structures. Perhaps the main reason for this patchy evidence is that the choice of field matters for a limited number of occupations and is therefore easily obscured by other factors at aggregate level.

Figure 6. Segregation by field of education and by occupation in Europe, 1998-2007

6a. Levels in 2006



6b. Change over the last decade, 1998-2007



Note: 23 fields of education are considered for the ISCED 5-6 graduates (first and second stage of tertiary) including Teaching and training, Education Science, Arts, Humanities, Social and behavioural science, Journalism and information, Business and administration, Law, Life science, Physical science, Mathematics and statistics, Computing, Engineering and engineering trades, Manufacturing and processing, Architecture and building, Agriculture forestry and fishery, Veterinary, Health, Social services, Personal services, Transport services, Environmental protection, Security services.

Source: own calculation using LFS (ISCO-88 3-digit) for occupations and ESTAT data for the distribution of men and women between different fields of education.

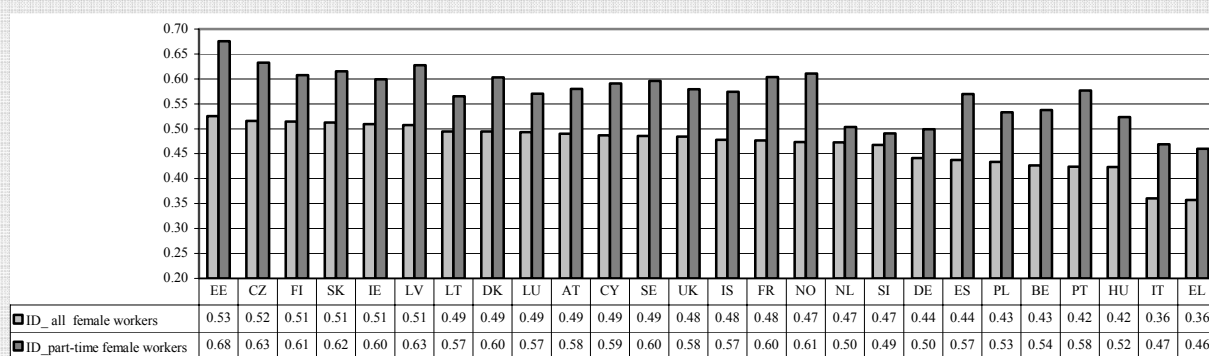
Hours of work. Hours are less of a concern in relation to segregation in Eastern and Central European countries. For instance, the gender gap in hours worked is small in top occupations such as management in the Czech Republic and financial intermediation in Bulgaria (Beleva 2008; Křížková 2008). In other European countries, men clearly appear to compete for better jobs by putting in more hours of work. Accordingly women find that the search for shorter hours may considerably restrict their choice of occupation. This is known to occur more frequently at the lower end of the skill spectrum, specifically among part-timers. One strong piece of evidence in support is considerably higher segregation among female part-timers, a result that records no single exception among European countries (Box 2).

Box 2. Part-time employment and segregation

Previous research has found that segregation is higher among women part-timers, indicating that the choice of part-time implies further restrictions in the range of available employment opportunities (Petrungolo 2004; Blackburn et al. 2001; Fagan 2003)

Figure 7 offers supporting evidence by comparing two ID values. The first value is computed for all men and women employed and the second is computed for all men and women part-timers only. If the second value (bar to the right) is higher than the first (bar to the left) this indicates that the occupational structure of female part-timers is less diversified than that of female full-timers. This is precisely what the Figure shows for all European countries with no exception. Two countries record a comparatively lower difference, Slovenia and the Netherlands. The result for the Netherlands is especially noteworthy because this is the country with the highest share of part-timers: Dutch part-timers are clearly so many that they are found in a much larger number of occupations compared to their counterpart in other countries.

Figure 7. Segregation of all/part-time female workers versus all male employees in Europe, 2006



Note: the ID index is used because the IP is sensitive to variations in the share of female employment and decreases automatically when female full-timers are dropped from the calculations. The values for the ID index differ from those in Table A.1 of the Appendix because SILC data at 2-digit ISCO level are used. The reason is that LFS data at 3 digit level are not available for the part-time / full-time breakdown

Source: own calculation using EU-SILC 2006 (ISCO-88 2-digit)

Part-timers tend to be found more frequently in low-paid and low-qualified occupations. However, case study research singles out work loads and works schedules as important contributors to segregation - between and within occupations - even among doctors, judges, primary school teachers, home care workers, and IT professionals:

- In Austria and Greece, where women decrease among IT professionals, long hours and/or irregularly spaced hours with peaks at project deadlines have been found to deter entry by women (Karamessimi and Sakellaris 2007, quoted in Karamessini 2008; Krenn 2005, quoted in Mairhuber 2008).
- Conversely, greater opportunities to work part-time or flexible hours are cited in explanation for the long-standing feminization of primary school teachers in Latvia and home care staff in Austria.
- Patterns of re-segregation also reflect hours of work arrangements. In the UK and Italy, male general practitioners (GPs or family doctors) are alleged to be, respectively, under-represented and over-represented compared with other doctors because of hours of work.

In the UK, average working hours for part-time and full-time GPs vary from 33.8 hrs among partners to 22.3 hrs among salaried GPs., thus attracting women in a profession where the long hours culture is still dominant (Fagan 2008: Box 2b.2). By contrast, in Italy the earnings of GPs are directly proportional to the number of patients up to a statutory maximum, and male GPs seize this opportunity to maximize their earnings alongside their hours of work; female doctors prefer hospital work or set up studios where opportunities for shorter or flexible hours are higher (Vicarelli and Bronzini 2008);

Whilst case study research underlines the importance of hours of work, some caution is necessary. The reasons for caution are illustrated by the following examples:

- In the Netherlands where women are making large strides in the judiciary, the profession of magistrate is depicted by personnel advertisements as a modern form of employment with opportunities to work part-time, parental leave and child care facilities. However past research found that few women mentioned the opportunity to work flexible hours or part-time as the reason for choosing the judiciary (De Groot-Van Leeuwen et al. 1996).
- In Italy, the importance of hours of work was stressed by research on women first entering male professions, but research updates indicate that this reason is less frequently cited by younger women now entering these same professions (David and Vicarelli 1994).
- The above-cited longitudinal research in Norway on change of specialty among female doctors over the life course further counsels caution. For example, when the change is from surgery to gynaecology the gain in flexible or shorter hours may be rather limited, and part of the explanation probably lies elsewhere.

Finally, the presumption that all women want shorter hours may be used against them. Thus the battle to reschedule working hours in order to combine family and work cannot be fought for women alone, or else it may turn into a trap.

- Male supervisors of maintenance cleaning firms in Belgium allegedly often assign men to longer, better-paid tasks on the assumption that men need to or should earn more.
- In Malta, the lowest female-participation country, it is not infrequent for women with college educations to drop out of the labour force or radically shift their career orientation – e.g. from accountant to teacher – in order to meet family demands. Interviews with women graduates revealed that *‘they were “encouraged” by husbands, whose earning commitment takes priority over theirs, to reduce their full-time hours of work or exit the labour market, to look after their children’* (Camilleri 1997).

Summary

The debate on the roots of segregation dates from the seventies, but it remains the point of reference despite the fact that so much has changed since then. After decades of research, most scholars would agree that there can be no single-factor explanation for segregation. Given widespread enforcement of equality legislation over the past years, impressive advances of women in education, progressive loss of importance of physical attributes for productivity, change in family roles and, last but not least, successful challenging of gender norms by feminism, current research has both narrowed down the list of potentially relevant factors identified in the early debate and nuanced the original explanations.

Priority is given to four sets of factors: hours of work, stereotypes, choice of study field in education, and covert barriers and biases in organizational practices, including collective bargaining procedures. The main findings can be summarized as follows:

- There is both statistical and qualitative (case study) evidence that choice of study field still matters for the type of occupations that men and women enter, but the correspondence between field of study and occupation is close for about 10 percent of jobs, those in the licensed professions.
- Stereotypes are ubiquitous and continue to influence behaviour, but it is not easy to pinpoint how far they stand for genuine preferences, how far they express social norms or how far they are used to surrogate information. Also, the actual role they play in segregation may be overestimated by qualitative research, since sometimes they are used to rationalize or even legitimize ex post choices that may have been made on other grounds.
- The unequal care burden and the consequent inability to prioritize income commitment within the family drive the quest of many women for shorter and more flexible hours of work. Among qualified women (the ‘professionals’) this search for hourly friendly occupational niches often results in re-segregation into professional niches, or it hinders entry into occupations featuring high/irregular work hours and workload.
- When the search for shorter working hours becomes a choice for part-time work, it is likely to further restrict the choice of occupation, as underlined by the significant increase of segregation that has been found for female part-timers in comparison to female full-timers.
- Although legal barriers to entry or restrictive practises have long been outlawed, covert biases or forms of impediments still exist, often restricting career paths and career prospects within occupations. Examples that bear special importance for vertical or hierarchical segregation are closer rungs on ladders in feminised jobs career tracks, discretionary managerial practices for selection, hiring and promotions, networking, and mechanisms of cooptation.
- All these mechanisms interact with different payment structures or different types of employer (large/small, private/public) in shaping the pattern of segregation
- In high paid, professional occupations there is evidence that the influence of these factors of segregation is diminishing, especially among younger cohorts of women. This is not the case for low-pay occupations.

3. Implications of segregation

Employment segregation matters if it yields unequal outcomes or interferes with an efficient functioning of the labour market. This chapter initially focuses on undervaluation of women's work, wage discrimination and job quality, because these issues are still of primary concern for the European Employment Strategy. The final section of the chapter addresses a macroeconomic issue, namely the possibility that segregation may be exacerbating skill shortages insofar as it impedes the efficient reallocation of male and female workers and distorts the allocation of future flows of workers.

3.1. Undervaluation, discrimination, and overall inequality in pay

Undervaluation and segregation

In their report to the Equal Opportunity Commission in the UK on the undervaluation of women's work, Grimshaw and Rubery (2007: p. 10) define undervaluation as '*higher quality of labour for a given wage*' and see it as '*...a thread which links together the three causes of the gender pay gap: occupational segregation, discrimination and women's unequal share of family responsibilities*'. They identify two groups of factors that may convert segregation into undervaluation: respectively, the social construction of value and payment systems (Box 3).

Box 3. Undervaluation and occupational segregation

The social construction of value

Segregation makes it much more difficult to compare the relative skills or contributions of women and men directly. Segregation may disguise the influence of gender on wage differentials between sectors and organisations and on pay and grading hierarchies within firms. These influences can be summarised as follows:

- *Visibility* - women's skills are often simply not visible, as their jobs tend to be aggregated into large and undifferentiated pay and grading bands.
- *Valuation* - women's skills may not be valued, since pay and grading structures are still often based on male-type skills.
- *Vocation* - women's skills are often treated as 'natural', deriving from women's essence as mothers and carers, and are considered to provide opportunities for high levels of job satisfaction that justify the provision of low pay.
- *Value added* - women are more likely than men to be found in low value added or labour intensive occupations.
- *Variance* - women's lives follow different patterns to men's. This variance from a male norm promotes the notion that women's work (e.g. part-time work) occupies a separate sphere that is non commensurate with that of men's.

Payment systems

Women's pay may be lower than men's if there is no job grading system in place; if there are separate systems related to different kinds of jobs; and if the system does not reflect the kind of skills found in women's as well as in men's jobs. Starting salaries and individualised pay increments tend to be lower for women than for men. Men appear both more able or willing to engage in individual bargaining and to use external pay offers to boost pay.

Some women are less able than men to gain access to higher level jobs, as they face higher progression bars or are less able to meet them. Even if promoted, they may receive lower initial or continued pay rises.

Performance pay acts to maintain or exaggerate undervaluation by being more common in, and providing higher rewards in, male-dominated occupations; by being based on discretion; and by being based on variable, subjective, or male-biased, criteria of assessment.

Non-pay elements of the reward package tend to be higher, the higher the pay, and do not provide compensation for lower pay.

Pay systems are often based on rewarding the male model of continuity of employment and long hours of work.

Source: (Grimshaw and Rubery 2007: pp. 14-15)

Several findings from the cases studies reviewed in Part II show that many of the factors discussed in the Grimshaw and Rubery report continue to play a role in the undervaluation of women's work.

Skill and payment structures may overtly or covertly contribute to undervaluation. Overt biases in skill evaluation or skill downgrading have been documented for the Czech Republic and for Germany in the following instances:

- In the Czech Republic, Kozel (2002) compared the pay scale for the police force to that for nurses, two occupations that are both in the public sector, have positive externalities (social usefulness), offer similar working conditions such as shifts and exposure to safety hazards, require psychical and emotional effort, as well as control over emotions and ability to interact with people. However, the police scale starts from a higher minimum pay rate, and cumulates this initial advantage with higher supplements for night work, working with the mentally ill or being exposed to hazards.
- In Germany, separate pay rates are negotiated for building and window cleaning and for maintenance cleaning, with the latter being much more feminized. In these negotiated scales, an unskilled helper in building and window cleaning is entitled to a per hour rate higher than that received by a foreman in maintenance cleaning (Maier 2008)

Covert biases become evident when feminized occupations attempt to attract more men, as these examples from Iceland and Austria show:

- In Iceland integration of pre-primary school teaching into the school system and away from 'care work' is expected to reduce the undervaluation of this highly feminized occupation and to attract men (Jónsdóttir 2005).
- In the Austrian long-term care sector, the occupational ladder initially comprising only nurses and home staff workers has been lengthened with the creation of the 'assistance nurse position'. This move follows a search for 'professionalism' in the hope of attracting more men.

The underestimation of women's skills or their poor visibility are evidenced by several case studies as ways in which skill is socially constructed:

- Both male and female waiters interviewed for a survey in Portugal (Ferreira 2008) justified lower pay for women with the claim that men are able to cope with 'physical effort' whilst women are merely more 'sensitive'. It is clearly taken for granted that physical effort should pay more than sensitivity and that actual waiting at tables is more actually strenuous for male waiters and demands more sensitivity to female waiters.
- In the attempt to fight the undervaluation of home-based care of the elderly, the Brigitte Croff Conseil in France has drafted a skills certificate for home carers which states the skills and competences that the job requires, including autonomy, perseverance, ability to listen, physical competence, ability to work in a team, self-confidence etc (Silvera 2008).

Very high turnover in several feminized low-pay occupations is a summary indicator that pay is too low for the demands imposed by the work, and it is a frequent finding for feminized low pay occupations:

- Labour turn-over is explicitly reported to be very high or higher than average among: maintenance cleaners in Belgium and Germany (Meulders 2008: reference to a 55% turn-over; Hieming et al. 2005; Maier-Ahuja 2003); waiters in Portugal (Agender 2008); sales workers in Ireland (Indecon 2002), and bar tenders in Liechtenstein (Papouschek 2008). Across countries, one of the responses in many of these occupations is to rely increasingly on immigrant workers.
- In-living elderly care workers in Italy are overwhelmingly female and immigrant. Even this docile labour supply resorts to forms of turnover in response to working conditions. In-living care workers of Eastern European origin – the majority – often work in

‘rotation’ with friends or relatives in order to cope with family commitments back home, but also to counter the stress that the job entails (Bettio et al. 2006).

A typical process of undervaluation well documented in the literature is the decline in comparative earnings that has often accompanied the feminization of an occupation (Reskin and Roos 1990). In the UK men’s relative earnings have declined over the past 15 years in 10 out of 18 occupations undergoing feminisation, including personnel managers, biological scientists, education officers/school inspectors, management accountants, authors/writers/journalists and vocational and industrial trainers (Grimshaw and Rubery 2007: p. 134). Another frequent finding is a positive correspondence across occupations or sectors between higher feminization and lower comparative pay: research for the USA indicates that this is still the case in that country (Budig 2002; Booras and Rodgers 2003).

However, the evidence on both these points from the case study research reported in Part II is mixed.

- An example of how feminization makes occupational downgrading easier is provided by Křížková’s (2008) study of supermarket cashier work in the Czech Republic, where most cashiers are women. Following transition to the market economy, the workload has increased for the same amount of hours and pay, the work schedule has become highly irregular, and generally the occupation is attracting marginalized groups of women – foreign workers and elderly female workers with few other opportunities.

If we look at high-paid occupations, the picture is more varied.

- Among university teachers, for example, women tend to experience more difficult career advancement in traditionally feminized disciplines such as Arts or the Humanities. This has been explicitly documented for Germany, Belgium and Italy, but it may be also true for other countries (De Henau 2006; Wissenschaftsrat 2007, p.16; CNVSU 2007: Tab. 3.10, p.40). At the same time, the current distribution of university teachers in Italy across disciplines shows no consistent association with comparative earnings opportunities (Bettio and Verashchagina 2008).
- Women are making large strides among doctors throughout Western Europe. Ongoing feminization of the profession has provoked fears of devaluation in France and has been explicitly linked with deskilling in Portugal. However, that of doctors continues to be a high paid, high prestige profession in Italy, UK or Finland.
- There is no evidence of devaluation for the judiciary in the Netherlands, despite the rapid and ongoing increase in the share of women judges.

The overall indication from case study research is that low-paid occupations which are already feminized, or are undergoing feminization, are more at risk of undervaluation than high-paid occupations.⁶ Two ‘protecting’ factors may be at work. In Western European countries, high-paid occupations undergoing feminization such as judges or doctors are ‘strategic’ public sector occupations that continue to yield considerable bargaining power for their incumbents.

Discrimination and segregation. If undervaluation is defined as ‘higher quality of labour’ for a given wage, it largely coincides with discrimination. Statistical analysis are best suited to

⁶ High-pay occupations in the case studies surveyed are doctors, university teachers, law professionals (judges and lawyers), financial intermediaries and managers, IT professionals. Low-pay occupations include nursery care workers and pre-primary school teachers, home-helpers and elderly care workers, cleaners, sales assistants and supermarket cashiers and police

investigating the link between segregation and discrimination, and most of them share the same concept of discrimination: the latter is measured by ‘netting’ the hourly wage gap from the influence of male/female differences in characteristics like schooling, experience, work attitudes.

Unsurprisingly, the findings from these studies depend on the methodology used; but the greater the detail in the data, the more visible the importance of segregation becomes. Recent econometric analysis testing the extent to which the wage gap is influenced by the level of segregation across countries find that the influence is weak, or works in the opposite direction to that expected. In contrast, analyses for individual countries using detailed data on wages by occupation, firm, and sector conclude that segregation at all these three levels and not only by occupation explains a large share of the (netted) wage gap (Box 4).

Box 4. Findings from econometric analysis on segregation and discrimination

The results from recent studies exploring the link between indexes of segregation and the net gender wage gap across countries cast doubts on the strength of this link. Both Blau and Khan (2001) for the USA and Dolado *et al.* (2002) for EU15 found a non significant, albeit positive, influence of segregation on the net pay gap, while Pissarides *et al.* (2003) found a negative influence for 11 European countries observed between 1980 and 1998.

However, these are rather aggregate types of analysis. Different indications emerge from studies using more specialized sources - so-called matched employee-employer data - which record the characteristics of both narrowly defined occupations and the workers employed. Analysis using these types of data recently found that segregation accounts for a large share of the overall gender wage gap. Bayard *et al.* (2003) estimated that the effect of segregation among occupations, establishments, and industries explains around one third of the net wage gap in the USA, whilst within-occupation differences in wages between male and female workers account for between one fourth and one half of the overall gender wage gap. Amuedo-Dorantes and De la Rica (2006: Tab. 5) found that the within-occupation component of gender pay differences accounts for between 22 and 53 per cent of the total net wage gap in Spain, depending on the year. The estimated impact of segregation among occupations, establishments and industries also varied considerably with the year of the survey, ranging between one tenth and one half.

Discrimination and inequality in pay. Undervaluation or discrimination are specific aspects of wage inequality. A different line of inquiry addresses the relationship between wage inequality at large and occupational segregation. The underlying assumption is that segregation does not always result in inequality. This idea has led to several attempts to decompose indexes of segregation into ‘invidious’ and ‘non-invidious’ components (Charles and Grusky 1995; Bridges 2003; Blackburn *et al.* 2005)

Blackburn *et al.* (2001; 2005) propose a decomposition that resorts to the old concept of vertical segregation. As described in more detail in Box B.2. of the Appendix, the overall segregation (O , measures by the Gini coefficient) is broken down into a vertical component (V , measured by Somers’D) capturing the association between segregation and a specific dimension of inequality – such as e.g. income – and a neutral or non-invidious horizontal component (H). The relationship between V , H and O is

$$O^2 = V^2 + H^2,$$

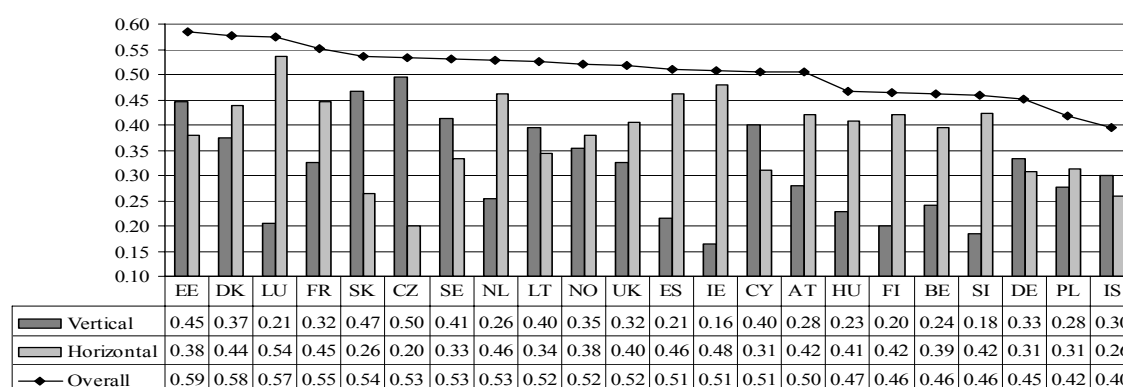
so that the horizontal component can be obtained as a residual once the Gini index and Somers’D have been computed.

The decomposition carried out for this report used EU-SILC income data for 21 countries in 2006 at ISCO-88 2-digit level (26 occupations). Somers’ D (vertical segregation) was computed using average per hourly wage earnings (cash and near-cash) by occupation for year-round employees. Workers reporting only self-employed income or reporting zero income were dropped from the sample because data on self-reported income is known to be less reliable for the self-employed. Given that the SILC source reports net income for some countries, and gross income for others, the gross income option was taken in order to incorporate the largest number of countries.

Figure 8 lists the findings for all-year-round workers reporting non-negative wage income: the continuous line records overall segregation (as measured by the Gini coefficient) whilst the bars chart the value for vertical and horizontal components (for details see Box B.2 of the Appendix).

Vertical segregation turns out to be less important than horizontal segregation in the vast majority of countries. Exceptions are Estonia, Slovakia and the Czech Republic among Eastern European countries, Sweden and Germany among Western European ones.⁷ In the remaining countries, the vertical component is between one third and nine tenths of the horizontal component. Somewhat unexpectedly, Scandinavia together with Germany and the UK record the highest vertical component in ratio to the horizontal one. This probably reflects the high share of part-timers, among whom pay is comparatively lower. However, this is not the case for the Netherlands, perhaps because part-time in that country is more the rule than the ‘marginal’ choice for women. The general prevalence of the horizontal component over the vertical component suggests that, whilst the dimension of inequality remains important for segregation, it can no longer be assumed that all segregation implies inequality.

Figure 8. Horizontal, vertical and overall segregation in Europe, 2006



Note: the criterion for vertical segregation is pay inequality measured by the percentage of male workers in the occupation with average gross hourly income higher than the average gross male hourly income in the economy. For more details on methodology see Box B.2 of the Appendix

Source: own calculation using EU-SILC 2006 (ISCO-88 2-digit)

It is important to bear in mind that, as Blackburn put it when illustrating his own results from the decomposition:

‘...pay is not the only form of inequality, and although all forms of inequality tend to be positively correlated with earnings, in so far as any form of inequality is not perfectly correlated with earnings it is not included in this vertical dimension. Also these findings are based on the rank ordering of occupational incomes which underestimates the full extent of inequality. Because the exceptionally huge incomes [...] go overwhelmingly to men (usually company directors), the mean income difference by gender is rather greater than our findings indicate. Nevertheless, our results give a good guide to the inequalities relevant to the majority of the population...’ (Blackburn et al, 2005: p. 9)⁸

⁷ This finding is fairly robust to change of the reference population – e.g. whether or not the self-employed are included – or to change of the indicator of income inequality – e.g. whether the share of employees in each occupation above median income is used instead of the average occupational income. However, the ratio of the vertical to the horizontal component is sensitive to the change in the indicator.

⁸ Our own choice of sample – all-year-round workers receiving non-zero wage earnings – is likely to further underestimate inequality because the distribution of income tends to be flatter among employees and because some of the non-year-round workers may be marginal workers on low earnings.

To recapitulate, key findings are that undervaluation is still widespread, but it is more so for low-paying than high-paying occupations. Biases in job evaluation practices, the degree of ‘professionalisation’ of occupations, the length of occupational ladders, the visibility of skills, all emerge from the case studies as important factors, although they do not exhaust the list. Cross-country studies do not find a significant impact of segregation on discrimination, whereas detailed, country-specific econometric analysis confirms that segregation between occupations but also within occupations and between sectors or industries accounts for a large share of discrimination. This latter finding, however, cannot be taken to mean that all segregation implies pay inequality. Decomposition of overall segregation into a vertical component capturing inequality in hourly pay and a ‘neutral’ component indicates that the latter is often larger than the former.

3.2. *Job quality and labour market segmentation*

Income is one of the dimensions along which segregation sustains disparities between men and women. Additional dimensions of inequality that may be channelled via segregation affect the overall quality of jobs. The European Foundation for the Improvement of Living and Working Conditions (European Foundation) has assessed work and employment quality (European Foundation, 2001) along four main dimensions: i) *career and employment security*; ii) *health and well-being of workers*; iii) *reconciliation of work and family life*; iv) *skills development*. The discussion below focuses on selected evidence for each of the four dimensions.

Concern for the quality of jobs at European level partly overlaps with concern about labour-market segmentation. The term refers to the coexistence in the labour market of two or more segments of workers with differential access to job and job security, skill development, pay and career track. Whilst segmentation is not a new phenomenon, the selective implementation of labour-market flexibility over the past decades has sometimes exacerbated divisions between sheltered jobs and those without protection or prospects (Blanchard 2006), e.g. via fixed-term contracts or outsourcing.

The first and fourth dimensions of job quality are especially relevant to segmentation.

Career and employment security. Career prospects for different jobs still reflect gender biases, as repeatedly noted. Recall the previous examples of the introduction of an intermediate career rung among home-care workers in Austria in order to attract men into the occupation, or the efforts to professionalize care work in the UK and Austria. The under-representation of women in supervisory and managerial positions is an outcome of these biases, and it is well documented elsewhere (EC 2007). Specific attempts to estimate the extent to which the differential access to supervisory positions for men and women increases the gender pay gap produced figures ranging between 8 and 15% of the overall gender pay gap for 8 of the EU15 countries groups in the late 1990s (Bettio 2002).

The interaction among gender, occupation and employment stability has received less research attention. One important development that has raised concerns about labour market segmentation is the increase in fixed-term contracts. In the European Union, women record a slightly higher incidence of fixed-term contracts than men, both overall (respectively 14.9% and 13.9% in 2005 for EU25) and for involuntary fixed-term contracts (7.5% and 6.9%). Nonetheless, the pattern of transition from temporary to permanent is occupation-specific to a degree and may therefore differ between female and male occupations. Table 3 indicates that differences exist but do not work systematically in favour of male or female occupations. For each occupation, the table

records the number of countries where the rate of transition from temporary to permanent status between 2004 and 2005 was higher than the economy-wide average. If anything, there are more success cases (transition rate above the national average) for prevalently female occupations, probably reflecting the fact that occupations where employment is declining are found more often among male dominated than among female-dominated occupations (see Table 3 below). However, the picture is mixed.

Table 3. Transitions from fixed-term to permanent contracts, 2004/2005

ISCO-88	Occupation	No. of countries where the occupation is			No. of countries where the success rate in the occupation is higher than the economy-wide average
		male-dominated	mixed	female-dominated	
1	Armed forces	10	0	0	2
11	Legislators, senior officials and managers	7	5	0	5
12	Corporate managers	8	4	0	0
13	Managers of small enterprises	5	7	0	0
21	Physical, mathematical and engineering science professionals	12	0	0	4
22	Life science and health professionals	0	7	5	4
23	Teaching professionals	0	2	10	8
24	Other professionals	0	11	1	2
31	Physical and engineering science associate professionals	11	1	0	3
32	Life science and health associate professionals	0	0	12	6
33	Teaching associate professionals	0	2	8	6
34	Other associate professionals	0	10	2	6
41	Office clerks	0	0	12	7
42	Customer services clerks	0	0	12	9
51	Personal and protective services workers	0	2	10	9
52	Models, salespersons and demonstrators	0	1	11	8
61	Skilled agricultural and fishery workers	8	4	0	0
71	Extraction and building trades workers	12	0	0	6
72	Metal, machinery and related trades workers	12	0	0	3
73	Precision, handicraft, craft printing and related trades workers	5	7	0	4
74	Other craft and related trades workers	5	7	0	6
81	Stationary-plant and related operators	11	1	0	5
82	Machine operators and assemblers	5	6	1	9
83	Drivers and mobile plant operators	12	0	0	4
91	Sales and services elementary occupations	0	0	12	9
92	Agricultural, fishery and related labourers	3	6	2	2
93	Labourers in mining, construction, manufacturing and transport	12	0	0	9

Note: ^a data for 12 countries was available and used, including AT, BE, EE, ES, FI, FR, EL, IE, IS, IT, LU, NO.

^b Occupations are classified as female-dominated if the share of women is higher than the average female share of employment in the country (FSE) plus 0.3×FSE; likewise for male dominated occupations.

Source: own calculation using EU-SILC longitudinal data for the years 2004 and 2005 (ISCO 2-digit); ESTAT data for female share in employment by country

Health and well-being of workers. In comparative terms, women are still somewhat better ‘protected’ against health risks by being under-represented in industrial occupations. However, the differences with respect to men are diminishing. In their recent report on gender and working conditions in Europe, Burchell et al. (2007) conclude that ‘Overall, the pattern of risks at work and absence according to sex and occupation is mixed. Despite the earlier findings regarding men’s greater exposure to more traditional ambient and physical risks [...], gender differences

in self-reported risks almost disappear in a number of occupations. As a whole, however, men are more likely to report work-related health risks’.

Work/life balance. The importance of schedules and hours of work for work/life balance can hardly be overstated. Statistical evidence from both the survey on working conditions by the European Foundation (Burchell et al. 2007: chapter 4) and Labour Force Survey data (Eurostat 2008: pp. 84-89) indicate that part-time and long hours clearly differentiate women’s and men’s working schedules, whilst the differences are contained, and sometimes unexpected, for other working schedules.

The quoted survey on working conditions corroborates the finding from case study research that, across sectors and occupations, women tend to avoid long hours, sometimes at the cost of re-segregation (Figure 9 below). In compensation for large differences in hours of work, women appear to experience a small increase in satisfaction with the work/life balance compared to men. Eighty-two percent of the women interviewed for the European survey on living conditions declared that work fits well or very well with non-working compared to 77% percent of the men, and this modest advantage re-surfaces when the data are broken down by family type or broad occupational category (Burchell et al.: Tab. 22 and Fig. 50). However, it should be noted that the overall level of reported satisfaction is generally very high, whilst gender differences are very small, casting some doubt on the discerning power of direct questions on satisfaction.

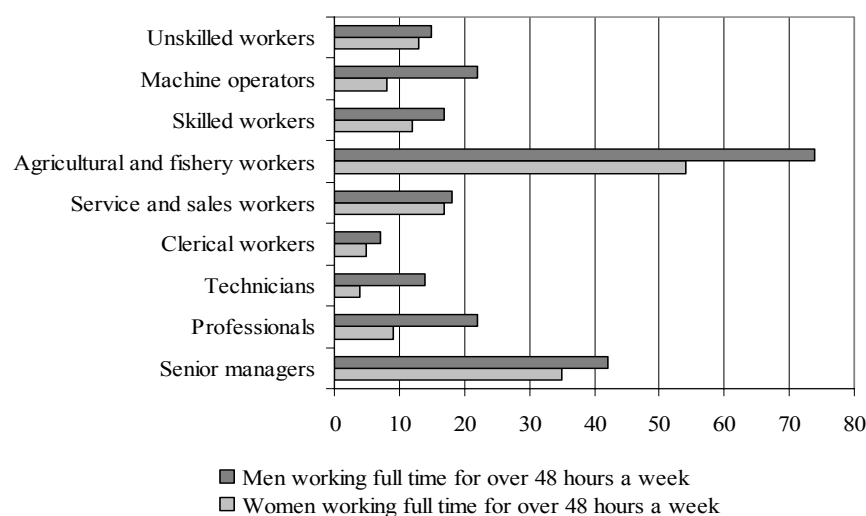
Table 4. Flexible working time arrangements of male/female employees aged 25-49(% in the sector), 2004

Sector	Women	Men
Agriculture (A+B)	19.3	21.1
Mining / utilities (C+E)	32.9	22.6
Manufacturing (D)	20.7	23.2
Construction (F)	27.3	17.0
Distribution (G)	18.1	23.3
Hotels / restaurants (G)	17.7	22.9
Transport / communications (I)	23.2	25.1
Financial services (J)	31.0	36.7
Business activities (K)	26.3	34.5
Public administration (L)	39.7	27.6
Education (M)	12.8	22.2
Health / social work (N)	17.1	24.3
Personal / community services (O)	27.3	31.4

Source: Eurostat (2008: Tab. A.61, p. 194)

The findings on flexible schedules are less expected. Flexible working hours benefit men more than women, although men’s advantage in the EU as a whole is contained within two percentage points. Unsurprisingly, however, there is a marked divide between the public and the private sector, with about 40% women in public administrations working flexible hours or being able to count on forms of time banking – more than ten points above the male figure. This is consistent with evidence from case studies for public sector-type jobs like doctors, teachers or judges, where flexible forms of employment are sought after by women.

Figure 9. Occupational profile of full-timers working more than 48 hours p.w., EU-27, 2004



Source: Burchell et al. 2007, Fig. 45, p. 40

Skill development. Segregation may induce mismatches between actual job requirements and the qualifications or skills of the incumbents. However, in the self-assessment of male and female workers, the degree of underutilization of the respective qualifications and skills is broadly similar. The Survey on Living Conditions finds that about one third of men (36%) and women (33%) believe that they have the skill or qualification to do more; less than one sixth (between 15% and 13% depending on sex) report that they need more training. Thus, if there are skill mismatches by occupations, they affect female- and male-dominated occupations to largely the same extent.

Overall, analysis of the four basic dimensions of job quality indicates that, in addition to pay, important gender asymmetries still concern long working hours, career prospects, and access to managerial and supervisory positions, all of which are channelled via occupational segregation to a greater or lesser extent. Differences in other dimensions of job quality are modest, although this does not justify policy complacency. For example, the fact that fixed-term contracts are more or less equally distributed among the sexes does not make them more acceptable; nor does it cancel the risk that uncertainty about future employment prospects may hinder fertility among young women (Del Bono, Weber and Winter-Ebmer 2008).

3.3. *Skill and labour shortages*

In all countries of the European Union, fewer than 35 occupations out of the 106 recorded by the LFS are mixed occupations (see Table A.1 of the Appendix); the remainder are male- or female-dominated. With the pattern of segregation changing slowly over time, it is practically inevitable that labour shortages in strongly sex-typed occupations take longer to be resolved within a country, unless suitable foreign labour can be attracted from other countries. Given that labour is less mobile than capital, the likelihood of bottlenecks is particularly high when demand grows fast at the local level. All this causes inefficiencies, especially in those European countries where the supply of young workers is not projected to increase for some time. In the interest of efficiency, therefore, de-segregation could be targeted on easing skill/labour shortages when the occupations affected are strongly sex-typed (Miller et al. 2004). This section discusses evidence on the sex composition of current and projected labour shortages across European countries, whilst suitable de-segregation policies will be examined in the next chapter.

Table 5. Projected medium-term growth (2006-15) and prevalent sex composition of occupations

	Armed forces	Legislators, senior officials and managers	Professionals	Technicians and associate professionals	Clerks	Service workers and shop and market sales workers	Skilled agricultural and fishery workers	Craft and related trades workers	Plant and machine operators and assemblers	Elementary occupations
AT	M	M	X	X	F	F	M	M	M	X
BE	M	X	X	X	F	F	M	M	M	X
CY	M	M	X	X	F	X	M	M	M	F
CZ	M	M	X	X	F	F	X	M	M	F
DE	M	M	X	X	F	F	X	M	M	X
DK	M	M	X	X	F	F	M	M	M	X
EE	na	M	F	F	F	F	na	M	M	X
EL	M	M	X	X	F	F	X	M	M	F
ES	M	X	X	X	F	F	M	M	M	X
FI	M	M	X	X	F	F	X	M	M	X
FR	M	X	X	X	F	F	M	M	M	F
HU	M	X	X	F	F	X	M	M	M	X
IE	M	X	X	X	F	F	M	M	M	X
IT	M	X	X	X	F	F	M	M	M	X
LT	na	X	F	F	F	F	X	M	M	X
LU	M	M	X	X	F	F	M	M	M	F
LV	na	X	F	X	F	F	X	M	M	X
MT	M	M	F	X	F	X	M	M	X	X
NL	M	M	X	X	F	F	M	M	M	X
NO	M	X	X	X	F	F	M	M	M	F
PL	M	X	F	X	F	F	X	M	M	X
PT	M	X	X	X	F	F	X	M	M	F
SE	M	M	X	X	F	F	M	M	M	X
SI	M	X	X	X	F	F	X	M	X	X
SK	M	M	F	F	F	F	M	M	M	X
UK	M	X	X	X	F	F	M	M	M	X

Note: ^a Occupations are classified as growing/declining (white/dark grey) if their contribution to the projected growth/decline in employment change by countries and occupations in the years 2006-15 amounts to more than 5%. Light grey indicates relatively stable occupations with a contribution to the projected change within $\pm 5\%$. ^b M stands for male-dominated occupation, F – female-dominated, X – mixed, for classification see Tab.3; na – data not available

Source: own calculations using Cedefop (2007: Tab. 20) for projected employment change, in 2006-2015, and LFS data for the FSE, 2006

Medium-term labour demand projections carried out by Cedefop (2007) suit this purpose because the estimated growth of demand is broken down by broad occupational category (ISCO 1-digit) and country. In order to map the sex composition of future labour needs, the occupational groups in Table 5 are categorized as male/female and mixed, and at the same time as growing/ stable/declining.

Instances of feminised or male-dominated occupations projected to grow at country level greatly outnumber instances of growing and mixed occupations. Feminised occupations projected to expand are primarily those of service workers and sales workers (17 countries), followed by clerical workers (8 countries), elementary occupations, including care workers with low levels of qualification (5 countries), and professionals or associate professionals, including qualified care workers such as nurses (4 countries). Growing male occupations are plant and machine operators and assemblers (9 countries), followed by senior officials, managers and legislators (6 countries), and craft and related workers (4 countries).

The implications for future skill needs of this occupational pattern of employment projections is summarised in the Cedefop report:

‘ In 2006 it is estimated that just under 80 million of the 210 million people employed in Europe were doing higher level jobs such as management, professional work of one kind or another or technical support of those activities. These areas are all expected to experience increased demand over the next decade. In contrast, jobs requiring traditional agricultural skilled workers, jobs for several other craft and related skills and jobs requiring clerical skills are expected to decline in number. If the trends observed over recent years continue there will, however, be significant expansion in the numbers of jobs for many service workers, especially in retail and distribution, and also for some elementary occupations which up until now typically require little or no formal training ... Technological and other changes are tending to polarise the demand for skills, creating many jobs at higher levels and at the lower end of the job spectrum, with low pay and poor terms and conditions.’
(Cedefop 2007: p.87)

This expected polarization has a clear gender dimension, with growing occupations at the lower end of the spectrum unbalanced in favour of female-dominated jobs, and growing occupations at the top end of the skill spectrum unbalanced in favour of male-dominated jobs. This adds cogency to the need for de-segregation, because the latter can favour the redistribution not only of labour supply flows but also of opportunities for the development of higher skills. If this to happen, however, de-segregation must be pursued in both directions, by attracting men into feminised areas such as care work, and by further easing women’s access into the managerial professions or growing technical occupations.

Indications from the national reports are broadly in line with this analysis, and at the same time they afford greater details on the occupations involved. The list of occupations singled out by the national experts as experiencing skill shortages, or being at risk of doing so in the medium term, confirms the prevalence of strongly sex-typed occupations and suggests a certain degree of polarization in terms of required qualifications (see Table 6 below).

Shortages of care workers and home helpers – all overly feminized and low qualification occupations – are reported by eight countries, whilst the second group of occupations experiencing shortages is overly male-dominated, skilled or highly skilled, and comprises

engineers and metalworkers. Other occupations where shortages are being experienced or forecasted in at least four countries are builders, drivers and transport technicians on the male side, shop sales staff, cashiers and sales marketing managers on the female side.

Table 6. Skill shortages resulting from national reports

Sector	Occupation	Country
Care and personal services	- Child care - Nurses; - Home helps; - Elderly care workers;	Austria, Belgium, Denmark, France, Iceland, Norway, Portugal, Sweden, UK, Italy
Construction and building	- Builders;	Bulgaria, Denmark, France, Italy, Malta, Poland, UK
Education	- School teachers; - University professors;	Estonia (school), Iceland (primary school), Norway (preschool, University)
IT-sector	- Technicians; - Programmers;	Czech Republic, Malta, Portugal, UK
Mechanical and electrical engineering and production; Manufacturing	- Mechanical engineers; - Electrical engineers; - Metal workers;	Czech Republic, Italy, Poland, Portugal, Slovenia, Spain, UK
Chemical industry		Czech Republic, France
Textile industry		Bulgaria
Telecommunications		Czech Republic, Portugal, UK
Transportation	-Drivers (bus drivers, shuttle transportation, freight vehicles; truck drivers; - Air and marine technicians;	Czech Republic, Finland, Italy, Poland
Mining	- Miners;	Italy
Medicine	- Physicians;	Spain
Financial services	- Financial intermediaries;	Malta
Retail trade	- Shop salespeople, - Sales marketing managers, - Cashiers	Czech Republic, Luxembourg, Ireland, Poland
Services	- Repair workers; - Security staff;	Czech Republic, Luxembourg, Poland, Slovenia
Office jobs	- Clerks;	Luxembourg
Hotels and restaurants	- Waiters; - Cooks;	Bulgaria, Czech Republic, France, Malta
Tourism		Bulgaria
Elementary jobs		Poland

Source: National reports

Summary

This chapter examined three main implications of gender-based segregation, respectively for wage inequality, including undervaluation of female work and discrimination, for job quality and for skill and labour shortages.

Undervaluation is still widespread, but it is more so for low-paid than high-paid occupations. Biases in job evaluation practices, the degree of ‘professionalisation’ of occupations, the length of occupational ladders, the visibility of skills, all emerge from the case studies as important factors.

Cross-country studies do not find a significant impact of segregation on discrimination, whereas detailed, country-specific econometric analysis confirms that segregation between/within occupations and between sectors or industries accounts for a large share of discrimination. This latter finding, however, cannot be taken to mean that all segregation implies pay inequality. The decomposition of overall segregation into a vertical component capturing inequality in hourly pay and a ‘neutral’ component indicates that the latter is often larger than the former.

Segregation may heighten differences in the quality of jobs between men and women, in addition to differences in pay. Concern about differences in job quality partly overlap with the fears raised in the debate on labour market segmentation that the unequal distribution of secure and stable jobs may be exacerbated by segregation. Following the proposal of The European Foundation for the Improvement of Living and Working Conditions four main dimensions of job quality have been considered: career and employment security; health and well-being of workers; reconciliation of working and non-working life and skills development.

Analysis of selective indicators for these four dimensions of job quality suggests that, in addition to pay, important gender asymmetries still concern long working hours, career prospects, and access to managerial and supervisory positions. All of these are channelled via occupational segregation to a greater or lesser extent. Differences are more contained in other respects, specifically the distribution of fixed-term contracts, the chances of transiting from temporary to stable employment, the distribution of non-standard hours, and of opportunities for skill development within occupations. However, modest differences in some of the selected dimensions of job quality do not justify policy complacency. First, differences are still pronounced for some occupations or countries although they are contained for the EU as a whole. Also, the fact that fixed-term contracts fairly equally distributed between the sexes does not make them more acceptable; nor does it cancel the risk that uncertainty about future employment prospects may hinder fertility among the many young women on fixed contracts.

Segregation may oppose efficient reallocation of labour supplies, male and female. Current projections indicate that skill and labour shortages will affect male and female dominated occupations in the medium run more than mixed occupations. Also, several of the female dominated employment areas facing labour shortages such as jobs in the retail and in the care sector are poor in (formally recognised) skill. In contrast, several male dominated occupations at risk of shortages are found in highly qualified areas of employment, such as computing. A de-segregation approach targeted at labour shortages could thus facilitate redistribution of flows where labour is most needed while at the same time redistributing opportunities for skill development. For this is to happen, however, de-segregation ought be pursued both ways, attracting men into feminised areas such as care work, and further facilitating women’s access to managerial professions or growing technical occupations.

4. Policy issues

4.1. *The policy toolkit*

Given the variety of factors recognized to influence gender segregation in employment, it is hardly surprising that policies addressing the root causes of the phenomenon, or its implications, are very diverse within and across countries. Policies have also changed over the years, with the change being driven more by perceptions of topical priorities in a given country than by effective monitoring and ex-post assessment. In view of this diversity, the first part of this chapter restricts its attention to the current decade and to significant initiatives. There will follow a discussion on the effectiveness of these policies and the biases that they reflect. Recommendations on the most promising directions for future action in this area will conclude the chapter.

Policies to tackle segregation have a long-standing tradition in relatively few member states, primarily the Scandinavian countries, the UK, France, the Netherlands and Germany. The Southern European countries are still grappling with low female participation. Their policy interest lies less with specific de-segregation policies than with general provisions for the reconciliation of work and family life. For some of these countries – especially Italy and Malta – this weak interest may be partly explained by relatively low levels of segregation, but it remains to be seen whether the increase currently under way will change the policy agenda in the near future.

Whilst there are differences of approach and of policy commitment between Nordic or Continental countries and the Mediterranean group, a much stronger divide distinguishes Western and Eastern countries in regard to employment segregation. For Eastern European and other recent member states the debate on segregation is generally very recent, or there is hardly any policy debate at all, let alone a policy approach. Little or no interest on the part of these countries has less to do with their comparative levels of segregation – some of them are highly segregated, others are not – than with the fact that they have not experienced feminism.

The provisions to be examined in this chapter are grouped under the two broad headings of ‘societal’ and ‘labour market’ policies. The former include general provisions to raise awareness of gender segregation, educational programmes to counter stereotypes at school and media, and communication initiatives to counter stereotypes and spread information among the general public. Labour market provisions include training and the countering of skill and labour shortages; they also include programmes to identify and oppose biases in job evaluation procedures, pay systems and in other organizational practices concerning selection, recruitment, career ladders, and job assignment.

Policies on reconciliation are of great importance for segregation. The previous chapters have clearly identified the unequal distribution of the care burden and differential income commitments as a very important root cause of segregation. Nonetheless they are not included in the discussion here because recent reports from the Network have been specifically devoted to this issue (Fagan 2003; Plantenga and Remery 2005).

General forms of institutional support for gender equality such as the recent creation of the Ministry for Gender Equality in Spain can make a large difference in the drafting or implementation of policies on segregation and gender equality at large. However, they also will not be considered in the current report because the connection with specific policy measures is rather indirect.

The next three sections illustrate the main provisions in place or recently implemented by the Member states to specifically counter gender segregation in employment. The penultimate section assesses the consistency and effectiveness of each main group of policies with respect to their target, and pinpoints biases. The final section puts forward some general recommendations for an integrated policy approach to de-segregation.

4.2. Societal policies

Most of the countries with the longest traditions of de-segregation policies show willingness to address the ‘early in life’ roots of segregation by investing in ‘motivational events’ or in educational programmes designed to positively encourage ‘atypical’ choices among young boys and girls, and to promote new role models. In Denmark, a spate of initiatives to break down segregation in the choice of education, as well as of occupation or trade, is alleged to have followed the publication of research by Holt et al. (2006) finding that gender segregation is due to choice of education, family background and social heritage. Research may have been an important catalyst in the Danish case, but Denmark is not an isolated example. The Icelandic Equal Opportunity Office plans to hire a person with the sole task of visiting primary schools in order to make young people more aware of how gender influences their behavior. In Finland, moreover, the National Thematic Network for Desegregation in the Labour Market (2003 – 2007) – the main plan of action in this policy area – has prioritized the twin objectives of motivating children and young people to make choices atypical of their sex, and of training teachers and educational counsellors to advance gender equality via education.

An important question is whether this is any different from the hundreds of programmes implemented in the past in Nordic Continental countries or Mediterranean countries to encourage girls to take up technical subjects or natural sciences. The ‘Glass House’ initiative in the Netherlands recently co-financed by the government and the European Social Fund seems to follow traditional lines, because its intention is to influence girls in vocational and secondary education in favour of technical subjects, but it does not question the choices of young boys. However, emphasis on ‘atypical’ rather than ‘technical’ subjects in Finland or Denmark is a subtle but important way to indicate that young men, too, can be encouraged to enter stereotypical female jobs, not just the reverse. The pressure exerted in Scandinavian countries by labour shortages in feminized occupations, like pre-primary teaching or care work, makes this change in perspective particularly cogent (see the case studies in Part II).

Instances of ‘motivational events’ in Germany, Liechtenstein and Switzerland confirm that choices for men are also beginning to be questioned. Public information campaigns to encourage less traditional choices among boys and girls like the *Girls' Day* and *the New Pathways for Boys* in Germany, and the *Father's Day* in Liechtenstein and Switzerland are especially inspiring because they directly involve companies (see Box 5). An equally significant instance of involvement of companies in the fostering of atypical occupational choices is offered in France by the Federation Française du Bâtiment (FFB). In 2004 the FFB launched a massive campaign for a threefold increase in the number of women in building sites and workshops. This is a clear example of how skill and labour shortages can readily inspire efforts to challenge stereotypical choices. At the same time, however, it is hardly a novelty that women are called to enter male industries that men find less attractive.

The FFB campaign includes use of the media and of appealing rhetoric, as potential female candidates are told that they are being offered a chance to take part in ‘revolutionary changes’. The rethoric is different, but equally strong when the aim is that of attracting men in female

dominated professions. The Federation of nurses in Iceland has launched a media campaign to attract men: in this case, however, a chance to work in war zones was promised!

Box 5. Motivational events

Germany. *The Girls' Day* – Mädchen-Zukunftstag (Girls' Day – Future Prospects for Girls) has initiated a large-scale campaign in which experience obtained to date has been used and a wide range of occupations and activities have been presented to girls in the age-class 5 to 10 attending lower-secondary school. Companies that have successfully organised specific Girls' Days report an increasing number of young women in technical and technically-oriented occupations. Targets similar to those of the Girls' Day are pursued by the national project *Neue Wege für Jungs* (= New Pathways for Boys) which started in April 2008. This project consolidates, supports and encourages regional activities aimed at boys in the lower secondary school and addresses the issues of career and life planning in a gender sensitive way. The project primarily seeks to amplify the occupations chosen by boys. New Pathways for Boys also bundles already existing projects and initiatives for boys, above all at schools at which Girls' Days have been arranged on the same date. A gender-sensitive education policy is essential for changing the career choices of girls and boys. This implies that all actors (e.g. parents, schools, employees, universities) must pull together and achieve equal opportunities in all fields. (Maier 2008)

Liechtenstein and Switzerland. Several such initiatives are reported for Liechtenstein and Switzerland. The "*Strong Women – Complete Men*" project ("*Starke Frauen – Ganze Männer*") is an experiment undertaken in Liechtenstein since 2000 where boys and girls in secondary school are asked to swap roles for four days. The girls take part in crafts and technical tasks while the boys are involved in social and domestic activities. In a similar project titled *Women's Occupations – Men's Occupations* ("*Frauenberufe – Männerberufe*") boys spend one day in various kindergartens, while girls visited a technical enterprise and Liechtenstein's College of Advanced Technology. Since 2001, Liechtenstein and Switzerland have also jointly conducted a *Daughters' Day*, when girls in the 4th to 9th year of school accompany their father to work for one day. Since 2004, *Daughters' Day* has been replaced by *Fathers' Day* when children visit their fathers at work and fathers are invited to visit children at school and in kindergarten. Three *Fathers' Days* have already been conducted since 2004. Almost without exception, they have met with a positive response on the part of the involved businesses, fathers, and children. (Papouschek 2008)

4.3. Labour market policies

Training. At European level, most of the policy action for de-segregation is concentrated on training, since this is the traditional tool employed for this purpose and which is still the most popular policy option. Female and male employees participate in vocational training course on a fairly equal basis, although women receive, on average, 10% less in hours of training (Box 6). However, 10 member states are reported to have recently implemented governmental training programmes specifically devoted to counter segregation - Austria, Belgium, Finland, France, Germany, Greece, Norway, Portugal, Sweden, and the UK.

The actual number of countries offering training programmes aimed totally or partially at de-segregation is probably larger, for two reasons. First, in countries such as Iceland, special training programmes to overcome horizontal or hierarchical segregation (or skill shortages) are left to educational institutions, the private sector and individuals to introduce, so that initiatives may not be public knowledge. More generally, training initiatives are reported to suffer from poor visibility. For example, more than 500 projects were carried out by the Swedish National Labour Market Administration between 1993 and 2001, but their visibility was low.

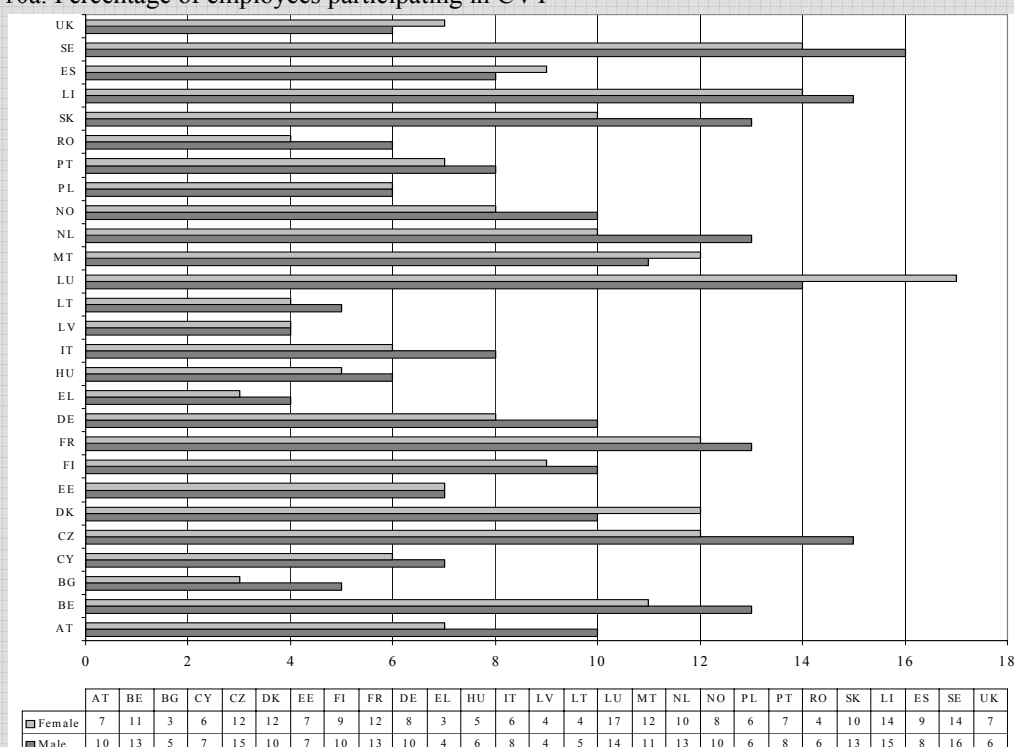
As with vocational education, de-segregation via training has often been sought only in one direction, i.e. to provide women with 'male', generally technical, skills without questioning the occupational choices of men. The national reports record fewer exceptions to this rule than is the case for education, and suggest that labour shortages play a role. One clear example in this regard is the earlier noted process of professionalisation among elderly care staff in Austria, where more training provisions have been put in place for the newly-created position of 'assistant nurse' (see case study in Part II).

Box 6. Training and segregation

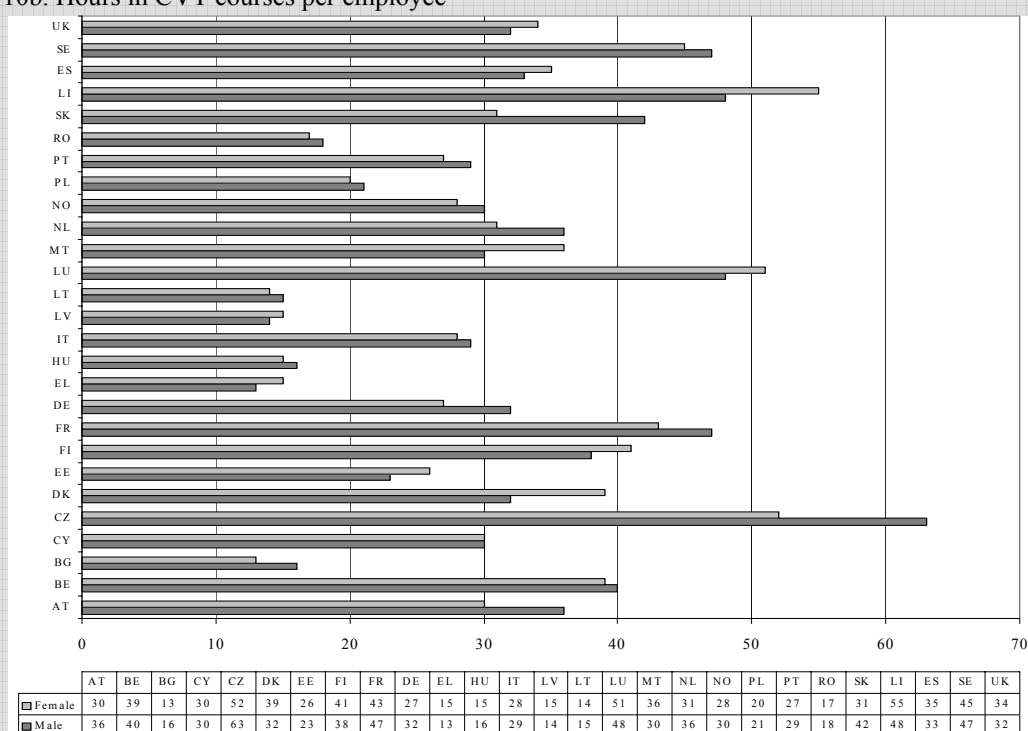
Female and male employees participate in vocational training course on a fairly equal basis. In fact, the share of female participants is higher than or very close to that of men in 14 out of the 28 countries listed in Figure 10a. Female employees, however, consistently receive less hours of training in all countries, although the absolute difference in hours is contained, and it diminishes further if it is taken in ratio to the respective hours of work. Taking the simple average for EU countries, men receive some 10% more hours of vocational training across all sectors (Figure 10b; see also Table A.2 in the Appendix for sectoral breakdown).

Figure 10. Training of men and women in Europe, 2005

10a. Percentage of employees participating in CVT



10b. Hours in CVT courses per employee



Source: own elaboration on Eurostat 2005 data

Job evaluation and certification of skills. In principle, unbiased job evaluation could remove undervaluation from women's jobs. However, few countries have a tradition of job evaluation. Among them are Belgium, Germany, the Netherlands, the UK and Finland. The attempt to use job evaluation in order to address segregation is not new in Belgium, but, since it did not prove successful, no new attempts are reported for the current decade. In contrast, a fresh attempt was made in Germany in 2003, when the social partners revised all collective agreements in the public sector. The new job evaluation system only partly meets the formal requirement of creating 'an attractive, future-orientated and gender-fair job evaluation and grading system that uses uniform evaluation criteria' (ver.di Bundesvorstand 2003: p.3). The system is more transparent than it was in the past, but many female-dominated service occupations still lie at the bottom of the pyramid.

Investigations conducted in other countries conclude that biases arise not so much from job evaluation systems *per se* as from the way in which they are implemented. In Finland, attempts to improve job evaluation systems in order to reduce the gender pay gap date from the 1990s. Recently, the National Thematic Network for Desegregation in the Labour Market has re-examined the issue and concluded that, in order for the system to favour more gender equality, organisations should monitor it constantly, paying special attention to standardizing procedures across different bargaining systems. Similarly in the Netherlands a 'quick scan programme' - a guide for gender-neutral policy evaluation to provide ready insights into pay structures - was made available to firms, and a working group on equal pay was also set up to develop policy initiatives in 2006-2007. The group concluded that job evaluation systems themselves are not the cause of gender pay differences; rather incorrect implementation of these systems is to blame. Norwegian companies, too, can make use of a job assessment tool developed in 2001 on government funds with the explicit aim of reducing the gender wage gap. The tool enables the company to determine whether the actual rate for the job differs from that calculated by the programme. However, there are serious limitations in the effectiveness of this tool. Within establishments, wage differentials are generally smaller, and the larger differences arise between firms. Moreover, even when this tool discloses discrepancies between the job value and the actual wage, this does not necessarily imply discrimination, because the characteristics of workers are not taken into account in calculations of job value.

Certification can also be used to fight the poor visibility, and thus undervaluation, of 'female' skills. However, good practices in this respect are not so frequently mentioned in the national reports. One exception has already been noted: the Certificate of Occupational Skills (proposed by the French organization (Box 14). However, certificates have shortcomings as well. The Volunteer Work Certificate was introduced in Lichtenstein to give women returning to the labour market social recognition of the unpaid work performed during their period of absence, as well as to facilitate re-entry. It is alleged, however, that recognition of traditional female competences may end up reinforcing gender stereotypes.

Positive action. The drive for positive action in Europe lost momentum in the late 1990s, when the European Court of Justice ruled in the *Kalanke v. Freie Hansestadt Bremen* case that a German state law guaranteeing women automatic priority over men in the labour market was contrary to the European Equal Treatment Directive. Since 2004, however, the Norwegian success story for quotas on company boards has been revitalizing interest.

In 2004 Norway implemented a mandatory 40% quota for women's representation on company boards. Despite initial scepticism, the quota was fulfilled within the two-year period prescribed by the Law (Ellingsæter 2008). This success has prompted the introduction of quotas elsewhere: Portugal has set quotas for women in training, whilst in Greece a 30% quota has been introduced

for promotion panels within the public sector. In the Netherlands, the government has committed itself to a target for the representation of women in decision-making governmental positions, although it has not gone to the full extent of introducing mandatory targets.

Two examples of ‘soft’ positive action measures are provided by Austria. In 2008, the Austrian Federal Ministry for Economic Affairs and Labour proposed adding a quota for women to a protocol of the Austrian ‘Corporate Governance Codex’, a body of regulations covering large Austrian enterprises listed on the stock exchange; commitment to the quota would be on a voluntary basis. The second proposal by the Austrian Government is to award a grant of €10,000 to the ten best positive action plans for women in Austrian small and medium-sized enterprises.

Un-biasing organisational procedures. Few novel provisions to address biases in organizational practices are recorded in the national reports other than job evaluation or certification of skill. One reportedly successful exception is the introduction in France of the obligation for companies where at least one Trade Union is represented to carry out specific bargaining each year on occupational equality at company level. The measure is alleged to be proving effective.

4.4. Policy assessment

Are policies in place consistent with their declared target – segregation – and therefore effective? The first general remark about the effectiveness of segregation policies is that they very often suffer from poor coordination, targeting, monitoring and follow up. The Trade and Industry Committee recently argued that in the UK ‘there is an “over proliferation of initiatives with little co-ordination”’, with too many different funding sources and a tendency for the funding of pilot schemes to run out just as they have started to show results (House of Commons, Trade and Industry Committee, 2005:26, quoted in Fagan 2008). Although no report from the other countries with a long-standing policy record in matters of segregation makes an equally critical assessment, the overall picture that is offered by the national reports is often not dissimilar from that of the UK: at best, a wealth of initiatives are still in search of an effective, coordinated strategy. The scope, variety and resilience of the phenomenon has not facilitated co-ordinated and focused action, but a lack of strong policy motivation is certainly to blame.

Related reasons for disappointment are poor targeting and a lack of monitoring or follow up. In Portugal, for instance, the training of women for technical male occupations in engineering or computing has been discontinued because the first female trainees did well in the courses but met with hostile environments once they took up the jobs, and then quit. In a Mediterranean setting, the male culture at work can indeed be rather unpalatable to women, and a follow-up programme might have helped the pioneers to meet the challenge. However, there was no follow-up and the resources spent on training were simply wasted. This is not to endorse uncritically the policy of training women for technical jobs, some of which that may have lost attractiveness for men; rather, what is argued is that training per se may not work, unless it is part of well-designed, coordinated policy package.

Training attracts two main criticisms. The first is that general training provisions tend to reinforce segregation. This earlier finding by Rees (2001) is echoed in a surprisingly large number of reports from old and new member states. The second criticism is that training specifically devoted to de-segregation has targeted women, rarely men – as repeatedly documented earlier.

In the past, this short-sighted approach to training may have been partly justified by the fact that women were still a labour reserve in many countries, and labour or skill shortages arose primarily in male-dominated occupations, although the latter inevitably involved work that was no longer so appealing to men. With 10 member countries near or above the seventy percent mark in female participation, coupled with the fast growth of feminized services and care occupations, shortages for female-dominated occupations have already surfaced in a number of countries and are expected to continue in the medium term (see section 1.4). Thus, training programmes to overcome shortages by way of de-segregation cannot fail to pursue men's entry into female jobs.

Could this succeed? There may be too few experiences and too limited evidence for sound guidance to be forthcoming. However, the recommendations put forward by the national experts suggest that two additional policies must be pursued in parallel with training in order to buttress the chances of success. The first is resorting to educational programmes and the media to challenge stereotypes from an early age. The second is policies to address the undervaluation of female jobs: pay is very important to attract men. Moreover, if de-segregation is to be used to effectively address skill shortages in both female and male dominated jobs, this radical change of perspective may require an overhaul of apprenticeships systems currently in place.

Concerning motivational events and public campaigns to challenge stereotypes, the earlier quoted example of 'Rosie the Riveter' is illustrative of how powerful concerted media campaign can be in changing stereotypes. Concerning education, recent research (Holt et al. 2006), evidence from the case studies as well as statistical evidence (Box 1) all concur to suggest that educational choice have at least some impact on de-segregation.

Undervaluation is far more difficult to tackle and, as seen, is of primary concern among low pay workers. In this respect, job evaluation is still an important tool where there are overt biases, as in the case of police workers in Slovenia or maintenance cleaners in Germany. However, in the three countries that have closely investigated the issue – Finland, the Netherlands and Norway – experts' opinion concur that the way the system is implemented is more important than the features of the system itself. In this case the recommendation is to monitor implementation.

Certifying underrated and poor visibility skill can also help fight undervaluation, and likewise for designing or re-designing occupational career paths so as to offer prospects of skill and pay progression also in jobs at the bottom of the pay pyramid, e.g. among home carers.

Ultimately, fighting undervaluation among low pay workers raises questions that go beyond the problem of segregation and encroach on the larger issue of migrant labour. The rapid expansion of home based long term care in Mediterranean countries is an illustrative instance of how shortages in low pay care occupations can be filled by migrant workers, female, cheap and often irregular. The attempt to challenge occupational segregation or undervaluation in this context is fraught with difficulties, and can only succeed if it takes the problem of migrant labour on board.

In high paid occupations vertical and hierarchical segregation are the key concerns, i.e. re-segregation within lower paid niches within professions and/or glass ceiling barriers. In this case a definite shift of focus towards organizational practices and away from supply side explanations where gender differences inevitably boil down to lower productivity for women is promising. One general indication is that standardized, transparent procedures for selection, hiring and promotion are less biased against women than discretionary ad hoc procedures. In the wake of the latest Norwegian examples quotas should be reconsidered as effective tools to improve representation in decision making positions. Additional indications, however, are inevitably

specific to the occupation and the country, as so much depends on the details of the institutional setting.

Finally, the degree to which de-segregation can reduce gender wage inequality depends on payment structures and the system of collective bargaining, since for the same amount of segregation pay inequality may be higher if wage bargaining is decentralized rather than centrally coordinated, or if provisions for minimum wages are not in place. Payment structures have been included in the discussion of this chapter and the previous ones, but attention has gone into specific occupational features rather than general characteristics. The latter are of primary interest in regard to the overall wage gap, and as such have been discussed at length in (Plantenga and Remery 2006)

General recommendations

Segregation depends so much on institutions and culture that any successful policy packet is necessarily country specific. However a set of common principles to ensure consistency for an integrate package as well as effectiveness has emerged from past and current experiences in member countries:

- Use aggregate, statistical indicators of change in segregation with caution. A trade-off between decreasing segregation and increasing female employment may exist in the medium term.
- Ensure effective coordination among the different programmes and initiatives. Too many ad hoc programmes may be ineffective.
- Give central role to reconciliation policies.
- Shift the policy focus from the supply side of individual gender differences to the way organizations work.
- Address biases in organizational practices for selection, hiring and promotion, skill recognition, structuring of career tracks, job and skill evaluation.
- Aim at changing the attitudes, competences and choices of men, not only those of women.
- Pursue de-segregation also in view of addressing skill and labour shortages. This requires an integrated policy approach that not only promotes training but also implements educational programmes and media initiatives in view of fighting stereotypes and encouraging new role models.
- In addressing skill and labour shortages, do not fail to also address low pay in feminized occupations in order to encourage men's entry.
- In addressing skill and labour shortages, evaluate potential conflicts but also synergies between de-segregation and reliance on migrant workers.
- Specify clear programmes' targets, monitor initiatives and ensure follow-up. Even cultural and attitudinal change can be measured.

PART II. CASE STUDIES: HIGHLIGHTS FROM NATIONAL RESEARCH

Issues addressed

This second part of the report reviews research at the national level on ten occupations: *university professors, doctors, financial professionals, IT technicians, lawyers and judges, home helpers in elderly care, nursery care workers and pre-primary school teachers, cleaners, retail sector and police.*

Each case study draws from research in a different number of countries, from a maximum of 9 for university professors to just 1 country for the police force. Occupations have been chosen so as to ensure adequate representation of high-paid and low-paid areas of work, and preference has been given to those having recently undergone significant change in feminisation either way.

Being based on secondary sources, each case study draws from specific investigations that differ in scope and in methodology across countries. However prior guidelines about the kind of information to be extracted from existing research made it possible to pursue a broadly common set of questions across the case studies.

The most frequently provided information concerns the current gender mix in the occupation in a comparative perspective, recent and prospected change in this mix, re-segregation in occupational niches and along hierarchical lines, as well as contractual and working conditions. Only few case studies yield actual data on the level of and change in the gender pay gap, or the ranking of the occupation in the national pay hierarchy. A few case studies also report on the terms of the national discussion about the implications of feminisation. Common questions being addressed concern the factors driving or opposing feminisation, whether loss of pay or prestige has followed feminisation, which processes are at work in case of discrimination or undervaluation of women's work, hierarchical segregation or re-segregation into occupational niches.

Although the findings have been used extensively in Part I, this review of case studies is of interest in its own because it serves to better contextualise and enrich the specific results and because it provides extensive reference to research in Europe on the different occupations and themes.

1. University professors

(Belgium, Cyprus, Germany, Iceland, Italy, Netherlands, Malta, Slovakia, Sweden)

Horizontal and vertical segregation. Teaching is a highly feminized occupation across the European countries, but not in tertiary education, where the overall share of women is high within EU25 (43.1 in 2007) but still well below fifty percent. Women outnumber men in four countries – Luxembourg, Belgium, Latvia and Lithuania – whilst elsewhere tertiary education teaching is a mixed occupation according to Hakim's criterion, and often becomes male dominated within the most prestigious subgroup of university teachers.

Within tertiary education university teaching is far less feminised. Recent figures for the overall proportion of women among university teachers are not available at European level, but if we take the case of Italy, where women are comparatively well-represented within universities, the female share of faculty was 32.9 in 2007, nearly 8 points lower than among all tertiary education teachers (40.6%: Table 7).⁹

Table 7. Share of women among college, university and higher education teaching professions, 2007

AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
49.1	51.7	44.8	41.8	37.2	37.1	43.3	48.1	27.1	38.4	43.8	44.1	32.2	45.9	40.6	73.9	100	75.8	46.4	37.4	40.8	39.7	42.8	42.1	37.7	38.2	40.6	49.4

Note: the occupation corresponds to ISCO 231

Source: Own calculation using LFS

Pronounced hierarchical segregation is perhaps the hallmark of this occupation, especially among university lecturers. Women account for less than 15% of the top professorial rank in 12 countries, and for less than 30% in all EU15 countries (Eurostat 2008: Tab. A.47).

Table 8. Female academic staff as a % of total by grade, 2004

	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	IS	NO
A	9.0	18.0	10.3	10.9	9.2	17.2	0.0	11.3	17.6	16.1	16.4	10.2	26.5	12.1	0.0	15.4	2.3	9.4	9.5	19.5	20.9	29.1	12.9	13.5	21.2	16.1	15.9	15.1	15.7
B	20.8	34.9	22.1	24.4	16.1	37.1	0.0	22.7	36.1	38.7	31.4	17.3	37.0	37.4	0.0	30.9	31.7	14.2	16.2	27.4	34.4	49.1	25.8	31.5	46.6	38.6	31.2	29.9	28.2
C	33.1	0.0	40.2	37.6	25.9	56.6	0.0	31.9	52.2	0.0	43.8	37.5	0.0	49.5	0.0	46.0	14.2	26.9	35.6	41.0	43.4	0.0	39.3	48.5	52.9	40.0	46.1	53.0	45.5
D	46.6	52.4	48.8	42.7	35.6	66.6	0.0	39.4	50.6	39.3	0.0	33.5	0.0	59.9	0.0	36.7	25.0	39.4	37.9	0.0	50.4	55.2	47.9	54.3	42.8	50.0	46.1	41.6	48.8
	109.5	105.3	121.4	115.6	86.8	177.5	0.0	105.3	156.5	94.1	91.6	98.5	63.5	158.9	0.0	129.0	73.2	89.9	99.2	87.9	149.1	133.4	125.9	147.8	163.5	144.7	139.3	139.6	138.2

Key: Grade A: The single highest grade/post at which research is normally conducted within the institutional or corporate system;

Grade B: Should include all researchers working in positions which are not as senior as the top position (A) but definitely more senior than the newly qualified PhD holders (C); i.e.: below A and above C; Grade C: The first

grade/post into which a newly qualified PhD (ISCED) graduate would normally be recruited within the institutional or corporate system; Grade D: Either postgraduate students not yet holding a PhD (ISCED) degree who are engaged as researchers, or researchers working in posts that do not normally require a PhD.

Note: countries marked in bold are those included in the case studies reviewed

Source: Eurostat 2008: Tab. A.47

Relative pay and devaluation. A well-known finding from past studies is that women's entry into an occupation brings with it a lowering of pay or is accompanied by re-segregation into the lowest paid occupational niches. However, no clear evidence that this may be happening emerges from the nine countries reporting on university teachers: Belgium, Cyprus, Germany, Iceland, Italy, the Netherlands, Slovakia, Sweden, Malta.

Slovakian university teachers do not enjoy prestige or high pay. New universities have recently been opened and the share of female faculty staff jumped to 24% in 2006 after oscillating between 10% and 15% for a long time (Piscová 2008). It is a matter of speculation whether this increase signals a flight of men in search of better opportunities elsewhere, or whether it ensues

⁹ Our calculation on LFS data for 2007, ISCO-88 3-digit; Bettio and Verashchagina (2008: Fig. 2).

from the fact that new cohorts of highly-educated women have been able to seize opportunities that have opened up for academic teachers.

In both Cyprus and Italy, and especially the former, teaching at university still features as a well-paid public-sector occupation on a life-long basis. In the absence of further evidence, one might speculate that high pay and prestige of the profession in Cyprus contribute to keeping women's share of the top two teaching positions pegged at the lower end of the European range (10.2 and 17.3, respectively, versus 29.1 and 49.1 for Romania, the top scorer).

The case of Italy offers the opposite suggestion, as no clear association is detectable between relative opportunities for earnings and the overall increase in female faculty in recent decades, or its distribution across disciplines (Bettio and Verashchagina 2008). The main reason is that pay-setting is strongly influenced by institutional procedures, e.g. increases for university teachers are linked to those of magistrates, the highest-paid occupation in public employment after top management. Moreover, seniority increments are perhaps the most important determinant of the size of pay packet, even more so than promotions.

The role of educational choices. Among university teachers, opportunities for earnings are generally influenced more by the relative position in the academic hierarchy than by the discipline chosen. It is therefore not surprising that research in the various countries has focused on differential career opportunities for women, and on the glass ceiling. The role of family, educational choices, stereotypes, academic selection procedures and co-option mechanisms have all been blamed for slower and less brilliant career achievements among women, but a shift is taking place away from emphasis on supply side factors and gendered choices or preferences towards underlining the importance of institutional mechanisms, especially the formal and informal procedures involved in selection.

A fairly common belief is that the career chances for women have been hindered by educational choices that segregate women into a limited number of disciplines, thereby reducing the pool of suitable candidates in non-traditional areas to below critical proportions. Despite the fact that women are still a minority in several disciplines, the argument is confounded by evidence that women do not fare better in female-dominated subjects. In Germany:

'The concentration of women in stereotypical subjects has traditionally been used to explain the low number of female professors, especially for large and expanding areas of tertiary education like business administration or health. The argument is based on the assumption that there are not sufficiently qualified women for the relevant professorships. However, detailed research on academic careers in different fields has reached the conclusion that in nearly all disciplines the number of women in the relevant field holding the relevant qualifications exceeded the number of positions offered. Women's concentration in traditional subjects has not led to a larger number of female professors in these subjects. Women's chances of obtaining a professorship is even worse in female dominated subjects: since 1984, 12 men out of 1000 graduates in all subjects have become professors, as against 4 women out of 1000 graduates. However, the respective figures for engineering are 8 out of 1000 for men and 6 out of 1000 for women, whereas those for humanities and arts are 21 out of 1000 for men and 4 out of 1000 for women.' (Wissenschaftsrat 2007, p.16)

Slower career for women in female-dominated subjects is also reported for Belgium – where an inverse correlation has been found between the share of women and the rate of transition from the bachelor degree to the doctorate (De Henau 2006). Similarly, in Italy female faculty has increased less in the arts than in some less stereotypical and male-dominated disciplines like chemistry, agricultural science, engineering and medicine (CSVNU 2007: Tab. 3.10, p.40). In

the future, however, the choice of subject should matter progressively less, given that the high share of female students is favouring de-segregation in university curricula, with the exception of mathematics and science (Eurostat 2008: p. 38).

Stereotypes. Stereotypes are still being used to discriminate against women in academia, as a recent study for Iceland highlights.

'Recently, a discourse analysis was undertaken to identify the extent to which evaluation of job applicants at the University of Iceland has disadvantaged female applicants. The analysis focused on written judgements made by various evaluation committees of male and female applicants applying for academic positions during the period 1997-1999. The findings revealed an extensive use of gender-based language when the merits of men and women were assessed. Male candidates were said to be engaged with difficult projects (glíma við erfið verkefni) while female candidates were working on something (hafa eitthvað á þrónunum). Moreover, the work of male candidates was discussed in much more detail and the evaluation was less critical than was the case with the work of female candidates. When male candidates had applied a gender perspective in their research, it was regarded as a sign of being open-minded while such research undertaken by a female candidate was described as a rather narrow perspective or as being marginal research. Finally, the evaluation committees valued continuous research activities, but women have greater difficulties in fulfilling this requirement due to the bearing and rearing of children.' (Þorvaldsdóttir 2002, quoted by Mósesdóttir 2008)

However, stereotypes may also be used by women to seek legitimate niches in strongly male environments, as the contrast between young and older female faculty in engineering in Italy suggests.

'In their study of the engineering faculty at the University of Naples, Vicarelli and Bronzini (2008) found that previous cohorts of female faculty were (comparatively) over-represented in subjects like mathematics, which is considered peripheral to the disciplines because it does not belong to the technical 'core' and because opportunities for earnings other than in teaching are limited. In contrast, young female faculty engineers are breaking stereotypes by growing faster in core subjects like mechanical, electrical, civil or computer engineering. Educated women first entering occupations dominated by male culture and practices may thus be seen to exploit stereotypes in order to ease acceptance. Once the presence of women is somehow 'accepted' the process of breaking stereotypes becomes less costly.' (Bettio and Verashchagina 2008)

Supply side or institutional factors? In countries like Italy or Germany, evidence of changing behaviour among younger female faculty has shifted the focus of the debate from supply-side factors to the rules and procedures of what may be termed an internal labour market in academia, including the importance of 'old boys networks'. In Germany, gender differences in preferences, attitudes or commitment to career, like investing less in self-promotion, publishing less, doing more teaching instead of research or taking career breaks in view of the primary commitment to raising a family, appear to play some role, but they do not fully account for the persistence of vertical segregation (Lind 2006, p.4). In other words, the way women are or behave in comparison to men is believed to have been overestimated in past research, whilst insufficient attention has been paid to the way academic institutions are and behave (Wissenschaftsrat 2007, p. 20).

Even more explicit on this point are the results of one of the most in-depth studies on university teachers carried out in Italy in the late 1990s (Carabelli et al. 1999). The study investigated the career paths of teachers of economic subjects based on longitudinal administrative records for the entire population of academic economists. It also made use of publication records drawn from bibliographical data banks and of a questionnaire administered to the female component in order to explore the importance of family conditions.

‘One of the main findings is that being married or the size of the family (number of children) had no clear impact on publications or career progression. At the time of the study, in fact, more than one third of the female economists were single or childless; among women with children, moreover, the number of children increased both at the bottom and at the top of the publication records or the career ladder (Bettio 1999). In general women were found to publish less, but, controlling for publication, the study found evidence of lower probabilities of climbing up the career ladder and concluded that one of the main factors involved was much weaker networking resources. While the evidence for these findings is sufficiently robust, generalization to the current situation may not be entirely warranted. Economics remains a male preserve, although increasingly less so, but younger female cohorts may not be prepared to give up family and to entirely devote themselves to career as the pioneers in this occupation often did.’ (Bettio and Verashchagina 2008)

De-segregating? Progress in both vertical and horizontal de-segregation is reported for the majority of the countries surveyed (Italy, the Netherlands, Slovakia, Sweden). No common measure of de-segregation is available except the percentage rise or fall of the female share in each successive rung of the academic ladder. Stichting de Beauvoir (2006) has proposed an interesting ‘glass ceiling index’ which can also be used to monitor progress in hierarchical de-segregation over time. Applied to the data for the Netherlands, the index shows that segregation is higher at the top and at both extremes of the faculty pyramid, less so in the middle (Box 7).

Box 7. Monitoring progress in hierarchical segregation: the glass ceiling index

The Netherlands. Based on the share of women in different academic positions, a glass-ceiling index may be calculated. This refers to barriers against women having an academic career. This index is calculated by dividing the share of women in a particular position by the share of women in the next higher level. If women have no obstacles to climbing the academic ladder, the value would be around 1 (Stichting de Beauvoir 2006: p. 21).

Table 9. Glass ceiling index for women in scientific occupations

	Glass ceiling index
Senior university lecturer / Professor	1.6
University lecturer / Senior university lecturer	1.8
PhD/University lecturer	1.5

Source: Stichting de Beauvoir (2006), quoted in Plantenga and Remery 2008

Overall, progress, is deemed to have been slower than might be expected on the basis of women’s advances in education. Labour Force Survey data for all teachers in tertiary education support this claim. If we allow for a three-year ‘production’ lag and compare female progress in attaining a postgraduate degree with advances in the share of female teachers in tertiary education, the latter is lagging behind. Compared to six years earlier, women in 2004 had gained 6.2 percentage points in their share of graduations in tertiary education, whilst their representation hardly increased among teachers between 2001 and 2007.¹⁰ Thus it is not simply a

¹⁰ Our calculations on LFS data and table Eurostat (2008: Tab. A.19).

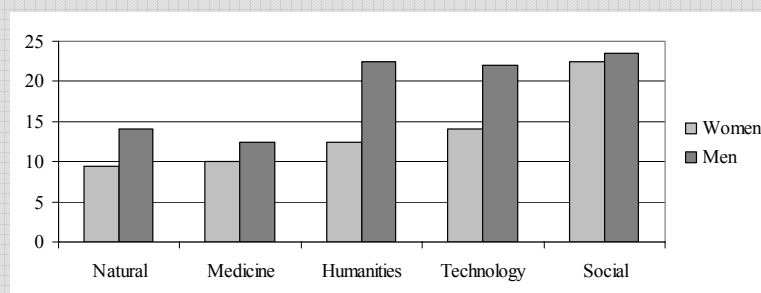
matter of waiting for the highly-educated young cohorts of women to close the gaps. Sweden, Malta and Belgium tell different versions of this story for university teachers, as shown in Box 8.

Box 8. De-segregation within academia: just a matter of time?

Belgium. In 2001, the academic staff in Belgian universities included 14 per cent of women (in full-time equivalents), and women accounted for 8 percent of professors. Some professors interviewed by De Henau and Meulders (2003) disputed this finding on the grounds that it painted an over-simplistic picture of the great diversity existing among faculties, universities, hierarchical grades and years; others maintained that parity is being achieved spontaneously and will be complete within twenty-five to thirty years. Closer analysis does not, however, give cause for such optimism: the pace of change in female representation, judging by the trend over the past fifteen years, is rather slow: it would take almost forty years to have as many female as male assistant professors, seventy years to achieve a gender balance for academic staff as a whole, and 183 years – about seven generations – before men and women were equally represented among university professors in Belgium's French Community. This stasis is confirmed by other indicators. The proportion of female permanent staff is higher among those aged under forty than on average, in all subject areas (first and foremost health sciences and applied sciences), yet vertical segregation in terms of senior positions is also more pronounced among that group.

Sweden. In Sweden progress in post-secondary education among women has been considerable. In 2000/04, women accounted for 63% of graduates. Of those who started their doctoral studies in 2005, half were women and half were men. Of those who took a doctor's degree, 55 percent were men and 45 percent women (Högskoleverket 2006). But the occupational pyramid is still very thin at the top for women. They have reached 45% among 'other researching and teaching employees' 40 percent among research assistants, 34 percent among senior lecturers and a very low 16 percent among full professors. This low proportion of women among professors is of course partly a result of under-representation among doctorates in the past: in 1969/70, only 8 percent of those who took a doctor's degree were women, in 1979/80 they were 18 percent. But this is not the only factor, and the National Agency for Higher Education has carried out a longitudinal study to investigate the issue. The share of doctors becoming professors has increased for men and women over the years, partly because of a change in the procedure to acquire professorship. However gender differences persist and are summarized in the chart below reporting the proportion of men and women who achieved professorships within 18 years after receiving a Ph.D. In all fields, the chances are greater for men than for women, which can be seen as evidence of systematic undervaluation of female competence. Women do comparatively better in social sciences and worse in the humanities and technology.

Figure 11. Proportion of women and men appointed as professors within 18 years from receiving a doctor's degree among those who took the degree 1980-1985 (and younger than 60 years)



Source: Högskoleverket 2006: p.78

Malta. Although women now account for more than half of university graduates, success in education is not percolating down the workplace. A case study of women graduates in Malta critically assesses public claims to gender equality by way of a random, purposive sample of 39 women who graduated between 1991 and 1995. The age interval of the research participants was 28 to 38 years, and all were living with a husband and dependent children during the time of the study. The women came from various disciplinary fields: dentistry, engineering, medicine, law, pharmacy, science, architecture, education, commerce, marketing, accountancy and arts. At the time of the interview 7 of the 39 women graduates had already withdrawn from the labour market and were full-time housewives. Sixteen women were working full time: 4 were in education, and an additional 4 had abandoned their original field in order to become teachers e.g. an accountant was working as a 'supply' teacher, a pharmacist was employed as a secondary school teacher, an engineer was teaching mathematics, and a business graduate was teaching in a school. The remaining 16 respondents were either working reduced hours or had shifted to self-employment. Four were on parental leave.

Source: National reports

2. Doctors

(Finland, France, Norway, Portugal, Spain, UK)

The marked increase in women doctors. To borrow an expression used in the Spanish report, the progress of female employment in medicine has been ‘nothing but spectacular’ in several countries. In three of the six countries covered by these case studies - Finland, Portugal and Spain - the share of women has reached, or is close to, 50% of total employment, and in at least five out of the six countries – Finland, France, Portugal, Spain and the UK - it is above 50% among students of medicine or trainees (Table 10). Thus feminisation is projected to continue in the years to come.

Table 10. The share of women in the medical profession

Country	% of women among doctors	Share of female doctors in younger cohorts	Share of females among students/trainees
Finland	48 (2000) 52 (2007)	72% aged under 30	
France	30 (1990s) 40 (2007)	54% aged under 40	65% of medical students (first-year)
Norway	15(1980s) 23(1990) 32(2001)		
Portugal	45.4 (2001) 47.2 (2007)	60.8% aged under 45	
Spain	52.3 (2006)		About 70% (2000)
United Kingdom	< 40% (2005)		60% of entrants to medical school

Source: National reports

Devaluation of the medical profession? Ongoing feminisation is raising opposite concerns. In at least one country, Portugal, worries are being explicitly expressed that feminization is threatening the ‘standards’ of the profession (Box 9). Discussion on this issue in Portugal parallels that taking place in Netherlands on the desirability of ensuring a balanced representation of both sexes within the judiciary, or the debate in Norway or Latvia on having a significant representation of women among teachers of young children (see the respective case studies). In other countries, devaluation and the implied loss of prestige or of relative earnings is a concern.

Box 9. Discovering the desirability of gender balance in the medical profession

Portugal. The increasing number of female doctors has been headline news in the Portuguese media. This has resulted from a statement made by the dean of an important school of medicine at a public event, in mid-2004, to the effect that the increasing feminization of medicine was seriously affecting professional performance. In face of the difficulties of organizing schedules and working teams, given female doctors’ problems in reconciling work and family life, the dean pointed out the need to introduce quotas for men in access to university courses. His idea was to create a positive action aimed at attracting more men to medical schools.

This gave rise to a public debate with several participants, namely the chairman of the most important Portuguese medical association (Ordem dos Médicos) and the Minister of Health, who declared that “sometimes, the participation of women is constrained by their domestic chores and responsibilities, and they become less available for a profession demanding commitment round the clock”. Another aspect that emerged during the debate concerned, for example, men’s embarrassment at being examined by a female urologist.

Source: Ferreira 2008

However, evidence on devaluation is mixed, with the cases of Portugal and France suggesting or claiming ongoing devaluation, whilst the converse holds for the UK and Finland. Interestingly,

on both sides of the debate we find countries at different stages of the feminization process, intermediate in France and the UK, advanced in Portugal and Finland.

In the UK, medicine is still an attractive career option, with places in medical schools and for specialty training in the NHS highly sought after (Review Body on Doctors and Dentists, Thirty-Seventh Report 2008). Moreover, both the absolute and relative levels of pay remain high. At the top end, consultants can earn between £73,403 and £173,638, but even a General Practitioner (GP, or the more familiar family doctor) earns well over £100 (Fagan 2008). Comparison with other professions – some of which are male-dominated – is favourable to doctors: median total earnings for consultants are as high as they are for taxation professionals and solicitors and higher than for accountants and engineers. The glaring exception is the group of actuaries, whose high earnings reflect involvement in the financial services sector.

In France, by contrast, it is reported that men are beginning to desert medicine because the profession is losing earnings and prestige in comparison to others. This evidence comes from a survey of students (Hardy-Dubernet 2005, quoted in Silvera 2008) showing that those with a scientific baccalaureate tend to opt for entry into preparatory classes for the Grandes Ecoles and University Institutes of Technology where females are still in the minority.

Although no clear evidence for or against devaluation is available for Portugal, change in medical skills is used to rationalize the feminisation of doctors. But this rationalization comes suspiciously close to arguing that the new medicine is a de-skilled occupation. ‘....global trends observed in the medical occupations’ are characterized by Antunes (2003: p.98, quoted in Ferreira) as follows:

- evidence-based medicine has replaced the long-established ‘individual clinical eye’;
- individual practice is conditioned by standardized just-in-time information, condensed in guidelines, which do not respect the biological phenomenon of illness;
- costs are now a decisive criterion in public health policies;
- health services quality is evaluated by a variety of criteria, like those of benefit/costs ratio, and subjective opinion of patients, not only by professional ones;
- professional autonomy has been progressively replaced by scientific, professional and administrative interdependence.
- the wage-earning relationship has replaced the professional one.

The new medical epistemology is said to be based on decisional algorithms which enable the more systematic prevention of errors than the traditional ‘clinical eye’ (Antunes 2003: p. 83). This change is seen to benefit the young generations, those possessing more updated information and more dependent on the guidelines typical of so-called ‘managed care’ (Ferreira 2008).

Discussion on feminisation and changing skills is also taking place in Finland, but here the argument is often turned on its head: it is the entry of women that has brought about the change in skills and organization. Also, there is apparently no evidence of a decline in status or prestige for the profession. A survey conducted by the Finnish Medical Association in 2003 (Vänskä et al. 2005, quoted in Sutela 2008) reported higher appreciation for their profession among young physicians than had been found in previous surveys. The persisting popularity of physicians is also confirmed by surveys recently conducted by popular magazines (Lappalainen 2004, quoted in Sutela 2008).

Vertical segregation and re-segregation. In all countries, intra-professional segregation occurs along several different lines: from divisions between specialties to those based on the scope of specialization (e.g. general practitioners versus specialists), on the type of contract (salaried

versus self-employed), or on some contractual hierarchy – e.g. specialists versus consultants. All these dimensions concur to differentiate working and pay conditions as well as career prospects, thus contributing to a complex web of vertical segregation.

Because of this complexity, no comparable quantitative evidence on the extent of vertical segregation or on how it reflects the gender wage gap can be drawn from the case studies, apart from recognition that women earn considerably less even where they are in the majority, e.g. in Finland. Female doctors are reported to earn half what male doctors earn in France, but the gap allegedly decreases to 18% in Finland and to 19% in Spain among doctors in wage employment after adjustment for differences in education. No aggregate figure is available for the UK, Norway or Portugal.

(Re-)segregation by specialty has received close attention, partly because it captures the imagination, and partly because there is a strong differentiation of earnings (and prestige) among doctors working in the different specialties. Table 11 assembles¹¹ the evidence from the case studies. Women tend to predominate in Allergy (and Immunology) and Paediatrics in Portugal, in turn Palliative medicine, Clinical genetics, Dermatology in the UK¹², while men clearly overtake in General Surgery and Cardiology, although there are some variations across countries (compare the column for Portugal and the UK in Table 11).

Table 11. Latest figures available for the female share among medical professionals

Specialty	Finland	France	Norway (Specialists)	Portugal (All physicians)	UK (Consultants only, 2006)
Clinical genetics	Na	na	na	na	61.0
Palliative medicine	Na	na	na	na	65
Audiovestibular medicine	Na	na	na	na	45
Dermatology	Na	na	na	na	44
Genito-urinary medicine	Na	na	na	na	40
Allergy (and Immunology)	72	na	na	72.5	34.5
(Physical medicine) Rehabilitation	Na	na	na	58.9	23.8
Gynaecology /Obstetrics	Na	88	33	57.6	na
General Practice	Na	na	23	57.2	21.3
(Clinical) haematology	Na	na	na	56.8	35.8
Immunochemotherapy / Immunology	Na	na	na	53.2	22
Endocrinology (Nutrition)	Na	na	na	51.1	17.6
(Medical) Oncology	Na	na	na	43.4	28.8
Neurology	Na	na	na	43	15.6
Infectious diseases	Na	na	na	40.2	15.3
Gastroenterology	Na	na	na	33.4	12.6
(Medical) Ophthalmology	Na	na	na	30.4	40
Cardiology	24	na	na	23	9.1
Tropical medicine	Na	na	na	20.0	15.3
Psychiatry	Na	na	33	42.7	na
Paediatrics	Na	56	27	61.4	na
Geriatrics	66	na	32	na	25.1
General surgery	33	na	6	19.1	na
Child psychiatry	≈ 90	na	na	na	na
Dermatology	72	61	na	na	44.4
Dentistry	na	na	na	21.8	na

Source: National reports

¹¹ ‘Assembles’ is the correct word since the data are drawn from different sources, and classification into specialties may not adopt precisely the same criteria across countries.

¹² The evidence for other countries considered is not enough to reason along the same lines.

Two recurrent explanations across countries for segregation by specialty are working hours and gender roles or stereotypes, whilst exclusionary practices have been investigated primarily in the UK. Female doctors are reported to work fewer hours than men, or tend to be more involved in part-time, though much less so than elsewhere in the economy. In France, for example, women work on average 6 hours less than men, but their weekly total nevertheless amounts to 51 hours; also one quarter of those in part-time work report hours close to the norm for all women in employment. The desire to avoid excessively long hours in order to meet family commitments may explain the under-representation of women in many of the major acute medical specialties. However, as the Norwegian experts remarks, family commitments are part of the story but perhaps not the full story:

‘...work history data from 1996 (doctors authorised 1980-83), show that gender differences in fields at the start of the career are negligible (Gjerberg 2002). Women in this cohort start as often as men do by specialising in surgery and internal medicine, but they change to other fields during their career more often than men. The reasons for this are rather complex; but work-family reconciliation is likely to be one factor: Some women quit these fields when they have children, and women who end up in these specialties have children later in the life course than other women colleagues . But this is unlikely to be the only explanation, e.g. some women switch from surgery to gynaecology, a field which also has high work loads and heavy duty rosters. Such shifts may, among other things, indicate that exclusionary mechanisms are active in some work environments.’ (Ellingsæter 2008)

Hours are also reported to influence the choice of salaried versus self-employment status in France, the likelihood of moonlighting in Spain, and the preference for general practice (GP) versus hospital work in the UK. Such choices, however, vary across countries because they depend on the specific institutions and organization within the profession. In contrast to what happens in the UK, for example, Italian GPs are prevalently male because earnings are proportional to the number of patients, and it is common for men to maximize income at the cost of long and sometimes unsocial hours of work. Italian female doctors are apparently more attracted to work in hospitals, where work schedules are more well-defined (Vicarelli and Bronzini 2008).

Specialties where women predominate are seen as ‘feminine’, ‘caring’, requiring inter-personal skill and ‘emotional work’. Some scholars go so far as to claim the existence of ‘innate skills’, e.g. for female paediatricians (Brooks 1998, quoted in Fagan 2008). It is unclear, however, how far these explanations account for actual choice mechanisms, rather than reporting ex-post rationalizations or covering up a lack of knowledge about other factors. For example, if we look at the distribution of female doctors in Portugal, as reported in Table 11 above, are we prepared to accept that dentistry requires less care and interpersonal skill than, say, clinical haematology?

Prospects of de-segregation. Whatever answer may be given to the latter question, intra-occupational segregation appears to be changing among younger medical cohorts: In some respects, ‘changing’ also means ‘diminishing’, e.g. in the UK, where women’s share among consultants has risen by 7 percentage points in the past decade - 2 points more than in aggregate - and is expected to rise further .

Table 12. Numbers of Male and Female Medical Staff in England, 1997-2007

	Female staff				Male staff			
	1997	2000	2005	2007	1997	2000	2005	2007
All grades	23,000	25,728	33,638	37,273	43,836	45,960	56,992	57,365
Consultant	4440	5519	8353	9328	17,034	18,882	23,640	24,346
Associate	473	554	1005	1283	878	1014	1549	1765
Specialist	913	1551	2220	2321	1644	2948	3307	3734
Staff Group	4074	4778	7090	13467	7835	7942	10916	17292
Registrar Group	6180	7088	9427	2652	8826	8413	12215	3302
Senior House Officer	-	-	-	2696	-	-	-	2134
Foundation Year2	1762	1845	2561	3076	1636	1846	2102	2164

Source: Fagan 2008

In other respects the picture is more complex .With regard to choice of specialty, for example, a Norwegian study

‘....comparing older and younger cohorts (doctors authorised in the period 1970-1973 versus doctors authorised 1980-1983), indicates that there are changes in the patterns of specialisation, but the trends are complex (Gjerberg 2001). Both cohorts have had a high degree of specialisation, four in five have become specialists 15 years after authorisation, and gender differences have been insignificant. Among women in the youngest cohort there has been a trend toward a broader choice of specialisation, but there have still been pronounced gender differences, with women being nearly absent or strongly under-represented in a number of fields’ (Ellingsæter 2008)

Important signs of the decline in the culture of long hours or of round-the-clock availability are promises of more change in the future. Women are fighting for shorter hours or for work organization that allow for flexible hours. Such fight may take the form of direct action, as in the UK, where the average GP has been able to cut down NHS work by about 7 hours following introduction of the general medical services contract in 2004. Or it may derive from pressure within couples. With increasingly educated wives who are themselves at work, and the increased probability that a doctor’s wife is herself a medic, men can no longer rely on total exemption from family responsibilities, or even occasional secretarial support for their own jobs. According to Lapeyre Le Feuvre (2005) quoted in Silvera (2008)

“permanent availability” of doctors is changing and this can be explained “less by the gradual increase in the number of women doctors (...) than by the gradual transformation of the relationship of men doctors' wives to employment”.

3. Financial professionals

3.a. Financial intermediaries

(Bulgaria, Czech Republic, Liechtenstein, Romania, Poland)

Feminization in a high-earnings sector. The transition of post-socialist countries to market economies eventually reversed the traditional pay bias against service occupations, thus benefiting jobs in which women predominated. The sector of Financial Intermediation – Nace category 65 – is a case in point. Four out of the five countries reporting on this sector are post-socialist – Bulgaria, Czech Republic, Romania and Poland - and in all of them women made up at least 66% of the workforce in 2007, 24 percentage points more than in Liechtenstein, the sixth country in this case study, and 13 points more than the EU25 average. All the major occupations in this sector record average earnings above the economy-wide figure, although there are considerable differences across them. In the sector as a whole, women have increased their representation since 2001 in three out the five countries surveyed, with an overall tendency among post-socialist countries to converge to a 70 percent share (Table 13).

Table 13. Share of women in Financial Intermediation, 2007

AT	BE	BG	CH	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
54.2	48.6	72.9	40.0	54.0	65.9	56.0	44.5	63.7	51.8	42.9	75.5	59.1	78.5	68.7	61.1	38.1	76.1	38.2	73.7	47.9	48.4	51.8	72.4	45.9	71.0	53.8	73.9	66.5	50.6

Note: corresponds to NACE 65

Source: own calculations using LFS

Whilst there can hardly be cause for concern in regard to overall devaluation for the sector as a whole, intra-sectoral segregation is still an issue. Women still predominate in lower paid niches, and hierarchical segregation is very pronounced. As a result, the gender gap in earnings exceeds the economy-wide average by at least 10 percentage points (Table 14)

Table 14. Gender pay gap

	GPG* overall	GPG in Finance
Bulgaria (2002)	0.183	na
Czech Republic (2006)	na	0.33 – 0.65 depending on occupation
Liechtenstein (2005)	0.22	0.38
Poland (2006)	0.178	0.39 (2006)
Romania (2007)	0.11	0.21 (2007)

Note: The gender pay gap (GPG) in earnings is the difference between the earnings for men and for women as a percentage of those for men (measured in monthly earnings). Definition and coverage population may vary across countries

Source: National reports

Differences in hours of work no doubt account for part of the gap in earnings, since the financial sector is a long-working-hours sector in the East as well as the West of Europe (see Box 10 below), but no comparable evidence is available on hours by sex. The two factors other than hours most often alleged to account for a larger-than-average earnings gap are age and discrimination.

Age partly accounts for lower earnings on the part of women. In post-socialist countries, the sector of financial intermediation underwent a major overhaul with the transition to a market economy. It has grown apace following restructuring, with foreign firms often taking the lead. Because the new skills required by a modern, capitalist financial sector were scarce, firms resorted to students, and supplemented formal education with on-the-job training. Selection of

candidates among college graduates has tended to favour women, who perform better in higher education and are therefore over-represented among younger employees. However, the prevalence of younger female staff among women tends to reduce women's relative wages, especially where the seniority component of the pay packet is important.

Discrimination compounds the effect of age. The advantage of women at the hiring stage often turns into a gap at the time of family formation. Re-segregation into lower-paid niches like book keeping, together with widespread discrimination and voluntary exits, concur in preserving a relatively high wage gap. Qualitative research carried out in the Czech Republic highlights how women cope with discriminatory behaviour by complying with stereotypes in order to gain acceptance for career advances. Several women give up having children altogether.

An interesting observation made by the Czech Report is that the dominance of financial institutions originating from more developed capital markets has neither eased discrimination nor increased options for reconciliation of family and work (Box 10). Yet, there are signs of change in hierarchical de-segregation: Czech women increased to a striking 35% among directors and chief executives in 2007, up nearly 28 percentage points on 2001. This may hide a restructuring of the internal hierarchy, since the upward move was paralleled by a 22 point increase in the gender gap in earnings, but it is nevertheless indicative of some ongoing progress.

Box 10. Coping with discrimination and stereotypes in the financial intermediation sector

Czech Republic. Fifteen in-depth interviews were administered by Křížková (2003) to female staff in middle and top management within a large international company specialising in financial consultancy. The interviews revealed that

‘....A significant role is played in organisational masculinity by an informal structure of relations, which for women represent one of the important barriers in the glass-ceiling. These barriers, and other conditions that affect the development of women's careers within an organisation, are, together with their strategies for success, what form the basis of women's career patterns. The main strategies that women are forced to develop and use within the framework of rules and conditions are: 1. the strategy of subordinating their lives to work and the organisational rules of work, i.e. trying to conform and thus achieve success; and 2. using gender stereotypes and gender hierarchies when executing tasks, i.e. accepting the stereotypical characteristics ascribed to women and reversing their significance as sources of disadvantage towards their own advantage by using them to fulfil work goals. However, even behaviour according to these characteristics does not ensure women the same chances of success as men, owing to their handicap as women, which decreases the value of their performance.[Moreover] a comparison of the strategies of women in lower management positions on the one hand and the strategies of women in top management positions on the other hand revealed the finding that in order to combine a career and a family it is necessary to take basic value decisions that for Czech women, in a society heavily structured by gender stereotypes, are not usually acceptable. Often the strategy that seems most “advantageous” is childlessness.

The occupation of management in financial consultancy is a new field, which with the arrival of foreign companies in the Czech Republic was developed as a masculinised occupation. The main characteristics of performance in this profession are: company loyalty, automatic overtime work, devoting part of one's time off to informal company activities, on the job education, presentism, negative flexibility, a sharp division between family and working life, long-term career plans without interruptions. Women who start working in lower positions often leave the firm when they start a family and then begin working in smaller firms, often with a Czech owner, or work in the public sector, where the conditions for work-life balance are better.

Source: Křížková 2008

3.b Managers

(Hungary and Slovenia)

Unlike financial intermediation, management is still largely dominated by men. In 14 countries (out of the 27 group) there is no woman CEO in the top fifty publicly quoted companies. Moreover, women account for less than 10% of the members of high decision bodies in these companies (Eurostat 2008: Tab. A.44). Under-representation is far less pronounced among managers in general, where women reached 32.5% in the EU in 2006. The past five years have recorded mixed progress: slow among most EU15 countries, with the glaring exception of Italy, faster in some post-socialist countries and negative in the remainder (Table 15).

Of the two countries reporting on this occupation - Slovenia and Hungary – the latter can boast the highest female share in management within EU27, 37.1%, whilst Slovenia is just slightly above the European average at 32.4%. In both countries, the female share has increased since 2001, so that the picture they depict is likely to be ‘rosy’ in comparison to other countries, including some of the richer ones in Europe.

Table 15. Distribution of managers by sex in EU Member States – 2001 and 2006

	2001		2006	
	<i>Women</i>	<i>Men</i>	<i>Women</i>	<i>Men</i>
EU27	30.1	69.9	32.6	67.4
Belgium	33.3	66.7	31.3	68.7
Bulgaria	32.4	67.6	30.5	69.5
Czech Republic	26.5	73.5	29.2	70.8
Denmark	20.8	79.2	24.3	75.7
Germany	27.0	73.0	27.4	72.6
Estonia	34.2	65.8	33.4	66.6
Ireland	27.3	72.7	30.2	69.8
Greece	24.7	75.3	26.8	73.2
Spain	32.3	67.7	31.8	68.2
France	35.6	64.4	38.5	61.5
Italy	17.8	82.2	32.9	67.1
Cyprus	19.4	80.6	16.1	83.9
Latvia	37.7	62.3	40.6	59.4
Lithuania	46.7	53.3	40.7	59.3
Luxembourg	30.5	69.5	25.9	74.1
Hungary	35.2	64.8	37.1	62.9
Malta	15.8	84.2	18.6	81.4
Netherlands	26.0	74.0	27.0	73.0
Austria	30.3	69.7	28.7	71.3
Poland	32.1	67.9	35.2	64.8
Portugal	30.8	69.2	33.1	66.9
Romania	-	-	31.1	68.9
Slovenia	31.8	68.2	33.4	66.6
Slovakia	31.2	68.8	27.7	72.3
Finland	27.7	72.3	29.5	70.5
Sweden	30.3	69.7	31.8	68.2
United Kingdom	31.0	69.0	34.8	65.2

Source: Eurostat

Like elsewhere in Europe, vertical segregation is more pronounced at the very top in these two countries, i.e. among members of company boards. In Hungary, for example, the representation of women is fairly balanced in middle management, whereas it has been found that men were twice as likely as women to obtain a position in upper management in the early 2000s, and five

times as likely to get top management posts (Balint 2003, quoted in Fazekas 2008). Moreover, nine out of every ten members of the boards of large companies are men.

For Hungary, the process of de-segregation is apparently faster in corporate management: not only did the share of women go up by a notable 14 percentage points between 1995 and 2006, but the wage gap between male and female corporate managers decreased from 58% to 13%. In Slovenia, by contrast, there has been hardly any improvement at the top of the occupation in recent years, and the overall wage gap in monthly earnings for managers remains pegged at about 11%. Both countries are apparently heading towards a rather low pay differential for a coveted occupation, but information is too scarce to support any firm conclusions.

The alleged reasons for persisting vertical segregation include the usual list of suspects:

‘Research done up to now on the position of women in management in Slovenia (Kanjua Mrčela 1996, 2000, 2007; Petelinkar, 2005) has shown that the main reasons for gender segregation of this occupation are family and household obligations and the related more frequent absence of women from work, lack of self-confidence and low aspirations of women, existing stereotypes about women managers and discrimination in employment and promotion practices.’ (Kanjua Mrčela 2008)

What is perhaps more striking is low awareness of the issue. Research conducted in Hungary shows that both men and women tend to think of the existing division of labour within management as stemming naturally from the household division of responsibilities, and deny that a problem exists in this respect (Box 11). Although optimism is partly justified by the relatively good performance of the country in comparative terms, there is still some way to go before meaningful equality is achieved.

Box 11. Denial of discrimination among female managers

Hungary. A quote from Nagy and Vicsek (2008), who researched the careers of female municipal managers, illustrates how gender stereotypes permeate Hungarian society, including female managers: “... men and some of the women articulated their view that gender roles function well if men and women equally fulfil traditional role expectations, and women can look up to men. Thus we see that in the organization investigated, in a strongly feminized workplace where men too, regard themselves as feminized and the majority of leaders are women, the nostalgia for traditional gender roles persists. Women working in the organization – without being conscious of it – still have to struggle with two opposing needs: they have to meet the expectations of their job and they also have to continually show that they are not losing their femininity, which principally means the proper fulfilment of family and domestic duties.” In a survey investigating the perceptions of employees on the under-representation of women in managerial positions Nagy (2005) also found that most of the respondents did not blame organisation policies for barriers to advancement in the careers of women. This perception confirms the low level of awareness and the strength of ingrained beliefs about gender roles in Hungarian society.

Source: Fazekas 2008

4. IT technicians

(Austria, Greece, Latvia)

Within EU27, computer professionals increased fast (some 25%) between 2000 and 2007. This growth was accompanied by a decline in the share of women from a low 18% to an even lower 17%. Eastern countries were the most severely affected by the decline, but countries like France and Norway the U.K or Finland were not spared. Of the three countries included in the case studies, Austria and Greece run against the tide as they witnessed an expansion in the proportion of women. Latvia, by contrast, experienced the most dramatic decline, from 42 to 12%; although the drop is probably exaggerated by statistical problems (the country is too small to ensure stability of detailed employment figures).

Table 16. Share of women among computing professionals, 2007

AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
11.7	12.3	28.5	17.9	9.1	14.3	24.5	13.8	26.8	23.2	18.6	15.4	11.5	17.8	19.2	15.4	16.9	12.0	21.0	12.4	20.6	19.3	36.5	27.8	20.8	13.0	11.5	15.2

Note: corresponds to ISCO 213

Source: own calculation using LFS

Level of feminization trends in the IT sector: In trend with the overall increase of employment rate of women in Austria the IT sector too has witnessed an expansion in the proportion of women employees. However, as noted in the Austrian report, the male-female presence in the sector has been highly conditioned by the degree of affinity to technology attributed to women and men. So, the increase in proportion of women in the sector does not eclipse the segregation trends. Employment in the IT sector accounts for 1% of total employment and about one-fourth of this are women, which is clearly below the national average shares. In Greece women make 22.4% of all IT occupations. There has been a significant increase in the proportion of women being employed in the better paying IT Professional category, from 23.2% in 2000 to 26.8% in 2007. Conversely, in the lower paying category of IT technicians, the proportion has gone down from 29% to 18.6%. This category had been mixed-sex till 1993, when 49% were women among the total employed as IT technicians. Since then there has been a comparatively larger inflow of male employees and thus the proportion of women has gone down significantly. In 2007 of all employed IT professionals, 63% of the women had a PhD or Masters degree against 35% of their male counterparts. This establishes that though women represent a minority of the IT profession, they are much more qualified than men on an average.

In Latvia, the proportion of women in the technical professions is very low and varies from 10% to 25% depending on the size of the firm. In micro enterprises the proportion of women are quite low, averaging to lower than 10%. In small and medium level enterprises there is more female presence, but it is still proportionately low at less than 25%. Large enterprises comprise of 25-50% of women, significantly more than the other categories. Data from the Latvian report shows that women have more general duties and only a small proportion (24%) is heads of departments. The more responsible and technically more complicated duties are performed by men.

There is more visibility of women workers however, in the lower paying bracket of IT occupations. In Austria, in the IT core sector, i.e. software development, a university degree in computer sciences became more important for entering an IT job. This was corresponded by a decline in the female It students in universities. According to data of 2005-06, the rate of female students in IT subjects amounts to less that 14% and this may directly affect their presence in the high pay IT jobs. In the contrary, in Greece has seen an increase in the number of higher qualified it professionals, and 90% of the employed today have higher graduation degrees. A Latvian study has shown that while majority of male respondent recognize a gender inequality in pay in the IT sector, only a small minority of women regard this fact.

The inherent flexibility of working hours in the IT sector usually translates into longer working hours. Over timing becomes essential in the sector in view of employees undertaking projects that have to be finished by specific deadlines. Apart from long hours of working, short deadlines make working conditions stressful and strenuous. There is limited scope for part-time work and temporary employment in all the three countries in case and it often leads to self employment. The report from Greece records a respondent claiming that during periods of heavy overload “there is no time for private life at all” and that “they go home only for a few hours to get some sleep”. This leads to difficulty for women employed in the IT field to reconcile family obligations as well as work under demanding conditions.

‘Incredible shrinking pipeline’: The gendering of professional fields have conditioned women for so long to choose ‘soft professions’ and IT sector has been regarded as a technical field to which there is a greater degree of affinity of men than women. More women in the sector are engaged in administrative work, sales and management rather than in the technical development work. Technical work is still considered male work and is statistically male dominated as well. It stems from educational choices of young girls and boys and this directly affects hiring trends, especially among IT technicians and this discrepancy is evident in numbers . Women higher education graduates do post graduate studies more often than men to compensate discrimination with credentials.

Box 12. Coping with discriminatory hiring practices in the IT sector

Greece. Excerpts from a research project on employment and working conditions in the IT sector through interviews with employers, employer organizations, unionists and representatives of professional associations (Karamessini and Sakellaridis 2007).

It came up from the interviews that:

‘the difficulties women encounter to combine work and family are well known to employers and “are of course taken seriously under consideration when a decision is to be made about a hiring”. Employers always ask women candidates whether they will be able to match their family obligations with job requirements. However, they do not rely only on women’s answer to make a decision, since most of the times their answer is affirmative. They usually tend to ask questions about women’s personal life (i.e. how long they have been married, how many children they have, if there are grandparents available to baby-sit the kids etc.) and only afterwards they judge whether the candidate can really manage to reconcile family life with career. Another interesting finding from our interviews with the employers is that asking personal questions to candidates (sometimes even indiscrete ones) avails as a method to also implicitly letting them know that their private life will be constrained if they are hired’ (ibid, p. 12)

Source: Karamessini 2008

This is despite the fact that generally the share of women in most technological subjects have gone up, however, obstacles in terms of relative pay and more prominently conditions of work prove an obstacle to retaining women in the sector. Long working hours and limited opportunity to work part-time, compel many women to choose either family life or a career. Working conditions, especially male domination and long hours discourage women willing to pursue a career and become mothers to undertake such studies.

5. Lawyers and judges

(Ireland, the Netherlands)

Legal professionals - ISCO occupation 242 - comprising lawyers, judges and other legal professionals – was a male dominated occupational group back in the 1970s. In both EU25 and EU12 the share of women is currently close to 46%, the fifteen-year increase since 1992 amounting to 17 points within EU12.

Table 17. Share of women among legal professionals, 2007

AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
37.4	41.3	47.2	52.5	43.4	41.7	47.8	81.3	59.6	45	43.8	53.7	59.2	44	41.9	48	44.4	73.6	40	46	25.1	49.2	62	49	40	66	50.8	45.4

Note: the occupation corresponds to ISCO 242

Source: Own calculation using LFS

The group as a whole classifies as gender mixed in all European countries except Estonia, Latvia, Portugal and Slovenia where it is female dominated, and Norway where – surprisingly – it remains male dominated. Women are increasing both among lawyers and among judges, but at different paces across countries. This is reflected in the countries reporting on this occupation – Ireland and the Netherlands. In Ireland, women have made the largest inroads among lawyers, whereas in the Netherlands judges are more feminized. This makes for an interesting comparison between two different processes of feminization both of which draw from a steady and ongoing increase of women among law graduates.

The judiciary in the Netherlands. Flows into the judiciary are already female dominated in the Netherlands. While women accounted for almost half of the stock of magistrates in 2006 (48.2%) they made up between 80 and 60% of successful applicants to the training positions offered each year by the judiciary system. Despite ongoing feminisation, however, hierarchical segregation is still pronounced: the share of women ranges from 65% at the bottom to 14.8% at the top of the occupational hierarchy. Hierarchical de-segregation is not just a matter of time, since there is evidence that women take longer than men to climb each step of the ladder (De Groot-Van Leeuwen 1997).

Are working hours driving feminization? Working conditions and especially the possibility to work part-time could be driving feminization:

‘ ... In personnel adds, the magistrate presents itself as a modern employer with flexible working hours, opportunities to work part time at all levels, with parental leave and childcare facilities (Website Werkenbijhetrijsk.nl). Moreover, according to the ‘Outline personnel policy 2008-2011’ the Council for the Judiciary favours a personnel composition of boards and management which reflects the composition of the total workforce within the judiciary system.’ (Plantenga and Remery 2008)

However, past research in the Netherlands found that while men and women differed in the reasons that they cited for choosing to enter the judiciary, few women mentioned the opportunity to work flexible hours or part-time (De Groot-Van Leeuwen et al. 1996). For women the most important reason was the judicial character of the job, whilst for men the challenge and variety of the work was more important. The availability of flexible working times and part-time work was a motive for only a few women. Hence the effective importance of the working-hours motive requires further investigation.

While women are still struggling to enter, the prospects of feminization worry the judiciary establishment in the Netherlands. The council for the Judiciary has expressed concerns about vertical segregation in the profession, but also about the risk that feminisation may undermine the judiciary's aspiration to be representative of and recognized by all groups in society (Box 13). This latter concern has also been being voiced in different countries for other professions perceived at risk of being 'taken over' by women – doctors in Portugal for example – as well as for already feminized professions like teaching in Norway or Latvia. It is, however, worth reflecting on the fact that in a high-paid occupation like the judiciary these concerns surface even before women achieve equal representation.

Box 13. Worrying about too few women (at the top) and yet too many (in the judiciary)

The Netherlands. [In] the 'Outline personnel policy 2008-2011' the Council for the Judiciary favours a personnel composition of boards and management which reflects the composition of the total workforce within the judiciary system. In this respect the Council considers it a good development that the proportion of men and women within the management development programme for courts of law is balanced. On the other hand, feminisation of the workforce seems a topic of concern within the judiciary system. According to another section of the outline of its personnel policy, "it is important to know why the share of men and allochtonous persons in the inflow of the judiciary system is rather low and how the inflow of these target groups may be increased". According to this outline the Council for the Judiciary strives to achieve "a translation of the development of a more differentiated society into its personnel composition, given the importance of a judiciary recognisable for all groups in society." (Raad voor de rechtspraak 2007, quoted in Plantenga and Remery 2008)

Legal professionals in Ireland. Irish women have been growing in numbers among lawyers despite a culture and practice of long hours of work in the occupation. Starting from a very low 5% in the early 1970s, women had grown to 34% among barristers and 41% among solicitors by 2002.

Overall, reconciliation and discrimination still are major issues for Irish women in this profession. According to a detailed survey carried out by Bacik et al. (2003) the comparative chances of promotions and relative pay remain an issue (Barry 2008: Tabs 16 and 17), partly due to difficult access to flexible working hours and full maternity leave entitlements. In the words of the authors of the survey:

'While it may be slowly becoming more acceptable for women to seek flexible working hours on the basis of their parenting responsibilities, it does not seem that there is any recognition in the legal workplace of the parenting role of men.' (Bacik et al. 2003)

Differences in hours worked are probably contributing to a pronounced gender pay gap: at the top end of the income scale, 31% of women respondents to the survey stated that they were earning € 75,000 or over, compared to 59% of men. At the lowest end of the income scale 23% of women respondents compared to 14% of men reported earning less than € 35,000 (Barry 2008).

Feminization is being accompanied by re-segregation. The search for convenient work schedules or lingering discrimination partly account for re-segregation but other factors appear to be also at work. Women are much better represented in legal areas like family law, property, personal injury and, recently, asylum and immigration law, rather than criminal or commercial law. One explanation is that significant increases in opportunities for litigation in some of these areas coincided with major inflows of women – e.g. in the case of the introduction of provisions for legal separation in the 1970s and 1980s or in the newer area of asylum and immigration law.

However, Bacik et al. suggest that timing alone cannot entirely explain the pattern of re-segregation and that adherence to gender roles has played an independent part (Barry 2008).

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6. Home helpers in elderly care

(Austria, France, Italy, the UK and Sweden)

Care workers in Europe

Care workers (ISCO group 513) form the most feminised occupation in the EU. They comprise two subgroups, which are reviewed in the present and the next case study: home helpers in elderly care, and care workers and teachers in pre-primary services. Much like elsewhere, in the nine countries covered by the two case studies - Austria, France, Italy, the UK and Sweden for home helpers in elderly care, and Cyprus, Latvia, Iceland and Norway for child care workers and pre-primary teachers - the share of women in the broad occupational group of care workers often reaches 90% or higher, never falls below 80 percent except in Greece (79%), and exhibits basically stable trends.

Table 18. The share of women among care workers

	AT	BE	BG	CY	CZ	DE	DK	EE	EL	ES	FI	FR	HU	IE	IS	IT	LT	LU	LV	MT	NL	NO	PL	PT	RO	SE	SI	SK	UK
1992	na	97.5	na	na	na	91.0	90.4	na	76.5	84.4	na	92.5	na	na	na	68.7	na	na	na	na	86.2	na	na	87.7	na	na	na	na	91.2
1997	na	96.8	na	na	82.3	92.1	85.9	93.8	81.9	82.1	94.4	91.7	87.6	na	94.2	73.1	na	86.1	na	na	96.8	90.3	82.2	92.0	93.3	89.8	90.2	na	92.0
2001	75.8	95.9	94.9	100.0	85.1	90.7	89.4	91.9	82.0	87.9	96.7	92.5	86.1	87.7	94.1	76.1	96.9	93.2	94.5	na	96.9	88.9	86.1	89.6	na	89.8	72.2	90.5	92.1
2007	86.3	96.7	90.1	97.9	83.5	89.2	87.1	99.0	78.9	90.1	93.7	90.0	84.7	89.4	na	84.5	100.0	86.7	91.8	58.1	97.5	87.1	90.7	93.5	85.5	87.0	78.6	87.7	90.1

Note: corresponds to ISCO 513

Source: own calculations using LFS

Care of the elderly has shifted decisively towards the home throughout Europe, giving tremendous impetus to the occupation of home helper. The exact features of this occupation vary because the organization of home-based care not only differs across countries but is undergoing change in response to the exponential increase in demand. The broad profile of a home helper is that of a waged worker responsible for assisting, totally or partially, the disabled elderly in their daily routines, from cooking, eating, house-cleaning and bathing to taking medicine, moving or walking, or shopping.

Occupational titles vary. Members of this occupation are known as ‘home helpers’ in Austria and France, ‘domiciliary care workers’ or ‘care assistants’ in the UK, where they are grouped with social workers, ‘households assistants’ in Italy, more commonly called ‘minders’ if they are hired directly by the family. In Sweden, where the home-based care sector is well developed and the division of labour is finer, home help is split into several occupations, from ‘guardian’ to ‘cleaner’.

The type of employer also differs and obviously depends on qualification requirements, training provisions, pay and working conditions. Sweden and Italy stand at opposite extremes, since in the former country long-term care is primarily organized at public, municipal level. Swedish municipalities are the main employers of care workers, whereas in Italy the family is a far more important employer of home helpers than local authorities. Because of outsourcing, in the UK or Austria a small-sized private-sector or voluntary-sector company typically provides home-based care to the elderly, whilst in France services are organized via Departmental Councils which administer the Personalised Independence Allowance (*Allocation personnalisée d'autonomie*, APA).

Last but not least, irregular employment and the employment of migrants strongly influence pay and working conditions in this occupation. Irregular employment is more widespread when families hire and pay home helpers directly, owing to a common interest in avoiding taxation or the weak bargaining position of the workers. Families are the main employers of home helpers in Italy, as noted, but Austria also reports large estimates of irregular workers hired by the family, and in the UK the share of families self-funding (paid) elderly care is not negligible.

Migrant care workers are especially at risk of irregular working conditions, because their civil and working rights are more often uncertain, or simply because they are foreigners. Thus in Italy one recent estimate of the share of workers in domestic services without a regular contract puts it at 23.8% (IREF –ACLI 2007: Graf. 8), but the figure is likely to be considerably higher for home helpers in elderly care. Similarly, in Austria it is believed that there is practically one irregularly employed care worker, usually an immigrant, for each regularly employed one (Flecker et al. 2007: p.115, quoted in Mairhuber 2008).

Feminization and the occupational pyramid. Despite organizational variety, some basic features – and issues – are common across the five countries surveyed. First, home help in elderly care is an overwhelmingly feminized job which lies at the bottom of the elderly care occupational pay and skill ladder. Reported rates of feminisation are never below 85%, and they are close to 100% in two cases: France and Austria. With such rates, vertical or hierarchical segregation are meaningful concepts only if we look at home helpers from within the hierarchical ladder of care work, rather than from within the occupation itself.

The degree to which skills are recognized is the key to understanding vertical/hierarchical segregation, because it is one of the main factors that structure the occupational ladder. In the more favourable cases, some training and skill recognition are granted to home helpers, e.g. in Sweden, among the (minority of) municipal care workers in Italy, or among carers in regular employment in Austria. For example, there are two different levels of qualifications for regular care workers in Austria: skilled and semi-skilled personnel. Qualified nurses (*diplomierte Gesundheits- and KrankenpflegerInnen*) are skilled personnel who have successfully completed a three-year course, while the semi-skilled include both assistant nurses (*Pflegehilfskräfte*), for whom a one-year course suffices, and home helpers (*HeimhelferInnen*), who are required to attend courses of between 200 and 400 hundred hours, i.e. the equivalent of a half-year course at most. In the UK and France, practically no training was given or required until recently, and current training provisions are reported to be scarce or below targeted standards. In the UK, for example, the Care Standards Act 2000 established various national minimum standards, qualification levels and target dates. Since the Act came into force, levels of qualification have increased, but National Minimum Standards are still far from being fully achieved for care workers. There are, however, even poorer examples: when families are the direct employers or when employment is irregular, no training is provided, and the work is considered to require no skill at all.

Male care workers are rare, but they tend to be better represented in the more skilled occupations, in administration and in management. This is well exemplified by Austria, where male home helpers account for less than one fourth of all men working in home care, as opposed to almost two thirds for women. The reverse holds for qualified nurses, although career chances for female nurses are much more balanced in residential elderly care.

Low wages. Regarding pay, the main issue for home helpers is low wages rather than the within-occupation gender wage gap. There is evidence for the UK that even among home helpers men earn slightly more than women (Table 19). However, in Swedish municipalities women's earnings exceed those of men in the more feminized, care-related occupations. This is documented in Table 20, which should be read bearing in mind that the figures reported refer to all municipal employees and do not control for possible differences in age, qualifications, or other.

Table 19. Median and average gross hourly pay for care assistants and home carers, April 2007 UK (ONS Annual Survey of Hours and Earnings 2007)

Type of worker	Median £/hour	Average £/hour
All (male + females)	7.53	8.07
All female	7.46	8.00
All female full-time	7.48	7.94
All female part-time	7.45	8.09

Source: Skills for care Annual Workforce Report 2008, quoted in Fagan 2008

Table 20. Women's average wage in percent of men's and share of women by occupation in Swedish municipalities, all sectors 2002

Occupation	Women's wages in % of men's	Share of women	Occupation	Women's wages in % of men's	Share of women
Electrician		0	Custodian	100	68
Engine man	95.6	1	Assistant nurse	101	96
Skilled worker	95	1	Children's nurse	103	97
Construction worker	97	1	Assistant carer	103	95
Craftsman	97	3	Guardian	100	86
Driver	97	2	Nurse's assistant	103	88
Garden worker	98	9	Child minder	105	100
Paramedic	98	18	Catering assistant	103	97
Janitor	97	7	Cleaner	101	96

Source: Kommunal 2004: Tab. 4, quoted in Nyberg 2008

Very high rates of turnover among home helpers indicate that the main problem is pay which is low for the working conditions that the job entails. As with other types of care work, undervaluation is one reason for low pay in this occupation. Quoting from the French and the UK report, respectively,

'Is it a matter of simply reproducing tasks that women carry out at home, "without" any particular skills? Or should not other required skills be recognised, such as interpersonal skills concerning the family and the person they are looking after? In spite of the desire to professionalise these workers and develop training, there is a tendency to under-estimate the interpersonal skills required, which are sometimes considerable when the person concerned is very ill or psychologically fragile. The technical nature of the work is also sometimes denied – some home-helpers give medicine, as well as certain treatment, even though it is not prescribed.'(Fagan 2008)

'The highly gendered character of 'caring' and 'bodywork' is associated with the intimate realms of the personal and the familial. It is also linked to the traditional construction of medicine as a high status professional occupation suitable for middle-class men. This status was preserved by female nurses 'mopping up' after patients, and these tasks have since been delegated to care workers in an attempt to conceptualise the difference between "technical" and "basic" nursing and draw professional demarcations for nursing'(Wolkowitz 2006, quoted in Fagan 2008)

Where migrant workers are regularly employed, however, the feminized work that they do is not perceived as particularly undervalued in comparison with existing alternatives in more male-dominated occupations, as illustrated by the (fairly frequent) case of an immigrant home helper regularly employed by an Italian family and co-residing with the elderly.

'Consider a full-time co-resident minder receiving € 850 per month in 2005 and working 54 hours. Per hour earnings would amount to some € 3.5 or even less if we account for the fact that a co-residing minder is de facto 'on call' at night, i.e. is unlikely to refuse occasional or limited night services, especially if the need arises sporadically rather than systematically. In terms of yearly earnings the occupation would rank penultimate in the two-digit occupational ranking drawn from EU-SILC data, between Agricultural, fishery and related labourers and Skilled agricultural and fishery workers.

However, having food and lodging provided for free (or paid for on top of the salary) considerably lowers work-related costs that workers in other occupations bear. Moreover, for short-term or rotating migrant workers, perhaps the largest group from former Soviet Republics, the actual purchasing power of their take-home earnings is at least doubled once money is transferred and spent in their own country. Rotation refers here to the widespread practice to work in relay with other relative or friends in order to alternate work in Italy to caring for one's family back home (Morokvasic 1996).

In terms of earnings, but also of other working conditions, therefore, being a regularly employed, co-resident elderly care minder should be no less attractive to migrant men than other occupations in building or harvesting where conditions are known to be very exploitative.' (Bettio and Verashchagina 2008)

Stress levels and long or very irregular hours of work are among the conditions that are not sufficiently compensated for, although the reason varies from country to country. In France, for example, typical jobs involve 70 hours per month and only 5% of them are full-time (more than 165 hours per month)! Home-helpers serve several "clients", often located in premises distant from one another, and no law enforces minimum working hours for them. Among home carers in Austria, the pressure to be flexible and available at short notice is exacerbated by understaffing, and the resulting overtime makes it difficult for women to reconcile family and work. Finally, long hours of work are complained about by residential care workers in Austria or by co-resident home helpers in Italy.

Future shortages. The combination of low pay and undesirable work conditions has caused and is continuing to cause shortages among the native supply. To date shortages have been met either thanks to a considerable inflow of immigrants – in Italy or Austria – or by recruitment among resident ethnic minorities – in the UK and France. Neither solution, however, is considered unproblematic for the future. In Italy reliance on migrants has greatly eased the demand shortage, and the occupation is still sought after by female migrants from the East for the reasons just mentioned. However, the Italian solution may not be sustainable for long in its present form, since a large share of migrant home helpers come from Eastern European countries, and a likely improvement of job opportunities there in the medium term may considerably reduce migration flows (Bettio and Solinas 2008).

In order to heighten incentives for bottom-layer care workers to invest in their occupation, the UK and France have adopted the 'more training, more professional standards' solution, but the deeds do not yet match the commitments on paper. Austria has gone further in this direction with an attempt to integrate the occupation of home helpers into a professional ladder that guarantees at least some recognition of skills, training, and work standards.

Within Austria this has raised fears that increased differentiation among care workers may attract men, who would steal from women the advances secured to date thanks to a female-dominated environment (Reidl et al. 2006: p. 40, quoted in Mairhuber 2008). However, it is hoped that

recognition of skill may not only contribute to addressing the problem of low pay but also help meet shortages through a greater involvement of men in the occupation.

As a step in this direction, a French organization has drafted detailed guidelines for home helpers caring for elderly or disabled people which can also be used to identify the skills involved (for details see Box 14).

Box 14. Skills assessed in the Certificate of Occupational Skills (Certificat de compétences professionnelles, CCP) Helping an individual carry out functions related to everyday life

** Making contact with the person concerned and organizing intervention*

When it is an initial meeting, exchange information in order to establish the bases of a positive relationship and also to determine the framework of the job.

On each arrival at the person's home, discuss?, observe and analyse the data of the moment (the state of the person and the liaison book, in order to adapt the intervention, agree on how to organise things, possibly explain impossibilities or refusal.

**Accompanying and helping individuals carry out functions related to everyday life*

Helping the person to eat: preparing, organising and creating the atmosphere of meals and snacks.

Advising the person and adapting menus.

Helping the person regarding their personal hygiene: helping them wash in a basin or shower, helping the nurse when it is a matter of washing in bed.

Helping with getting dressed and undressed.

Helping the person move from one place to another – with or without specialist equipment, depending on the type of invalidity.

Helping the bedridden: making the bed and manipulating a hospital-type bed.

Helping with paper work.

Accompanying the person in their social and leisure activities.

**Contributing to maintaining the person's physical and intellectual independence*

Involving the person and asking for their physical and intellectual participation.

Maintaining contact and communicating with the person during the various activities.

**Dealing with emergency situations*

Picking up a person who has fallen, anticipating incidents and accidents, giving first aid, taking emergency measures and alerting.

*Being in contact with those close to the individual, other people, services and professionals involved

Writing reports in the liaison book, envisaging necessary contacts.

Taking stock with the person concerned, jointly assessing the service, preparing the future service.

Leaving the person.

Source: Doniol-Shaw 2005, quoted in Silvera 2008

7. Nursery care workers and pre-primary school teachers

(Cyprus, Latvia, Iceland and Norway)

Extreme feminization. Nursery care workers and pre-primary school teachers broadly identify two layers of the same occupation, namely assisting the physical and mental development of children under three years of age while looking after them at the same time. In the four reporting countries - Cyprus, Latvia, Iceland and Norway - the occupation is extremely feminized, even more so than primary teaching. Among registered teachers, men are practically absent in Cyprus and Latvia. They account for a 4% share in Iceland and a little more in Norway (7%).

Low pay and relatively high qualification. In all four countries, pay is reported to be low in absolute terms or with respect to the level of qualification. In Latvia wages among pre-primary teachers are below the economy-wide average. In Norway, the average wage level corresponds to the base salary for nurses and physiotherapists, despite the fact that the educational requirements are the same, namely three years of college. Furthermore, over their lifetimes preschool teachers receive the lowest income among all workers with college educations. In Cyprus, crèche workers are paid the minimum wage despite having a two-year college education, and kindergarten staff receive some 25% more for four years at college.

In all the four countries, therefore, pre-primary teachers hold qualifications requiring three to four years of college attendance; in Cyprus other child-care workers in regular employment also have some college education (the remaining countries only report on teachers). The occupation has therefore managed to professionalize itself but not to be paid accordingly. Time may be a factor: in Iceland, for example, professionalization is a relatively recent conquest after a long struggle primarily motivated by the desire to raise pay levels: unlike the education of primary school teachers and nurses, which moved to the university level in the 1970s, training for pre-primary school teachers became a three-year study course leading to a Bachelor of Education degree only in the late 1990s (180 ECTS) (Jónsdóttir 2005, quoted in Mósesdóttir 2008). Persistent over-demand for pre-school teachers, however, means that about 60% of all staff is recruited among the unskilled.

The expectation in Iceland is that real change will come about with the proposed integration of pre-primary teaching into the school system. Such expectations are justified in the Scandinavian context. In Norway, for example, only half of those educated in pre-primary school teaching are actually employed in child care services (Gulbrandsen 2005, quoted in Ellingsæter 2008), whilst the remainder opt for elementary school teaching or other occupations, the alleged reason being the low pay offered by care services.

Low pay and the failure to attract male teachers. Low pay is one of the reasons why there are so few men in the occupation. Other reasons mentioned for Iceland are the association with part-time and with 'mere' care as opposed to teaching. In Latvia, low pay is, reportedly, the overwhelming, or the most important, reason why men are not attracted into pre-primary or primary teaching. Yet extreme feminization is perceived to be a problem, especially among primary and secondary teachers, because boys are believed to need authoritative male figures and to identify with and to develop their manliness, which is otherwise sought for outside school. The Latvian battle over the low pay for teachers in the first level of education has thus been waged behind the goal of ensuring balance in sexual identities among children.

The experience of Norway confirms that if the objective is to increase the share of men among teachers of young children, raising pay is likely to work where other measures have failed. At the

same time, it casts doubt on whether men's attitude and behaviour as teachers is as different as implied by the assumption that there are two clear and distinctive female and male identities to be passed on to children. Box 15 gives a flavour of the Norwegian debate.

Box 15. More manliness for male children? Raise teachers' pay

Norway. Since the early 1970s, when the first men started in pre-school teacher education, the proportion of men has been low, with some fluctuations (Solberg 2004). Although the past ten years have seen a slight increase, over a twenty-year period there has actually been a decline (Solberg 2004). The stability of the 1990s is surprising, because this was the decade when the government launched its campaign to increase the recruitment of men to kindergartens. Since then all governments have pursued the target of a 20 percent male component in kindergartens. In 1998 a regulation allowed male quotas in admissions to the pre-school teacher colleges?; and other incentives have also been introduced, among them local so-called 'men-in-kindergarten' networks. It is widely agreed that these policies have been unsuccessful (Solberg 2004). Solberg (2004) maintains that the 2004-2007 action plan represented more of the same "medicine". In his opinion what is lacking is a national strategy to point out directions. The action plan is based on an implicit assumption that if the proportion of men increases, gender equality will follow automatically, but this does not problematise gender power relations in kindergartens.

According to Solberg (2004), recent research indicates that male pre-school teacher students are significantly less motivated than female students. The majority of men interviewed for the study were not attending college because they thought they could contribute in kindergartens; rather, they reported a lack of other alternatives or considered the education an easy way to get a job (Solberg 2004: p. 147). This pragmatic attitude is perhaps surprising, given the female dominance of this occupation and its connotations. And this type of rational choice is likely to be underrated as a cause of men entering female-dominated occupations, because it tends to be interpreted as a strongly-gendered choice.

Some researchers have studied the rationale of recruiting men as pre-school teachers, and how men construct their masculine work identity as pre-school teachers (Røthing 2006; Solberg 2004). Evidently, different forms of masculinity are evolving.

Source: Ellingsæter 2008

8. Cleaners

(Belgium, Finland, Germany)

Cleaning is an important source of employment at the bottom of the occupational and pay pyramid. No harmonized data are available at EU level for the occupation as a whole, because no European source goes down to the 4-digit level classification needed to identify the different sub-occupations.

Of the three countries reporting on this occupation – Belgium, Finland and Germany – Finland records the highest rate of feminisation, with 9.6 women for every 10 cleaners in 2005 against about 6.6 women in Belgium and 7.2 in Germany. Because of outsourcing by both public institutions and private concerns, the occupation has undergone major changes. Belgium and Germany report fairly similar trends and organisational structures in regard to working conditions and schedules, intra-occupational segregation and the wage gap, as well as biases in the way feminized work is evaluated and remunerated.

Working conditions and schedules. Since the introduction of outsourcing, the private sector has expanded considerably at the expense of public employment in both countries, and a triangular relationship between the client, the cleaning company, and the cleaners has become entrenched in this occupation. The work load and irregular and non-negotiable hours have increased in parallel. The heavier work load can be illustrated by comparison between a typical maintenance cleaner working for the private sector and her counterpart in the public sector in Germany: the latter cleans an average of between 150 and 200 square metres in an hour, whereas the former can cover up to 820 per hour ((Mayer-Ahuja 2003: p. 182f; Hieming et al. 2005: p. 111, quoted in Maier 2008).

Full time work is scarce in the occupation, accounting for 37% of total employment in Belgium and 37% in Germany, down to 13% and 16% among women in the respective countries. Given high competition among private firms, clients can impose their preferred hours of services. Thus, although hours of work are short, they are often inconvenient or irregular for the worker, as in the case of the split schedule in Belgium described in Box 16. Moreover, clients may be located at some distance from one another, and travel time is not paid for. For mothers working in this occupation, the choice of increasing hours of work may thus pose a very difficult conflict between the need to reconcile time for care with time for the client, on the one hand, and the need to get more income on the other: a classic trap among ‘working poor’ women.

Intra-occupational segregation, job evaluation biases and the gender pay gap. Workers’ allocation to sub-occupations within cleaning is gendered in both Belgium and Germany. Industrial cleaning, refuse collection and window and building cleaning are mixed or male dominated sub-occupations, depending on the country, and they record a higher incidence of normal working hours and of full-time employment. The converse holds for maintenance cleaning, i.e. cleaning of offices, hospitals schools etc., where women predominate.

In Belgium, hours of work differentiate earnings between men and women more than does employment in different sub-occupations. In Germany, however, there are important differences in recognised skill level and pay across sub-occupations. In this country both maintenance and window cleaning are recognized trades. Cleaners can complete a three-year vocational training course as state-approved maintenance workers or building and window cleaners, and receive further training for a master craftsman’s diploma. In building and window cleaning almost one

third of the workers employed in 2007 had received vocational training against less than one fifth in maintenance cleaning.

Box 16. The split schedule in maintenance cleaning

Belgium. Work at most cleaning sites is organised according to a split schedule, so that it is concentrated into two time slots – early morning and late afternoon or evening – without any additional wages being payable. In Belgium, for example, the pay increment due for night work is not payable until after 10 p.m. Night work, incidentally, is quite rare. It appears that, on average, only 25% of the cleaning work entrusted to outside firms in European Union countries is performed during normal working hours, i.e. during the daytime (EFCI 2006). In a highly competitive market, therefore, client companies can impose inconvenient schedules on subcontractor firms so that their own staff are not disturbed by cleaning work.

Time organisation of this kind is not as unavoidable as is often maintained, however. It seems to result from an implicit understanding between client companies and employers, so as to reduce cleaning costs by means of an intensification of work obtained by eliminating all slack periods, breaks, interruptions, disturbances and the deployment of labour in blocks of hours that can be lumped together where necessary in order to make up the paid working time. On closer inspection, in fact, the nature of the work is insufficient to justify this method of organisation. In Sweden, for instance – though it should be acknowledged that the country is an exception – daytime cleaning has become the rule and accounts for 70% of such work (EFCI 2006).

.....This contingent organisation of work, based on the split schedule, represents one of the main grounds for rejecting full-time work, especially for women who continue to shoulder the lion's share of domestic and family responsibilities. The split schedule poses at the very least the problem of a [...] possible mismatch between time spent at the workplace and working time that is duly remunerated. It is not surprising under these circumstances that female workers shy away from the split schedule, in that they are obliged to forego one or other of its shifts.

Source: Meulders 2008

Whilst training related-qualifications are a source of wage differentiation, they are compounded by differential evaluations of comparable skill levels in the two sub-occupations. Table 21 below reports the rates negotiated for these sub-occupations according to recognized skill level: an unskilled helper in building and window cleaning is entitled to a per hour rate higher than that received by a foreman in maintenance cleaning.

Table 21. Classification system of the wage agreement for the private cleaning sector in North Rhine Westphalia in 2003

<i>Occupation field 1: building and window cleaning</i>		
Skilled foreman/-woman	115%	13.91 Euros
Skilled worker (basic wage A)	100%	12.09 Euros
Cleaner (basic wage A)	90%	10.88 Euros
Unskilled worker (helper) (basic wage A)	85%	10.28 Euros
<i>Occupation field 2: maintenance cleaning</i>		
Cleaner (basic wage B)	100%	9.40 Euros
Foreman/-woman (basic wage B)	110%	9.80 Euros
Foreman/-women for teams up to more than 15 workers (basic wage B)	115%	10.21 Euros

Source: Lohntarifvertrag für das Gebäudereinigerhandwerk NRW 2003, quoted in Maier 2008

Table 21 is not the only evidence of biases in the devaluation of female-dominated areas of work. In lump-sum maintenance cleaning in Germany, for example – e.g. when cleaners are responsible for a building (often schools) and get a fixed monthly sum for it - the agreed deliverable is often too demanding for workers to complete cleaning on time, so that they take longer than they should and end up being paid average per hour wages between € 3 and 5 with no overtime. Additional evidence of underpayment in the same country concerns the cleaning of toilets. This task is seen as a self-evident part of maintenance cleaning and not as “exceptional contamination”, a criterion used elsewhere to justify extra pay for difficult working conditions (Hieming et al. 2005: p. 111, quoted in Maier 2008). Similarly, inconvenient hours do not give rise to extra pay as week-end work or night work does elsewhere in the economy.

Well-developed training provisions in this occupation may have prevented a generalized downward fall of wages in Germany, but they have also been used to enforce gender differentiation in pay. In Finland, by contrast, not even the offer of training provisions has been sufficient to raise the wage level among cleaners, because investment in training simply does not pay:

'There have been attempts to raise the education level among the cleaning staff by introducing an education programme of basic qualifications in cleaning work, but it has been difficult to find enough students. The basic qualifications take a year of studies, but the attained qualifications do not really show up in the extremely low wages: the supplement for a qualified cleaner is about 14 cents per hour more than for an unqualified cleaner. Qualified cleaners tend to seek their way into public sector where the pay level is slightly higher than in the private sector'. (Sutela 2008)

9. The Retail Sector

(Czech Republic and Ireland)

In Europe as a whole, the largest concentrations of female employment are in wholesale and retail trade, comprising 19% of female full time employment. The Cedefop report on future skills needs in Europe predicts a Europe-wide significant expansion in the number of jobs in retail up to 2015 (Cedefop 2007). Female employment growth in the retail sector has been on a constant increase over the last decade, evidenced by the table below. Female growth in the sector is higher than the total employee growth rate, and is nearly double the growth rate of male employees in the sector. It is expected that this trend will continue over the coming decade.

Table 22. Persons aged 15 years and over employed in Wholesale and Retail Trade in Ireland

Gender	1997	1999	2001	2003	2005	2007	% increase 1997-2007
Males	115.0	122.9	127.5	130.1	141.8	156.2	36%
Females	92.3	105.1	117.8	124.8	142.2	155.4	68%
Total	207.2	228.0	245.3	254.9	284.0	311.6	50%

Source: Central Statistics Office, Quarterly National Household Survey data, quoted in Barry 2008

In trend with the figures of whole of Europe, the countries in case have had a significant increase in the proportion of women employees over the last one decade. In the Czech Republic the job of a supermarket cashier is highly feminized where women represent 93% of shop cashiers and women make up 82.5% of shop salespeople. In Ireland, there is clear evidence of gender occupational segregation in the retail sector. Nearly twice as many females are employed in sales positions as are males, and males additionally comprise nearly three times as many management and administration positions as females in the retail sector, with very few females represented in senior management (DoJ,E&L 2003). Of all sectors in the Irish economy the wholesale and retail sector is the second largest, employing 289,100 people. Of these, females continue to dominate the ‘sales’ broad occupational group, comprising 61% of the total in 2006.

This does not completely reflect a healthy picture as it is an evidence of concentration of women in the marginal occupations of retail. When supermarket chains began to explode into the Czech market they obtained tax privileges from the state that put them in an advantageous position over other types of traders, and they took advantage, for example, of the growing unemployment in certain regions or in certain categories of the population (typically women) so that they could set wages very low (bordering on minimum wage level), offer negative contract terms (e.g. fixed-term work contracts and other unfavourable contracts), and provide employees with poor working conditions (long shifts, nightshifts, weekend shifts, mentally and physically demanding labour) (Jindra 2006; Tomášek 2007, quoted in Křížková 2008).

Similarly in Ireland there are tendencies of over-representation of women in low skill occupations and sectors. When compared with other EU countries, Ireland’s retail sector is skewed towards employment of those with lower levels of educational attainment. One third of retail workers hold education levels lower than upper secondary, and just over half are at upper secondary. ‘In 2003, 4.7% of those in the wholesale and retail sector participated in formal education or training, while 12.7% participated in non-formal education of training and 41.6% in informal training’.

A 2006 FAS survey in Ireland found 126,900 out of 2,037,700 workforce employed as ‘sales assistants’, deeming it the single most populated occupation in the economy as a whole. Within this occupation, 73% of employees are women and almost half of the workers are employed part time. 122 work permits were issued in 2006, demonstrating what has been clearly deemed a

labour shortage, with 60 vacancies having been left ‘difficult to fill’. Sales assistants comprise 62% of the more broad category of ‘sales occupations’ which employed 200,000 persons in 2006, or 10% of Ireland’s workforce. Between 2001 and 2006, over 40,000 additional posts were created in sales occupations, and 30,000 of these were for sales assistants. Women constitute over half of all marketing managers and almost three quarters of all sales assistants (FAS/EGFSN 2007, quoted in Barry 2008).

Women are more visible in the junior manager professional (47%) than in the senior managing positions (16%). Employment trends in Ireland have followed a particular pattern in recent years. Sales marketing managers are being increasingly outsourced which indicates a skill shortage in this area of the retail sector, particularly in relation to representatives with technical, product and sectoral knowledge. Addressing these skill shortages is key to the development of Irish companies in the global marketplace. There is also a shortage of sales assistants, made evident by the increasing number of non-Irish employed as such. (FAS/EGFSN 2007, quoted in Barry 2008).

Table 23. Employees in the Retail Sector – Extent to which Male/Female Employees have Sought Promotion and Have successfully Been Promoted within Last 5 Years, Ireland

Gender	% Who have Sought Promotion	% Who have been Successfully Promoted
Male	33.3	23.9
Female	21.3	20.5
Total	24.5	21.5

Source: Indecon (2002) Survey of Employees in the Retail Sector, quoted in Barry 2008

In the Czech Republic, women employees’ wages equals 93% of men’s average wage in the occupation of supermarket cashiers and their wage equals 71.5% of men’s average wage in the sales occupation. According to Indecon’s 2001 survey, 59% of female employees in the retail sector in Ireland earned less than €18,000 per year, while the corresponding figure for males was 35%. Further, 89% of females earned less than 24,000 per year compared with 72% for males. When surveyed, approximately one third of both male and female retail sector employees responding indicated their belief in the existence or discrimination between men and women in the workplace (Indecon, 2002).

Factors affecting the gender pay gap could be the younger age profile among women employed in the retail sector as well the high incidence of lone parenting affecting almost 17% of female employees in the sector. This leads to high incidence of women working part-time, due of the lack of affordable and accessible childcare and thus the need for flexibility in working arrangements, especially for lone parents.

Interestingly, studies in the Czech Republic indicate that occupation of a sales cashier has gradually gravitated towards a part-time form of employment, while the workload remained the same or was even greater than before, when performed full time. This also brought about a change in the types of employees that are able to work in this kind of changing occupation. While we would expect that part-time work would be useful, for example, to women on parental leave, the real organisation of work and the real working conditions and contract terms mean that this work is actually best “suited” to ad hoc employees like students or older workers – e.g. women prior to retirement, who are often discriminated against in other occupations on the basis of age and gender. Recently there has been a trend of employing foreigners, which is a relatively new phenomenon in this occupation. This mainly involves workers from Slovakia.

Box 17. The most frequently occurring problems in commercial chains

Czech Republic. *As part of the “Garde” project in the Czech Republic, the Ecological Legal Service conducted a legal analysis of the most frequently occurring problems in commercial chains:*

- *The employer does not allow employees an adequate break for food and a pause;*
- *The employer does not allow employees enough time to rest between shifts;*
- *Insufficient time off during the week;*
- *The employer maintains a dual record of working hours;*
- *Employees are not paid the same wages for the same work;*
- *The employer does not pay overtime;*
- *The employer does not provide employees with training on work safety and protection*

Source: Analysis of the Problem of Discrimination 2006, quoted in Křížková 2008.

According to a survey conducted in Ireland, (Indecon 2002), Employers felt that working conditions and recruitment opportunities were consistent across genders. Few employers have implemented crucial formal programmes to address gender issues. When employees were surveyed about employment and pay conditions, responses showed little differences between the genders. The most important approaches to improving the situation were cited as: make improvements to the availability of childcare support; provide flexible working arrangements; provide improved and more flexible paid maternity and paternity leave arrangements. Employers also ranked provision of childcare as the most important approach to addressing the gender pay gap (90% listing this as important or very important), followed by provision of enhanced training and job search assistance for women re-entering the job market (87%), flexible working arrangements (83%) and greater educational training support for females (72%) (Indecon, 2002). Gender differences in positions held in retail work, combined with the female dominance of the retail sales positions was seen to translate into more women experiencing tiring or painful positions, such as standing or walking for most of their working hours. Indecon’s analysis of the retail sector highlights the high rate of growth within this female-dominated sector together with a high rate of staff turnover, a high level of part-time working and a significant percentage of women lone parents, in a sector in which low pay is prevalent and 'a substantially lower proportion of females are in managerial/ administrative positions'.

Down-gradation of an occupational sector: It becomes evident from both the countries in case that the sudden expansion of the retail market has also led to the down-gradation of its occupational esteem. In Czech Republic, especially, in the normalisation period this occupation had a relatively high status, because it signified a link to goods that were in short supply, and therefore also a link to a wide social network and the possession of a certain type of power to distribute goods and exchanges services. With the onset of capitalism and the arrival in the CR of large foreign supermarket chains with their fast-moving goods in the 1990s the status of this occupation fell and smaller shops were squeezed out of the market. To quote from Marcel Tomášek’s qualitative study of supermarket cashiers in 2006-2007, “Up until the mid-1990s the job sector for shop salespeople and workers in grocery and consumer goods stores typically offered a full-time eight-hour workday and open-ended contracts, while at present this sector of the job market is heavily based on groups in the workforce traditionally regarded as a marginal section of reserve employees in the CR, and what has occurred in this sector is an illustrative example of how a specific occupational sector is being downgraded in the Czech environment.” (Tomášek 2007: p.11, quoted in Křížková 2008)

10. Police

(Slovenia)

There is a high degree of gender segregation in occupations such as the armed forces and police. The duty of “protection” has been traditionally considered a male task as women are more attributed to care-giving tasks. A case in the point would be a study of Slovenia where women constitute a mere 14.4% of the total police force, as of 2007. The first uniformed police women were employed only as late as 1973, when Slovenia was still part of Yugoslavia. In 1973, there were 6 women in the force, which grew to 187 in the next 10 years (4.5% of all police force). In 1993 the proportion of women police personnel dropped to 3.2%. In 1996, the independent Republic of Slovenia employed its first police women, after organizing special educational courses for women police officers.

According to data from the Human Resources Department, since 2000 women have been regularly employed in the police, however, the proportion of them have increased only slightly over the years. Women are seen to be employed in a greater proportion in the peripheral services in the police force (22.18%), while only 12.24% are part of the uniformed police force. There is a disproportionate share of women with fixed term agreements, considering their share in the total number of employees.

Part-time work is a rarity in the police service in Slovenia. So during pregnancy, policewomen are designated to administrative work. There is a significant gender gap in pay of the Slovene police force (30.1% in 2000). However, with the increase in the share of women employed the pay gap has decreased to 22.7% in 2005.

Table 24. Average gross wage of policemen and policewomen in Slovenia, 2000-2004

Year	Average wage total	Average wage - men	Average wage - women	Women wage as % of men	Number of employed persons	Number of employed men	Number of employed women	% of employed women
2000	218959	225304	157561	69.9	3812	3455	357	9.4
2001	245750	253660	172765	68.1	4367	3940	427	9.8
2002	256948	264609	191350	72.3	4590	4110	480	10.5
2003	282559	289073	226567	78.4	4625	4143	482	10.4
2004	286404	293599	229397	78.1	4854	4310	544	11.2
2005	289593	298098	230543	77.3	5258	4596	662	14.4

Source: Kanjuo Mrčela 2008

In a study of wage differentials (Kozel 2002) an analysis was made between two highly gendered occupations, namely the feminized nurse/medical technician occupation and the highly masculinised occupation of police officer. According to data of Ministry of internal affairs in 2002 there were 6.8 % women among police officers, while according to Ministry for health in the same year there were 11% of men among medical technicians (Kozel 2002). Both these occupation because both are placed in the same tariff rank of the Slovene standard classification of occupation and have a number of similar characteristics such as:

- both are in the public sector,
- both are seen as socially useful,
- both demand regular and direct interaction with people,
- both involve work in shifts (night and week-end work, work on holidays),
- both include high physical and psychological demands,
- both have expectations of emotional work
- both include exposure to health and security risks at work.

Table 25. Factors determining wages of two occupation in the same tariff class.

Factors	Police officer	Nurse/ Medical technician
Basic factor for wage determination	2.30	2.20
Minimal supplements*	0.05 < than For medical nurse	0.05 > than For police officer
Maximal supplements**	1.36	1.05
Total	0.41 > than For medical nurse	0.41 < than For police officer

* supplements that are connected with the job and are paid as a part of monthly wage.

** total of minimal and special supplements that are connected with the job position.

Source: Kanjuo Mrčela 2008

The study reveals that in spite of being in the same tariff classification, factors used for wage determination were more in favour of male dominated occupations. More importance is attached to supplements for dangerous job, work with mentally ill people, night work etc. Data from The Association for evaluation of work, organizational and human resources development (1998) analysed earnings of nurses and police officers in 1996. The earnings of medical nurses amounted to 65 % of earnings of police officers. In the same year, women police officers had 9.2 % lower earnings than their male colleagues, while male medical technicians had 17.5 % higher earnings than female nurses.

The above cited examples and analysis reflects which occupation is socially more valued. Hence in spite of similarity of job contribution, there are some aspects, largely related to masculine virtues which are more 'valuable' than others.

Overall summary

For the EU as a whole the level of segregation measured by two of the most commonly used indexes – IP and ID – remains high and has changed little since the early 1990s. According to the IP index about 25.3% of all people employed in 2007 would need to change occupation in order to bring about a gender even distribution of employment, the theoretical maximum being 50%. A slight upward trend in segregation is detectable, with an increase of about one percentage point in the index for the EU12 area since 1992, and for the EU27 area since 1997.

However, differences among countries are wide in both levels and trends. There is a gap of about 10 percentage points in the IP index between the most segregated and the least segregated country. Whether occupational or sectoral segregation is considered, the four high-segregation countries are Estonia, Slovakia, Latvia and Finland, and the four low-segregation countries are Greece, Romania, Malta and Italy. The well-known opposition of the 1990s between high-segregation Nordic countries and low-segregation Mediterranean countries has given way to a similar opposition between (part of) the East and (part of) the Mediterranean.

Over the past decade segregation decreased in Austria, the Czech Republic, Denmark, Norway, Sweden and the UK, increased in Bulgaria, Ireland, Italy, Latvia, Romania and Spain and recorded little change in the remaining countries. With the exception of a few countries, the increase in measured levels of segregation reflects a parallel increase in mixed occupations, and conversely.

Temporary increases in segregation should be considered with caution, since there is evidence that a trade-off may arise in the short or medium run between the objective of raising women's employment and that of favouring de-segregation. Such evidence includes a positive cross-country correlation between female employment rates and measured levels of segregation.

Not all segregation implies inequality. With specific reference to pay, the decomposition of overall segregation into a vertical component capturing inequality in hourly pay and a 'neutral' component indicates that the latter is often larger than the former. Nevertheless, the inequality dimension remains important and demands clear understanding of the root causes as well as the implications of the phenomenon.

Recent research on the root causes of segregation prioritises four groups of factors: choice of education, hours of work and differential commitment to family income, stereotypes, and covert barriers and biases in organizational practices, including pay setting procedures. Their respective importance varies across countries, occupations, sectors and cohorts of women. In high paid, professional occupations, in particular, there is evidence that the influence of some of these factors of segregation is diminishing, especially among younger cohorts of women, whilst this is less clearly the case for low pay occupations.

In view of women's spectacular advances in education across member countries, it is segregation by field of study rather than level of formal education that still matters. Since, however, the correspondence between occupation and field of study is close for only about 10 percent of the jobs, the importance of the former should not be overstated.

Stereotypes are ubiquitous and continue to influence behaviour, but the actual role that they play in segregation may be overestimated by qualitative research, since sometimes they are used to rationalize or even legitimize ex-post choices that might have been made on other grounds.

The unequal care burden and the consequent inability to prioritize income commitment within the family underpin segregation throughout the employment structure, driving the search of many women for shorter and more flexible hours of work. Among qualified women (the ‘professionals’) this search for hourly friendly occupational niches often results in re-segregation within occupations, or it hinders entry into occupations featuring high/irregular work hours and workload. When the search for shorter working hours becomes a choice for part-time work, the range of occupations available to women narrows further, as underlined by much higher levels of segregation among part-timers.

Legal barriers to entry or overt restrictive practises have long been outlawed, but covert biases and exclusionary practices are still embedded in the way many organisations work, often restricting career paths and career prospects within occupations. Examples that bear special importance for vertical or hierarchical segregation are closer rungs on ladders in feminised jobs career tracks, discretionary managerial practices for selection, hiring and promotions, networking, and mechanisms of cooptation.

Research and policy attention on the invidious components of segregation has traditionally prioritised wage inequality, including undervaluation of female work and discrimination. Lately, consideration has broadened to encompass skill and labour shortages as well as a potentially unequal distribution of job quality, and this report has reviewed all these dimensions. Following the proposal of The European Foundation for the Improvement of Living and Working Conditions job quality is understood here as comprising, respectively, career and employment security, health and well-being of workers, reconciliation of working and non-working life, and skills development.

Undervaluation is still widespread, but it is low pay occupations that are especially exposed to this risk. According to the literature and the evidence from the case studies, the most frequent factors at work include the degree of ‘professionalism’ of the occupations - as signalled by the length of the career ladder or the amount of training required - the visibility of skills, and biases in job evaluation and pay setting practices – such as lower grading for comparable tasks or lack of compensation for similar extra (e.g. inconvenient hours).

Furthermore, there is statistical evidence that segregation may lead to discrimination, although the order of magnitude is controversial. Cross-country studies do not find a significant impact of segregation on discrimination, whereas detailed, country-specific econometric analysis confirm that segregation between occupations but also within occupations and between sectors or industries accounts for a large share of discrimination.

Concerning job quality, analysis of selective indicators for the different dimensions of job quality indicates that, in addition to pay, important gender asymmetries still concern long working hours, career prospects, and access to managerial and supervisory positions, all of which are channelled via occupational segregation to a greater or lesser extent. However, additional job characteristics impinging on quality do not markedly differentiate between men and women. These comprise the distribution of fixed-term contracts and related chances of transitions from permanent to stable employment, the distribution of non-standard hours, and opportunities for skill development within occupations.

Segregation does not facilitate efficient reallocation of labour supplies, male and female. Current labour projections indicate that skill and labour shortages will affect both male and female dominated occupations in the medium run, even more the former than the latter. Also a degree of polarization is emerging in the pattern of future skill needs, with growing occupations at the

lower end of the spectrum unbalanced in favour of female-dominated jobs, and growing occupations at the top end of the skill spectrum unbalanced in favour of male-dominated jobs. This adds cogency to a policy of de-segregation, because the latter can favour the redistribution of labour supply flows while also redistributing opportunities for the development of higher skills. If this is to happen, however, de-segregation must be pursued in both directions, attracting men into feminised areas such as care work, and further promoting women's advancement in male dominated areas.

These findings call for a targeted and at the same time coordinated policy approach to de-segregation pivoting on three priorities: countering the under-valuation of women's work, pursuing men's entry into traditionally feminised occupations, and meeting skill and labour shortages. As a general rule, however, policies currently implemented are neither well targeted nor well coordinated or monitored. In the best of cases, a variety of different initiatives are implemented that do not sum up to a coordinated, effective strategy.

Policies to tackle segregation have a long-standing tradition in relatively few member states, primarily the Scandinavian countries, the UK, France, the Netherlands and Germany. In Eastern European and other member countries segregation is not seen as an issue or has only recently entered the political agenda. As for Southern European countries, they are still striving to increase female employment, and their primary interest is in provisions for reconciliation. The latter help building the necessary pre-conditions for de-segregation and ought therefore to be given central place in a comprehensive policy approach to the problem. However, since they have been extensively documented and discussed in previous reports they have been disregarded here.

Of the provisions specifically devoted to de-segregation and currently implemented by member states, training remains the most popular. However, the range is wider, as measures go from those aiming to influence attitudes early in life, to those countering undervaluation and discrimination, to positive action such as quotas.

Most of the countries with the longest traditions of fighting segregation show willingness to address the 'early in life' roots of segregation by investing in 'motivational events' or in educational programmes designed to positively encourage 'atypical' choices among young boys and girls, and to fight stereotypes by promoting new role models. Although these initiatives are examples of best practices rather than routine events, they signal a welcome change of perspective. Unlike in the past where the effort went into changing women towards becoming more like men at work, in these events both boys and girls are familiarised with tasks, skills and models of the opposite sex.

In principle, unbiased job evaluation is a key tool to upgrade women's work. However, few countries have a tradition of job evaluation. Among them are Belgium, Germany, the Netherlands, the UK and Finland. Investigations conducted in three of these countries – Finland, the Netherlands and Norway - conclude that biases arise not so much from job evaluation systems *per se* as from the way in which they are implemented.

Where skill is less visible or goes unacknowledged, forms of certification can be used to counter undervaluation and undergrading. However, there are few mentions of such good practices in national reports, except for France and Lichtenstein. Measures aimed at re-dressing biases in organizational practices other than those concerning job evaluation or certification of skill are also scanty. The exception is quotas. The drive for positive action in Europe lost momentum in the late 1990s following the *Kalanke v. Freie Hansestadt Bremen* case. Since 2004, however, the

Norwegian success story for quotas on company boards has been revitalizing interest and policy initiatives.

Most of the action in favour of de-segregation goes to training, the traditional and still the most popular policy option. Training attracts two main criticisms: the first is that past provisions have been largely ineffective or have actually reinforced segregation; the second is that men have rarely been targeted while women have often been targeted in the hope that they would fill vacancies in technical areas of employment that had lost attractiveness for men. Both call for an overhaul of training and vocational systems in place.

In the past, this lop-sided approach to training (or to education) may have been partly justified by the fact that women were still a labour reserve in many countries, and labour or skill shortages arose primarily in male-dominated occupations. The combination of female participation close to the seventy percent mark in several member countries and fast growth of feminized services and care occupations is giving rise to shortages in female-dominated occupations that are expected to continue in the medium term. Programmes to overcome shortages by way of de-segregation can no longer, therefore, fail to pursue men's entry into female jobs.

On its own, however, training cannot succeed to redirect male and female workers where they are most needed. In particular men appear to respond first and foremost to pay, thus the issue of undervaluation of feminized occupations must vigorously be pursued in parallel with training, particularly at the low-end of the pay spectrum.

Fighting undervaluation among low pay workers raises questions that go beyond the problem of segregation and impinge on the larger issue of migrant labour. The rapid expansion of home based elderly care in Mediterranean countries illustrates how shortages in low pay, care occupations are being filled by migrant workers, female, cheap and often irregular. Although this solution raises problems of sustainability in the medium and long term, it can stand in the way of occupational de-segregation or the upgrading of care jobs. Thus potential conflicts but also synergies between de-segregation and reliance on irregular and cheap migrants' labour must be evaluated in any attempt to tackle de-segregation at the bottom of the employment pyramid, whether the target is undervaluation or labour shortages.

One issue has been overlooked in this report although it is becoming a concern among some scholars and politicians. As the case studies on doctors, pre-primary teachers and judges indicate, the growing feminisation of teaching - including pre-primary- medical care or the judiciary raises concern because a good balance of male and female role models, cultures and identities is allegedly needed to satisfactorily meet the demands of students, patients or citizens. The argument is clearly controversial but it is likely to give rise to passionate debates, thus raising the priority for the demand of a more gender balanced distribution of employment in the political agenda.

A. Appendix of Tables

Table A.1. Indexes of gender segregation: occupational and sectoral, EU countries 1997-2007

Country	Year	Occupational					Sectoral	
		ID	IP	Gini	Percentage of mixed occupations	Percentage of female-dominated occupations	ID	IP
AT	1997	56.4	27.7	62.5	27.4	20.8	40.5	19.9
AT	2001	55.2	27.2	60.1	31.1	20.4	41.1	20.3
AT	2007	52.8	26.2	56.5	28.6	22.9	37.0	18.3
BE	1997	55.0	26.6	56.9	22.4	25.2	37.2	18.0
BE	2001	53.6	26.1	54.3	24.5	25.5	37.1	18.1
BE	2007	52.2	25.8	53.1	29.5	23.8	37.7	18.6
BG	1997	na	na	na	na	na	na	na
BG	2001	54.3	27.1	52.9	36.6	29.5	35.1	17.5
BG	2007	58.9	29.4	62.8	30.6	33.3	41.7	20.8
CY	1997	na	na	na	na	na	na	na
CY	2001	60.2	29.5	64.9	18.6	26.8	35.7	17.5
CY	2007	58.4	28.9	64.4	22.6	24.5	40.7	20.1
CZ	1997	60.8	30.0	62.0	32.6	27.5	38.6	19.0
CZ	2001	59.3	29.2	59.8	29.9	27.6	38.3	18.9
CZ	2007	58.0	28.5	57.8	26.7	33.6	40.1	19.7
DE	1997	56.0	27.4	61.0	30.0	24.6	36.4	17.8
DE	2001	55.4	27.3	60.1	29.4	25.7	37.0	18.2
DE	2007	53.8	26.7	58.7	27.5	23.9	37.0	18.4
DK	1997	56.3	27.9	61.3	31.0	24.8	39.1	19.4
DK	2001	56.6	28.1	60.3	28.8	25.2	38.2	19.0
DK	2007	51.7	25.7	53.7	32.8	24.1	37.9	18.9
EE	1997	61.8	30.9	62.1	29.4	38.2	43.5	21.7
EE	2001	64.8	32.4	67.4	23.0	41.0	48.8	24.4
EE	2007	64.3	32.2	64.7	22.1	39.4	52.2	26.1
EL	1997	45.3	21.0	38.6	33.6	24.3	32.0	14.9
EL	2001	46.0	21.5	39.5	34.6	24.0	33.0	15.4
EL	2007	47.2	22.4	43.0	30.2	25.5	33.4	15.9
ES	1997	52.5	23.9	59.1	33.3	23.2	41.6	19.0
ES	2001	53.4	24.9	60.9	31.8	23.4	41.3	19.3
ES	2007	56.7	27.5	62.7	32.4	21.3	42.8	20.7
FI	1997	59.9	29.9	64.5	32.0	23.3	44.0	21.9
FI	2001	59.3	29.6	63.4	29.3	27.4	44.0	22.0
FI	2007	59.2	29.5	61.5	26.4	30.2	46.0	23.0
FR	1997	55.4	27.4	63.8	29.9	20.6	35.0	17.3
FR	2001	53.7	26.6	61.6	26.2	22.4	35.2	17.4
FR	2007	53.6	26.7	58.8	24.3	24.3	36.8	18.3
HU	1997	56.4	27.8	60.2	31.5	30.6	37.9	18.7
HU	2001	56.9	28.2	62.3	35.7	26.8	39.0	19.3
HU	2007	58.1	28.8	62.6	30.0	30.0	40.5	20.1
IE	1997	52.4	24.9	54.7	37.0	22.2	41.8	19.9
IE	2001	55.3	26.7	50.2	29.3	24.2	42.8	20.7
IE	2007	57.0	27.9	56.3	23.2	26.3	47.6	23.3
IS	1997	58.3	29.0	61.6	24.5	29.6	44.2	22.0
IS	2001	58.7	29.2	62.2	18.6	26.5	44.8	22.3
IS	2006	55.4	27.5	59.6	28.9	28.9	46.3	23.0
IT	1997	46.6	21.4	48.0	35.2	22.9	32.2	14.8
IT	2001	46.8	21.9	47.3	35.2	23.8	32.4	15.2
IT	2007	49.4	23.6	51.4	29.7	26.1	37.2	17.8
LT	1998	57.4	28.7	47.6	25.8	37.9	0.4	0.2
LT	2001	56.9	28.4	46.3	24.3	37.4	41.7	20.8

LT	2007	58.4	29.2	58.4	26.6	37.6	46.8	23.4
LU	1997	53.7	25.2	59.0	28.7	23.8	40.6	19.0
LU	2001	55.9	26.8	63.8	22.8	22.8	40.9	19.6
LU	2007	54.9	26.7	58.5	19.2	26.3	38.7	18.8
LV	1998	53.9	27.0	48.5	25.2	36.6	0.3	0.2
LV	2001	59.3	29.7	53.8	22.4	42.2	42.0	21.0
LV	2007	60.3	30.1	61.8	19.1	40.9	47.0	23.5
MT	1997	na	na	na	na	na	na	na
MT	2003	56.3	23.8	60.2	29.2	27.1	37.7	15.9
MT	2007	53.5	23.6	56.0	28.1	28.1	33.9	14.9
NL	1997	53.1	25.7	54.5	22.7	23.6	39.6	19.1
NL	2001	52.2	25.6	52.4	24.3	22.5	38.2	18.7
NL	2007	50.8	25.2	52.9	25.9	21.4	37.9	18.8
NO	1997	59.3	29.5	62.9	24.8	24.8	44.1	21.9
NO	2001	56.1	27.9	60.3	23.8	24.8	42.8	21.3
NO	2007	54.5	27.2	59.3	27.7	22.8	45.6	22.7
PL	1997	49.8	24.6	45.3	35.2	26.7	na	na
PL	2001	51.5	25.6	48.7	34.0	25.5	0.4	0.2
PL	2007	52.2	25.8	53.2	30.5	27.6	38.9	19.2
PT	1997	50.2	24.9	51.4	29.0	22.4	40.8	20.2
PT	2001	53.2	26.3	58.3	32.1	23.9	42.8	21.2
PT	2007	53.3	26.5	56.6	32.1	27.5	41.4	20.6
RO	1997	43.1	21.4	31.7	29.3	34.0	29.4	14.6
RO	2001*	23.7	11.8	13.0	33.3	33.3	27.7	13.8
RO	2007	46.8	23.2	39.0	25.9	32.1	32.4	16.1
SE	1997	59.7	29.8	62.7	24.3	24.3	43.8	21.9
SE	2001	56.2	28.0	57.7	26.9	22.2	42.6	21.2
SE	2007	54.1	27.0	55.9	28.7	22.2	42.7	21.3
SI	1997	54.7	27.2	51.7	25.2	24.3	35.8	17.8
SI	2001	54.7	27.2	54.7	26.8	25.9	35.2	17.5
SI	2007	53.6	26.6	52.9	25.5	31.1	35.0	17.4
SK	1998	63.0	31.2	66.9	29.5	29.5	0.4	0.2
SK	2001	62.7	31.2	68.7	33.6	28.7	45.8	22.8
SK	2007	61.4	30.3	66.5	33.1	29.4	47.0	23.2
UK	1997	55.3	27.4	58.4	26.7	19.8	38.4	19.0
UK	2001	54.0	26.8	58.6	27.6	20.4	37.9	18.8
UK	2007	50.9	25.3	53.3	27.6	19.4	37.5	18.7
EU27	2001	49.89	24.53	54.06	36.05	24.49	35.0	17.2
EU27	2007	50.99	25.20	54.04	37.67	23.29	37.2	18.4

Note: *the drastic change in the level of indexes in Romania might be driven by the fact that only 1-digit occupational data is available there for the whole period of 1998-2004. Thus the figures provided for 2001 are not comparable to the extreme points in time.

Source: own calculation using LFS (ISCO 3-digit, NACE 2-digit).

Table A.2. Continuing Vocational Training for men and women in Europe, 2005

Country	Sex	All NACE branches covered by CVT		Mining and quarrying; electricity, gas and water supply; construction; hotels and restaurants; transport, storage and communication		Manufacturing		Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods		Financial intermediation		Real estate, renting and business activities		Other community, social, personal service activities	
		Particip.	Hours	Particip.	Hours	Particip.	Hours	Particip.	Hours	Particip.	Hours	Particip.	Hours	Particip.	Hours
Austria	Males	36	10	34	8	32	9	35	10	70	36	31	7	41	7
	Females	30	7	25	5	27	7	28	5	59	29	19	4	38	7
Belgium	Males	40	13	35	12	44	15	39	11	68	20	41	15	23	8
	Females	39	11	45	13	40	11	29	6	63	17	40	14	23	8
Bulgaria	Males	16	5	18	6	17	4	13	7	38	9	15	7	4	2
	Females	13	3	23	4	9	2	9	3	44	8	10	4	12	7
Cyprus	Males	30	7	32	7	22	4	24	6	65	15	34	15	14	4
	Females	30	6	31	6	24	4	24	4	59	13	29	11	16	2
Czech Republic	Males	63	15	67	15	64	14	53	12	85	52	62	18	56	10
	Females	52	12	55	12	53	10	41	8	75	42	53	13	52	10
Denmark	Males	32	10	25	7	26	9	25	5	38	12	59	20	53	19
	Females	39	12	43	11	30	12	22	7	37	10	57	17	64	20
Estonia	Males	23	7	24	6	17	5	28	7	66	42	32	15	27	7
	Females	26	7	33	7	14	4	29	6	69	40	30	10	33	7
Finland	Males	38	10	35	8	45	11	32	8	61	17	45	17	18	5
	Females	41	9	45	8	43	9	38	6	58	17	44	15	30	8
France	Males	47	13	48	13	47	14	41	11	74	29	45	12	40	11
	Females	43	12	51	13	40	11	30	7	70	25	43	12	40	13
Germany	Males	32	10	26	7	37	10	27	7	46	22	28	11	39	10
	Females	27	8	23	6	29	10	19	4	46	16	30	8	32	7
Greece	Males	13	4	10	3	13	3	16	3	44	13	13	6	3	2
	Females	15	3	10	3	9	2	21	3	43	12	13	4	5	1
Hungary	Males	16	6	23	8	14	5	12	5	44	19	11	6	9	3
	Females	15	5	28	11	10	4	14	4	35	10	10	4	13	3
Italy	Males	29	8	29	8	24	6	27	7	76	29	36	10	24	4
	Females	28	6	27	7	15	4	30	5	70	25	33	5	22	5
Latvia	Males	14	4	16	4	11	3	12	3	41	10	13	6	13	2
	Females	15	4	15	4	11	3	12	3	48	10	15	5	15	3
Lithuania	Males	15	5	16	6	14	5	12	3	46	20	20	7	9	2
	Females	14	4	17	5	10	3	11	2	51	19	18	6	13	3
Luxembourg	Males	48	14	33	13	50	24	46	7	78	20	59	13	47	25
	Females	51	17	37	13	43	22	35	10	78	24	48	25	65	17
Malta	Males	30	11	32	9	33	15	14	8	70	14	25	14	15	3
	Females	36	12	31	9	49	23	10	4	74	14	32	13	9	3
Netherlands	Males	36	13	37	12	35	14	29	9	54	22	39	17	30	11
	Females	31	10	33	12	28	10	23	6	54	17	31	12	31	7
Norway	Males	30	10	24	8	29	13	32	9	45	25	39	7	35	9
	Females	28	8	20	5	26	10	28	7	48	24	26	6	45	11
Poland	Males	21	6	22	7	21	6	17	5	46	24	15	5	12	2
	Females	20	6	30	8	16	4	15	5	45	18	16	5	14	2
Portugal	Males	29	8	26	6	26	7	33	10	68	16	29	10	23	6
	Females	27	7	31	8	18	5	35	9	65	14	23	7	25	6
Romania	Males	18	6	16	6	20	7	14	3	56	14	21	10	10	1
	Females	17	4	17	6	15	4	13	3	58	13	16	5	16	4
Slovakia	Males	42	13	48	14	45	13	41	17	75	34	22	6	19	5
	Females	31	10	34	12	27	8	36	10	75	39	21	6	19	6
Slovenia	Males	48	15	39	13	53	16	42	10	85	28	40	18	54	13
	Females	55	14	44	11	54	15	58	7	76	26	46	15	53	25
Spain	Males	33	8	29	7	34	8	30	11	66	19	38	8	21	6
	Females	35	9	37	8	32	8	32	12	69	20	33	6	23	5
Sweden	Males	47	16	46	9	50	22	48	12	44	9	43	19	48	15
	Females	45	14	38	9	49	24	41	8	55	11	44	16	52	18
United Kingdom	Males	32	6	32	6	30	5	18	4	42	9	43	9	50	10
	Females	34	7	35	4	27	5	22	4	45	15	40	10	46	12

Note: average for all NACE branches of economy.

Source: Own elaboration using ESTAT data.

Table A.3. Policy issues for occupational segregation by gender at the national level

	<i>Current policies</i>	<i>Comments</i>	<i>Recommendations by the experts</i>
AT	A range of different policies is in place. Individual educational pathways and career choices are being monitored and influenced with a view to de-segregation. A gender balanced distribution of unpaid care work is being promoted. Positive action measures for the promotion of women have also been implemented: a voluntary 40% quota for female employees in all fields, at all levels has been set; grants of €10,000 are assigned to the ten best positive action plans in SMEs.	The training and qualification measures enforced in the care sector so far have contributed to consolidating gender segregation in the labour market.	<ul style="list-style-type: none"> • Develop further qualification and career-planning measures for female care workers. • Improve working conditions, especially working schedules, as well as opportunities to reconcile work and family obligations.
BE	The existing job evaluation system has not proved successful for reducing segregation and is now being reformed. In order to tackle skill shortages, the government in 2006 asked regions and the social partners to list the so-called ‘critical activities’. These latter turned out to be overwhelmingly male, which launched the debate on how better to approach the issue in order to avoid exacerbating segregation.	In the recent political debate unions insist that the causes of mismatches need to be identified and more women should be attracted to deficit professions before external labour is resorted to. However, the belief that shortages should be filled by resorting to the immigration of selected qualified people has wide currency in the debate.	<ul style="list-style-type: none"> • Include the gender dimension into studies on skill shortages, carried out by local government.
BG	The issue of employment segregation is relatively new for the country and has not been the subject of regular studies or of policy debate.	Policies on de-segregation may conflict with limited employment opportunities in some regions that push women to accept any job offer.	<ul style="list-style-type: none"> • Carry out systematic analysis on gender segregation, and develop gender sensitive statistical data. • Initiate public debates on the issue of segregation.
CY	Segregation is not seen as a policy issue.	The gender pay gap in the country is largely due to occupational segregation. The latter has been addressed by various training programmes for women, which, however are so designed that they further sustain the phenomenon.	<ul style="list-style-type: none"> • Training should be redesigned in order to not add to existing stereotypes. • School counsellors must be trained to combat sexist stereotypes; action must be taken to change stereotypes, including those in textbooks and the media. • State scholarships would ease girls’ entry into traditionally male educational fields. • Incentives should be provided to encourage unemployed women to enter traditionally male dominated areas.
CZ	Segregation is generally recognized to be one of the main causes of disparities between men and women. Nevertheless no concrete measure has been taken to address de-segregation.	At the political level there is no mention of the possibility that women could be encouraged to enter occupations at risk of skill shortage, although these occupations are predominantly male.	<ul style="list-style-type: none"> • At every level of the education system, teachers and counsellors should be encouraged and trained to increase awareness of stereotypes and start questioning them.

		The vast majority of training programmes are not aimed at such rebalance but rather serve to reinforce traditional stereotypes.	<ul style="list-style-type: none"> • Motivational events can be organised for students to encourage them to choose fields of study not in line with gender stereotypes
DE	The 2003 reform of job evaluation and motivational events are two prominent recent policies. The said reform, launched in 2003 was also aimed at creating 'gender-fair job evaluation and grading system in order to fight undervaluation. Motivational events like Girls' /Boys' Day (Box 5) are becoming common practise and prove to be effective in attracting the interest of secondary-school attendees to professions atypical for their sex.	The new job evaluation system is more transparent and uniform, but the lower wage groups experienced the decrease in the pay rate. These are mainly female dominated. Women hardly enter typical male-dominated occupations because employment conditions in these occupations were and remain unattractive. There are no institutions to formally back claims against pay discrimination, and it is still up to single employees to oppose it.	<ul style="list-style-type: none"> • Support campaign for an increase in wages and improvement of working conditions, in particular for low-skill occupations. • Pursue gender sensitive education policy. All actors (e.g. parents, schools, employees, universities) should join efforts in order to ensure equal opportunities in all fields. • Act for a change in employers' personal policy which is driving occupational segregation at the firm level.
DK	Gender segregation is still considered to be a problem by public authorities in Denmark. A study on the issue has been commissioned by the government in 2006 and has lead to a memorandum on 'how to' break down segregation drafted by an interdepartmental group at the Ministry of Equality, Employment and Education. However, de-segregation is not a special objective of active employment policies. Public authorities, employers and organizations can, if they want to, set up initiatives to attract women or men if either represents less than 25% of the workforce.	Job evaluation is recognized to be the main pre-condition for tackling segregation, but it is used to a very limited extent.	<ul style="list-style-type: none"> • Reconsider the competences transmitted by the different educational programmes, and at the same time give a less gender biased educational guidance. • Attract more men to female dominated areas. Higher pay is an effective tool. • Increase awareness about the re-creation of asymmetries (including differential access to leading positions) among men and women with the same qualifications. • Make the sharing of parental leave more equal and reduce the rigidity of opening hours in child care facilities.
EE	Policies addressing horizontal segregation include: educational guidance and career counselling (for students and, since, 2008 also for adult workers); popularization of vocational education among young persons while raising its effectiveness for matching labour supply and demand.	An equal pay policies may demand additional legislation. Many policies aiming to support female entrepreneurship often reinforce segregation. Vertical segregation is acknowledged to be a problem but has attracted no policies; lack of data at the enterprise level hinders analysis. Only about one third of students were given career counseling at school, despite the fact it is provided in all Estonian schools.	<ul style="list-style-type: none"> • Monitor and guide the educational choices of boys and girls; • Improve statistical data collection, introduce gender dimension. • Increase the awareness on the issue of segregation among the population at large, but more so among employers.
EL	Segregation is primarily tackled via education, especially by giving guidance to students in secondary and post secondary education, as well as in curricular training. In addition, a special scheme has been designed to enhance female entrepreneurship, a	Initiatives aimed at creating favourable institutional and social environment for change in firm's management and organisational practices have not produced concrete results, and may remain on paper without political and social pressure.	<ul style="list-style-type: none"> • Carry out critical assessment of the measures implemented to address segregation during the last 6-7 years. • Prioritise the re-evaluation of female-dominated occupations and involve women in this process.

	30% quota has been set for women's representation on promotion panels in the public sector, and positive actions have been undertaken to further women's career within firms.		
ES	The debate on segregation is quite recent because efforts have gone primarily into raising participation and reducing unemployment for women. It is expected that the establishment of the Ministry of Equality will help promoting desegregation. Important steps in this direction are the 2007 Law on gender equality banning any form of discrimination and the Law on Personal Autonomy and Assistance to Dependents (2006) promoting reconciliation.	No institution is in charge of regularly monitoring segregation, analysing its implications, and publicizing the results. Academic research can only partly and unsystematically fill the gap.	<ul style="list-style-type: none"> • Include the gender perspective in all official data disseminations. • From kindergarten to higher education work on changing gender stereotypes and encouraging men and women to achieve their full potentials. • Provide appropriate social services in order to relieve women from a disproportionate care burden.
FI	The country has a long tradition of dealing with gender segregation, which nevertheless remains quite high. Lately, however, there is limited academic political interest in the issue and it concerns vertical rather than horizontal segregation. The National Thematic Network for Desegregation in the Labour Market (2003-2007) outlines future policy directions. Most projects are funded through ERS and include initiatives to motivate children to make educational choices atypical of their sex. A project worth mentioning is that which assesses the impact of job evaluation on gender pay disparities.	Assessment of the impact of job evaluation systems revealed that gender bias stems primarily from lack of uniformity in the way job evaluation is actually implemented.	<ul style="list-style-type: none"> • In order to raise pay action should be taken to acknowledge the competencies and demands made by low-pay 'female' jobs. • Practical actions such as information sharing, education and management training should be taken for job evaluation systems to be working according to their intentions.
FR	Long-standing de-segregation policies in France include campaigns to affect educational choices of boys and girls (since the 1980s), and 'gender balance contracts' to facilitate women's entry into male-dominated occupations (since 1987). A programme launched in 2004 focuses on potential discrimination arising from biases in skill grading and evaluation criteria used.	There are no actual measures to promote men's access to jobs where women predominate. Actions directed at companies are not sufficiently developed; for instance signed gender balance contracts were fewer than expected, and the measure has not proven effective. The implementation of job evaluation schemes suffers from the fact that the actual job content of many female dominated occupations and skills often remain 'invisible'.	<ul style="list-style-type: none"> • Address the persistence of stereotypes by balancing the composition of occupations. • Develop actions directed at companies, in particular their recruitment policies and exclusion practices in organisation. • Upgrade jobs and working conditions as a necessary pre-condition to achieve gender balance. • Invest further into the development of non-discriminatory job evaluation systems. • Involve trade unions for better implementation of existing legislation
HU	Social policy, labour policy and educational policies are in place but do not directly address segregation. Some may have an indirect impact: since 2002, for	Actual implementation of the policies on segregation is not monitored, while there is a need for feedback and ex-post evaluation.	<ul style="list-style-type: none"> • Raise gender awareness in order to increase the economic and social returns of gender equality. • Reduce taxes on part-time employment in response to the

	example, women returning from maternity leave can take part in integrated labour market programmes which offer training and work experience and subsidise commuting costs and employer's contributions.	Current legislation on maternity leave and childcare allowances hinders the growth of employment level of mothers with small children, because of the excessive length of the average spell of benefits that keeps women out of the labour market.	increase in the share of part-timers. <ul style="list-style-type: none"> • Provide well targeted subsidies as an incentive for employers offering low-skill jobs in disadvantaged areas. • Support life-long learning.
IE	Recently proposed policies for tackling vertical segregation include: addressing indirect discrimination in recruitment and promotion systems; pro-actively developing women for management; incorporating greater accountability into organisational practice and awareness raising programmes on the benefits afforded by equal opportunities. Additional provisions include training programmes; work placements for women in under-represented areas; information initiatives to facilitate recognition of women's skills among managers; and the setting up a network of Women in Technology and Science.	Despite many initiatives undertaken in recent years, inadequate training has been identified as an important factor contributing to the lack of opportunities for women.	<ul style="list-style-type: none"> • Broaden the range of subjects for boys and girls in secondary-level education. • Develop career advice programmes, provide in-company training targeted at women, and broaden the apprenticeship system to include job areas where women are better represented. • Foster networking and mentoring for women in training, education and employment, establish formal criteria for recruitment and promotion and increase female representation within professional bodies. • Implement access to flexible working arrangements without career penalties. • Integrate gender informed job evaluation into wage setting. • Favour redistribution of the care burden and improve social and care infrastructure.
IS	The main areas of intervention are the educational and occupational choices of young men and women, and pay in female dominated public jobs. The government is targeting pay rise in these jobs so as to also make them more attractive to men.	Women have limited access to investment initiatives leading to the creation of new jobs.	<ul style="list-style-type: none"> • Inform young men and women about non-traditional educational and occupational choices and provide support to those who choose to enter non-traditional studies and occupations.
IT	Under-representation of women in decision making positions has been recently at the centre of media and of political debates, but has not translated into a wider interest in segregation or a policy approach towards de-segregation.	Given the trade-off between overall segregation and growth of female employment, desegregation Policies should not be carried out across the board but ought to be targeted.	<ul style="list-style-type: none"> • Possible targets for de-segregation are occupations with strong hierarchical segregation, low-pay occupations, especially in the care sector; occupations threatened by skill or labour shortages. • Policies to tackle hierarchical segregation ought to be largely occupation specific, like promoting professional studios among female doctors or fostering academic networking. • De-segregation of low pay occupations necessarily encroaches with migration policy. • Finer forecasting analysis is needed to precisely identify the occupations threatened by shortages.

LI	Segregation is explicitly addressed primarily via education and communication. Measures include career guidance, vocational orientation and motivational events (see Box 5). Awareness rising is pursued through measures like the Equal Opportunity Prize for women-friendly and family-friendly businesses.	In past years some attention of policy makers was given to the situation of women wanting to re-enter the labour market after a career break. One of these measures was the introduction of Volunteer Work Certificate. While the certificate represents social recognition of the unpaid work and could facilitate re-entry of women into the workforce, it reinforces gender stereotypes.	<ul style="list-style-type: none"> • Introduce disaggregated data and statistics by gender. • Raise awareness of Gender segregation in employment. • Provide career-guidance and vocational orientation of men and women, especially the young. • Develop qualification measures, life-long learning programmes and financial support for women during certain phases of their lives. • Promote expansion of qualified part-time work.
LT	De-segregation is not directly a policy target.		<ul style="list-style-type: none"> • Raise awareness of the issue of segregation, and combat persisting gender stereotypes. • Increase employment opportunities for women. • Improve reconciliation between family and work. • Raise women's motivation, competence and ability to take part in decision making processes.
LU	The policy debate remains focused on gender wage inequality and on child care, both of which are relevant for segregation. The main effort has traditionally been directed to developing legislation that may facilitate women's entry or re-entry into the labour market. Examples are the right of two years unpaid leave in the public sector (1994), the right to parental leave in 1999, and the 2003 lengthening of this leave.	Half of the women who choose to interrupt their career do not resume work ever. Several programs address this problem, but they mostly target feminized occupations, thus reinforcing gender segregation.	<ul style="list-style-type: none"> • Investigate the reasons for career breaks. • Redesign training policies so as to help women enter better paid and prestigious occupations, thus raising interest in sharing the breadwinner role.
LV	Current policies do not directly address gender segregation, although they might indirectly influence the phenomenon. Included in these policies are education and vocational training programmes aimed at promoting higher education for women. One exception is a small scale initiative to train unemployed women in male dominated skills (20 women involved).	One heritage from the past is women's wide access to the different fields of education and the different professions. However they still have very limited access to top-ranked positions. Vertical segregation is the biggest problem. The objectives of publicly funded training schemes do not include any gender perspective, and actually end up reinforcing stereotypes.	<ul style="list-style-type: none"> • Focus on vertical rather than horizontal segregation. This also implies support to reconciliation of work and family life and stronger limitations on the long hours for leading managers and administrators. • Redesign training policies in view of their effect on segregation • Include the issue of segregation perspective into the gender mainstreaming of policies.
MT	Policies are mainly aimed at increasing the labour market participation of women rather than addressing segregation.	Policy debates are dominated by the idea that reconciling work and family means improving conditions for women to do both. At the same time there is no public debate about how fathers can balance their economic and family commitments.	<ul style="list-style-type: none"> • Challenge existing gender stereotypes by adopting a different view point on the sharing of paid and unpaid work. It is crucial both to change men's attitude to care and to make time for them to engage in care.

NL	<p>The policy discussion is focussed on increasing participation alongside reducing segregation, both horizontal and vertical. A 25% target for women in corporate board has been introduced, extending the target already set for the public sector in 2001.</p> <p>One million Euros have been added to the budget in 2008 to increase the number of places for women in education, but also to investigate gender mechanisms in science and support the national network of female professors. The efficacy of job evaluation schemes to address the gender pay gap has also been assessed.</p>	<p>While formulating targets is useful, most measures rest on the assumption that coercion is not useful. Coercive measures, such as the use of preferential treatment are not discussed and there seems no sanction in case of non-compliance.</p> <p>The main focus of policies on segregation in education is on women, while hardly any attention is given to the choices of men.</p> <p>The Working Group on Equal Pay (2006-2007) concluded that the job evaluation system itself is not a cause of gender pay differences, rather the latter ensue from incorrect application of the system.</p>	<ul style="list-style-type: none"> • Make use of de-segregation policies as a tool to tackle skill shortages. In this respect attention should be given to the occupational choices of both men and women. • Monitor the proper use of job evaluation systems in place.
NO	<p>The country has a long tradition of dealing with gender equality issues, including segregation. Among recent measures feature a commission on equal pay, the action plan for gender equality in day care services, programs sustaining women in science and women in management, and the well-known quota for women's representation in company boards. Also, on-going wage negotiations are targeting the reduction of the gender wage gap via a comparable worth strategy.</p>	<p>A wide spectre of policies has been implemented in Norway to address de-segregation, but understanding the systemic nature of persistent gender segregation received little attention.</p> <p>Mere concentration on occupations may be limited. Research evidence shows that within establishments gender differences are usually small, since the main gender difference result from men and women working in different types of companies.</p>	<ul style="list-style-type: none"> • Increase wages in female dominated occupations, especially when it is evident that job evaluation schemes do not lead to the closing of the gender wage gap. • Carry out systematic research on the recruitment and selection processes of firms, as well as on the consequences of educational choices for career patterns. Use both quantitative macro level evidence and qualitative studies.
PL	<p>The issue of gender segregation does not hold centre stage in academic, policy, or societal debates. At the same time related policies such as the recent diffusion of flexible forms of employment in the attempt to foster reconciliation of work and family may have an indirect impact on the phenomenon.</p>	<p>Despite the fact that flexible employment is ever more on demand by women, full-time open ended jobs remain most desirable for employers. Flexible working schedules are associated with lower pay and access to social protection.</p>	<ul style="list-style-type: none"> • Raise awareness of segregation and support research on the issue. • Facilitate a better matching between education and training. • Provide guidance to young women in education encouraging atypical choices. • Balance the responsibilities for care and unpaid labour between women and men and improve childcare services.
PT	<p>Desegregation policy mainly uses the fiscal leverage. Financial support is provided to balance the sex composition of occupations, and it is monitored on an annual basis.</p> <p>A Prize for Equality of Opportunities amounting to 10% of the cost of creating the enterprise is given to firms where at least 60% of the occupations do not accrue to the same sex. Incentives are also provided to</p>	<p>What is lacking is a holistic perspective on gender equality. Moreover, segregation policies suffer from discontinuities. For example, the efforts to balance the sex composition of occupations have been interrupted since 2002.</p> <p>Also, incentives for women to become self-employed can be problematic in a context of widespread informal and precarious labour.</p>	<ul style="list-style-type: none"> • Combat existing gender stereotypes. • Reduce long-term youth unemployment, since it primarily affects women. • Foster reconciliation and encourage men to share child care and elderly care • Follow an overall policy approach towards the “working life cycle”, increasing employment for people over 55, providing lifelong learning

	promote self-employment and female entrepreneurship. Reconciliation policies are also relevant, and there is an important public investment in care services (crèches, homes for the elder, etc.)	Investment in care services may reinforce sex segregation in the care sector but may also create the conditions for women to take up market work more frequently.	opportunities for elderly workers, and flexible pathways between work and retirement. <ul style="list-style-type: none"> • Ensure continuity to the monitoring of progress towards equality.
RO	Gender segregation is not a subject of policy debate, despite the fact that gender equality is becoming a matter of concern, and that this marks a change of perspective in comparison to the pre-transition period.		<ul style="list-style-type: none"> • Promote greater awareness by engendering the public agenda, not just only the political agenda. • Create an institutional framework and a monitoring system for the implementation of policies in support of women. • Foster reconciliation of work and private life.
SE	After decades of reports and policies, sex segregation in the labour market is still on the agenda and new measures are continuously introduced. The government has commissioned three major reports or investigations in the last ten years, respectively in 1998, 2003 and 2007 on different aspects of segregation. Key issue in the perception of the public or in the policy debate are women in decision making positions, female entrepreneurs, and women in science and technology. The Equal Opportunity Act regulates the practical implementation of gender equality and has been repeatedly amended. Policies have been implemented in all areas – from education and training to job evaluation, management of skill shortages and so on.		<ul style="list-style-type: none"> • Rectify the imbalance in the classification of occupations: male dominated occupations are much more detailed. • Explore possibilities to enhance competence and skill in caring occupations in order to attract both men and women. <p>In addition, and drawing from 2004 inquiry on segregation:</p> <ul style="list-style-type: none"> • Stimulate boy's and men's interest for the social sector in order to meet the skill shortage there and to further gender equality. • The national Agency for education should set up courses to stimulate interest in technology and science among boys and girls. Unemployed men having discontinued education should be allowed to take part in these courses.
SI	Segregation is discussed mainly in connection with the gender pay gap, and only recently (NRP 2006) it was mentioned as a policy issue. However, scholarships encouraging boys' and girls' to enter fields which are dominated by the opposite sex are an example of specific provisions. Additional measures that have bearing on segregation include well-developed child-care services whereby women can afford to be highly involved in the labour market.		<ul style="list-style-type: none"> • Develop indicators for monitoring equal opportunities in education. Provide guidance for girls and boys in school and out of school activities where the opposite sex is dominating. • Promote further education and professional training of teachers and counsellors employed in secondary schools, for they are the ones who can guide choices. • Sustain women in science. • Encourage men to share unpaid and care responsibilities at home.
SK	The problem of horizontal and vertical gender segregation is not among the issues frequently discussed by policy makers or in academia. Public awareness of the problem is also rather low.	Gender stereotypes are not being questioned. Even the education system remains very traditional and basically perpetuates old behavioural models. Policy monitoring is such that it does not ensure the effective	<ul style="list-style-type: none"> • Raise awareness of segregation in the population at large and among employers. Build up structures responsible for implementation of principles of gender equality. • Reinforce the capacity of

		implementation of policies in the labour market.	controlling structures in charge of monitoring development in the labour market.
UK	<p>The problems of occupational gender segregation have been recognised in the UK policy debates since the 1970s. Currently there is the so-called General Duty on Gender in the public sector: since 2007 all public authorities have a statutory duty to (a) have due regard to the need to eliminate unlawful discrimination and harassment, and (b) to promote equality of opportunity between men and women; the government's quantified targets ('Public Service Agreements'); and the government action plan developed in response to the recommendations of the Women and Work Commission.</p>	<p>There are many initiatives, but they lack coordination. Moreover few of them address the issue of changing the culture and system of work organisation within male-dominated areas. The reformed and extended vocational training system is reinforcing existing patterns of segregation. There is too much reliance on supply-side measures targeted at women's career choices, training opportunities and work-family reconciliation rather than measures to address undervaluation of female-dominated job areas and to improve job quality.</p>	<ul style="list-style-type: none"> • Accompany de-segregation in the labour market by de-segregation of the education and vocational training system. • Improve the recruitment, retention and advancement of women in male-dominated sectors. • Promote equal value and reduce gender inequalities in wage structures. • Promote continuity of women's employment careers. • Tackle vertical segregation, low pay in female-dominated areas, create more promotion ladders and ensure that these new pathways do not become monopolised by men.

B. Technical Appendix

Box B. 1. Measures of segregation

The Karmel and MacLachlan (1988) index (IP) is defined as

$$IP = \frac{1}{N} \sum_i \left| \left(1 - \frac{M}{N} \right) M_i - \frac{M}{N} F_i \right|, \quad (B.1.1)$$

where N is total employment, M and F stand for the number of men and women in employment, and the subscript i denotes the i_{th} occupation or sector. The index ranges from 0 in case of complete equality to twice the male share of employment multiplied by the female share ($2 \cdot M/N \cdot F/N$) in the case of complete dissimilarity. The absolute maximum for the index is 0.5 (50 if expressed in percentage), and it is reached when the female and the male shares are equal. Although the index has the advantage of taking direct account of the female share of employment, this may turn into a disadvantage when comparing values over time, since the level of segregation may increase solely because women's employment has increased.

The Index of Dissimilarity (ID), measures the sum of the absolute difference in the distribution of female and male employment across occupations or sectors. Like the IP index, it assumes that segregation implies a different distribution of women and men across occupations or sectors: the less equal the distribution, the higher the level of segregation. Using the same symbols as above, the ID is defined as

$$ID = \frac{1}{2} \sum_i \left| \frac{M_i}{M} - \frac{F_i}{F} \right|, \quad (B.1.2)$$

and varies between 0 and 1 (0 and 100 if expressed in percentage). The value of ID is sensitive to the number of employment categories (occupations or sectors) because it tends to increase with the detail of the classification adopted. However, this increase is non linear and tapers off after about 20 categories.¹ Although it is possible to standardize the ID with respect to the number of occupations, this is unnecessary for the present report, since at least 20 categories will be used and comparisons will be made employing the same classification for all countries and over time.

Hakim (1993) identified female-dominated, male-dominated and mixed occupations by taking the within-occupation share of women and adding or subtracting 15 decimal points from the mean share for all women in employment. Female-dominated occupations are those where the share of women exceeds their mean share in employment + 15%; conversely for male-dominated occupations. Mixed occupations are comprised in the ± 15 points interval around the mean. We are aware that, although the confidence interval of $\pm 15\%$ may serve as a rule of thumb for present-day European economies, it may need rescaling for countries where women's employment is much lower or higher than the European average. For the sake of transparency, however, we retain the ± 15 percentage points criterion in chapter 1, while we adopt a more flexible approach in the following chapters (see the Note to Table 5 for details).

¹ There is no exact relationship between the number of employment categories and the value of ID. Anker (1998) identifies the following empirical relationship that holds for the (large) set of countries included in his world-wide study of segregation: $0.061 \cdot \ln(235/X)$, where X is the number of categories actually used.

Box B. 1. The use of Gini and Somers'D to measure vertical segregation

The Gini index is very popular in the measurement of distributional inequality and lends itself naturally to the analysis of unequally distributed occupations or sectors (e.g. Silber 1989, Lampard 1994). Blackburn et al. (1994) defined it in a similar way to the above indexes as:

$$G = \sum_{i=2}^n \left[\sum_{t=1}^{i-1} F_t / F \sum_{t=1}^i M_t / M - \sum_{t=1}^i F_t / F \sum_{t=1}^{i-1} M_t / M \right] \quad (B.2.1)$$

where n is number of occupations, i denotes i_{th} occupation and t denotes an occupation included in the cumulative total. F_t and M_t - the number of women and men in occupation t , F_i and M_i - the number of women and men in occupation i , F and M - total number of women and men in the labour force ($\sum F_t$ and $\sum M_t$). On analogy with income inequality, the best way to interpret Gini is by relating it to the Lorenz curve (segregation curve) that is attained by mapping the cumulative proportion of the male labour force against the cumulative proportion of the female labour force by first ordering occupations along the declining ratio of female to male workers ($F_i / M_i \geq F_{i+1} / M_{i+1}$). In case of no segregation we would end up with the direct line, while if different from 0 the Gini coefficient measure the deviation of the segregation curve from the direct line.

Blackburn et al. (2001) proved that Gini coefficient can be expressed as the form of Somers' D. It is the maximum value of D for a 2xn table involving 2 genders and n occupations ordered from most female to most male. To show that they first rewrite formula (B.1.2) in the following way:

$$G = (1/FM) \sum_{i=2}^n \left[\sum_{t=1}^{i-1} F_t (\sum_{t=1}^{i-1} M_t + M_i) - (\sum_{t=1}^{i-1} F_t + F_i) \sum_{t=1}^{i-1} M_t \right] = (1/FM) \sum_{i=2}^n (M_i \sum_{t=1}^{i-1} F_t - F_i \sum_{t=1}^{i-1} M_t) \quad (B.2.2)$$

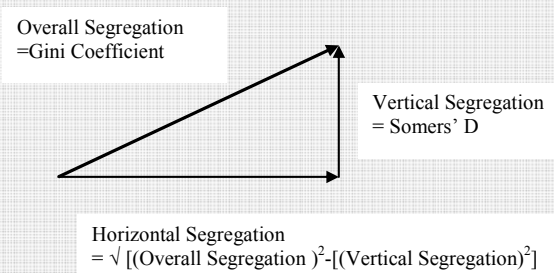
To calculate Somers'D we need to order pairs of men and women by the femaleness/maleness of their occupations, in declining proportions of women. Thus if a woman is in occupation i and a man is in occupation $i+j$ ($i \leq j \leq n-i$) the woman is in the occupation with the higher proportion of women and the man is in the male occupation. This pair is considered to be ordered 'consistently' with segregation. Similarly, if a man is in occupation i and a woman is in occupation $i+j$ they form an 'inconsistently' ordered pair. Note that pairs of men and women in the same occupation are ignored. Let P denote the number of all pairs 'consistently' ordered and Q - the number of 'inconsistent' pairs. In this case, P includes all pairs of a man and a woman where the occupation of the woman has a higher proportion of workers who are women than does the man's occupation; Q includes pairs where the reverse holds.

$$P = \sum_{i=2}^n \left\{ M_i \sum_{t=1}^{i-1} F_t \right\} \text{ and } Q = \sum_{i=2}^n \left\{ F_i \sum_{t=1}^{i-1} M_t \right\} \quad (B.2.3)$$

We now have that $D = \frac{P-Q}{FM}$ (B.2.4)

One can see that the expression obtained in formula (B.2.4) for Somers' D is identical to the one in formula (B.2.2) which stands for the Gini coefficient. The derivation, presented in full by Blackburn et al. (2001) served to show that Somers' D with occupations ordered along the vertical dimension provides the appropriate vertical measure corresponding to Gini Coefficient as the measure of overall segregation. Moreover the mathematical relationship of segregation components can be expressed as shown in the figure below.

Figure B1. The mathematical relationship of segregation components



Source: Blackburn et al. 2001: Fig. 1.

Box B. 2. The Decomposition of ID-index

The index of Dissimilarity of Duncan and Duncan is defined as

$$D_t = \left(\sum_i |u_{i,t} - f_{i,t}| \right) / 2 \quad (\text{B.3.1})$$

where

$$f_{i,t} = F_{i,t} / \sum_i F_{i,t}, \quad F_{i,t} = \text{number of women in occupation or sector } i, \text{ year } t \quad (\text{B.3.2})$$

$$u_{i,t} = U_{i,t} / \sum_i U_{i,t}, \quad U_{i,t} = \text{number of men in occupation or sector } i, \text{ year } t \quad (\text{B.3.3})$$

The difference in the value of the index between two dates $(D_1 - D_0)$ can be decomposed into a weight, a share, and a residual effect. D_t can also be written as

$$D_t = \left(\sum_i |\eta_{i,t} z_{i,t} - p_{i,t} \omega_{i,t}| \right) / 2 \quad (\text{B.3.4})$$

where

$p_{i,t} = F_{i,t} / \sum_i (U_{i,t} + F_{i,t})$ is the share of women in occupation or sector i , year t ;

$\eta_{i,t} = (1 - p_{i,t}) = U_{i,t} / (U_{i,t} + F_{i,t})$ is the share of men in occupation or sector i , year t ;

$z_{i,t} = (U_{i,t} + F_{i,t}) / \sum_i U_{i,t}$ is the weight of occupation or sector i , year t , in total male employment; and

$\omega_{i,t} = (U_{i,t} + F_{i,t}) / \sum_i F_{i,t}$ is the weight of occupation or sector i , year t , in total female employment.

If year 0 is taken as the standard, then

$$(D_1 - D_0) = W_{1,0} + P_{1,0} + R_{1,0} \quad (\text{B.3.5})$$

where

$W_{1,0} = \left(\sum_i |\eta_{i,0} z_{i,1} - p_{i,0} \omega_{i,1}| \right) / 2 - \left(\sum_i |\eta_{i,0} z_{i,0} - p_{i,0} \omega_{i,0}| \right) / 2$ is the weight effect

$P_{1,0} = \left(\sum_i |\eta_{i,1} z_{i,0} - p_{i,1} \omega_{i,0}| \right) / 2 - \left(\sum_i |\eta_{i,0} z_{i,0} - p_{i,0} \omega_{i,0}| \right) / 2$ is the share effect; and

$R_{1,0} = \left(\sum_i |\eta_{i,1} z_{i,1} - p_{i,1} \omega_{i,1}| \right) / 2 - \left(\sum_i |\eta_{i,0} z_{i,1} - p_{i,0} \omega_{i,1}| \right) / 2 +$
 $+ \left(\sum_i |\eta_{i,0} z_{i,0} - p_{i,0} \omega_{i,0}| \right) / 2 - \left(\sum_i |\eta_{i,1} z_{i,0} - p_{i,1} \omega_{i,0}| \right) / 2$

is the residual or interaction effect.

References

A. The national expert reports

- Barry, U. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Ireland. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Beleva, I. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Bulgaria. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Bettio, F. and Verashchagina, A. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Italy. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Braziene, R. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Lithuania. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Camilleri-Cassar, F. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Malta. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Ellingsæter, A.L. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Norway. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Emerek, R. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Denmark. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Fagan, C. (2008) Gender segregation in the labour market: root causes, implications and policy responses in the UK. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Fazekas, K. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Hungary. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Ferreira, V. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Portugal. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- González Gago, E. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Spain. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Kanjuo Mrčela, A. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Slovenia. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Karamessini, M. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Greece. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Křížková, A. (2008) Gender segregation in the labour market: root causes, implications and policy responses in the Czech Republic. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Leetmaa, R. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Estonia. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Maier, F. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Germany. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Mairhuber, I. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Austria. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.

- Meulders, D. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Belgium. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Mósesdóttir, L. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Iceland. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Nyberg, A. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Sweden. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Panayiotou, A. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Cyprus. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Papouschek, U. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Liechtenstein. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Piscová, M. (2008) Gender segregation in the labour market: root causes, implications and policy responses in The Slovakia. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Plantenga, J. and Remery, C. Gender segregation in the labour market: root causes, implications and policy responses in The Netherlands. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Plasman, R. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Luxembourg. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Plomien, A. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Poland. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Silvera, R. (2008) Gender segregation in the labour market: root causes, implications and policy responses in France. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Sutela, H. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Finland. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Trapenciere, I. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Latvia. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.
- Zamfir, E. (2008) Gender segregation in the labour market: root causes, implications and policy responses in Romania. External report commissioned by and presented to the European Commission Directorate-General for Employment, Social Affairs and Equal Opportunities, Unit G1 'Equality between women and men'.

B. Additional references

- Anker (1997) 'Theories of Occupational Segregation by Sex: An Overview', *International Labour Review*, 136 (3): 315-339.
- Anker (1998) 'Gender and Jobs. Sex Segregation of Occupations in the World', Geneva: ILO.
- Akerlof, G.A. and Kranton R.E. (2000) 'Economics and Identity', *Quarterly Journal of Economics*, 115 (3): 715-753.
- Amuedo-Dorantes, C. and De la Rica, S. (2006) 'The Role of Segregation and Pay Structure on the Gender Wage Gap: Evidence from Matched Employer-Employee Data for Spain', *B.E. Journals in Economic Analysis and Policy: Contributions to Economic Analysis and Policy*, 5 (1): 1-32.
- Bacik, I., Costello, C. and Drew, E. (2003) *Gender InJustice. Feminising the Legal Professions?* Dublin: Trinity College Dublin Law School.
- Barnett, W., Baron, J. and Stuart, T. (2000) 'Venues of Attainment: Occupational Demography and Organizational Careers in the California Civil Service', *American Journal of Sociology*, 106(1): 88-144.
- Barron, R.D. and Norris, J.M. (1976) 'Sexual divisions and the Dual Labor Market' in D.L. Barker and S.Allen (eds) *Dependence and Exploitation in Work and Marriage*, London: Longman, pp. 47-69.

- Bayard, K., Troske, R., Hellerstein, J. and Neumark, D. (2003) 'New Evidence on Sex Segregation and Sex Differences in Wages from Matched Employee-Employer Data', *Journal of Labor Economics*, 21 (4): 887–922.
- Becker, G. (1957) *The Economics of Discrimination*, Chicago: University of Chicago Press.
- Bettio, F. (1988) *The sexual division of labour: The Italian case*, Oxford; New York; Toronto and Melbourne: Oxford University Press, Clarendon Press.
- Bettio, F. (1990) 'Segregazione e discriminazione sul mercato del lavoro: letteratura straniera e italiana a confronto. Parte II: la letteratura straniera', *Economia & Lavoro*, 24(4) 27–47.
- Bettio, F. (1991) 'Segregazione e discriminazione sul mercato del lavoro: letteratura straniera e italiana a confronto. Parte II: la letteratura italiana', *Economia & Lavoro*, 25(1) 49–66.
- Bettio, F. (1999) 'Economisti nell'università Italiana: i numeri della carriera', in A. Carabelli, D. Parisi, A. Rosselli *Che genere di economista: una ricerca sulla professione di economista nell'università italiana*, Bologna: Il Mulino (Collana S.I.E.).
- Bettio, F. (2002) 'The Pros and Cons of Occupational Gender Segregation in Europe', *Canadian Public Policy*, 28, Supplement: S65–84.
- Bettio, F., Simonazzi, A. and P. Villa (2006) 'Change in Care Regimes and Female Migration', *Journal of European Social Policy*, 16 (3).
- Bettio (2008) 'Occupational segregation and gender wage disparities in developed economies: Should we still worry?' in F. Bettio and A. Verashchagina (eds) *Frontiers in the Economics of Gender*, Routledge Siena studies in political economy, Routledge: 267–285.
- Bettio, F. and Plantenga, J. (2008) 'Care Regimes and the European Employment Rate', in L. Costabile (ed.) *Institutions for Social Well Being. Alternative for Europe*, London: Palgrave Macmillan.
- Bettio F. and Solinas G. (2008) 'Which European Model for elderly care? Equity and efficiency in home based care in three European countries', *Economia e Lavoro*, no. 3 (forthcoming).
- Bielby D.D., Reskin B.F. (2005) 'A Sociological Perspective on Gender and Career Outcomes', *Journal of Economic Perspectives* 19(1): 71–86.
- Blackburn, R.M., Brooks, B. and Jarman, J. (2001) 'Occupational Stratification. The vertical dimension of Occupational Segregation', *Work, Employment & Society*, 15(3): 511–538.
- Blackburn, R. and Jarman, J. (2005) 'Gendered Occupations: Exploring the Relationship between Gender Segregation and Inequality', GeNet ESRC Gender Equality Network, University of Cambridge Working Paper no. 5.
- Blau, F.D. and Kahn, L.M. (2001) 'Understanding International Differences in the Gender Pay Gap', *Journal of Labor Economics*, University of Chicago Press, 21 (1): 106–144.
- Blau, F., Ferber, M. and Winkler, A.E. (2006) *The Economics of Women, Men and Work*, Upper Saddle River: Pearson.
- Booras, Stephanie and William M. Rodgers III. 2003. "How Does Gender Play a Role in the Earnings Gap? An Update." *Monthly Labor Review*. 126:3, pp. 9–15.
- Blackburn, R.M., Brooks, B. and Jarman, J. (2001) 'Occupational Stratification. The Vertical Dimension of Occupational Segregation', *Work, Employment and Society*, 15(3): 511–538.
- Bridges, W.P. (2003) 'Rethinking gender segregation and gender inequality: measures and meanings', *Demography*, 40(3): 543–568.
- Budig, M. J. 2002. "Male Advantage and the Gender Composition of Jobs: Who Rides the Glass Escalator?" *Social Problems*. 49:2, pp. 258–77.
- Burchell, B., Fagan, C., O'Brien, C. and Smith, M. (2007) *Gender and working conditions in the European Union*, European Foundation for the Improvement of Living and Working Conditions.
- Camilleri, F. (1997) *Women in the Labour Market: a Maltese perspective*, Mireva, Malta.
- Carabelli, A., Parisi, D. and A. Rosselli (1999) *Che genere di economista: una ricerca sulla professione di economista nell'università italiana*, Bologna: Il Mulino (Collana S.I.E.).
- Cedefop (2007) *Future skill needs in Europe. Medium-term forecast. Synthesis report*. Luxembourg: Office for Official Publications of the European Communities, 2008.
- Charles, M. and Grusky, D.B. (1995) 'Models for describing the underlying structure of sex segregation', *American Journal of Sociology*, 100: pp. 931–71.
- CNVSU (2007) *Ottavo Rapporto sullo Stato del Sistema Universitario. Rilevazione Nuclei 2007*, Ministero dell'Università e della Ricerca. Comitato nazionale per la valutazione del sistema universitario.
- Coate, S. and Loury, G. C. (1993) 'Will Affirmative Action Policies Eliminate Negative Stereotypes?', *American Economic Review*, 85 (5): 1220–1240.

- David, P. and G. Vicarelli (eds) (1994) *Donne nelle professioni degli uomini*, FrancoAngeli.
- De Groot-Van Leeuwen, L.E. (1997). De feminisering van de juridische beroepen. In: *Justitiële verkenningen*, 23, 9, pp. 103-116.
- De Groot-Van Leeuwen, L.E. et al. (1996). De aanloop tot de rechterlijk macht; verslag van een enquête onder RAIO's. In: *Trema*, 5a, pp. 107-124.
- Del Bono, E., Weber, A. and Winter-Ebmer, R. (2008) *Clash of Career and Family: Fertility Decisions after Job Displacement*, IZA DP No. 3272.
- Department of Justice, Equality and Law Reform. (2003) *Developing Sectoral Strategies to Address Gender Pay Gaps: A Comparative Analysis of Sectoral Wage Differentials in the European Union*. Dublin, DTZ Pidea Consulting.
- De Henau, J. (2006). "Gender role attitudes, work decisions and social policies in Europe – A series of empirical essays", doctoral thesis under the direction of Prof. D. Meulders (Université Libre de Bruxelles).
- Doeringer, P. and Piore, M. (1971) *Internal Labour Markets and Manpower Analysis*. Lexington, MA.: D.C. Heath and Co.
- Dolado, J.J., Felgueroso, F. and Jimeno, J.F. (2002) 'Recent Trends in Occupational Segregation by Gender: A Look across the Atlantic', in A. Argandoña and J. Gual (eds) *The social dimensions of employment: Institutional reforms in labour markets*, Cheltenham, U.K. and Northampton, MA.: Elgar; Williston, VT.: American International Distribution Corporation.
- Duncan, O.D. and Duncan, B. (1955) 'A Methodological Analysis of Segregation Indexes', *American Sociological Review*, 20 (2): 210–17.
- Elson, D. and Pearson, R. (1981) 'Nimble Fingers Make Cheap Workers: An Analysis of Women's Employment in Third World Export Manufacturing', *Feminist Review*, 2 (7): 87–107.
- EIE (2008) *Employment in Europe Report*, European Commission.
- Emerek, R., Figueiredo, H., González, M.P., Gonäs, L. and Rubery, J. (2002) 'Indicators on Gender Segregation' in J. Rubery, D. Fagan, D. Grimshaw, H. Figueiredo and M. Smith *Indicators on Gender Equality in the European Employment Strategy*, EGGE – EC's Expert Group on Gender and Employment, Manchester: University of Manchester.
- England, P. (1982) 'The Failure of Human Capital Theory to Explain Occupational Sex Segregation', *Journal of Human Resources*, 17 (3): 358–370.
- England, P. (2004) *Does Bad Pay Cause Occupations to Feminize, Does Feminization Reduce Pay, and How Can We Tell with Longitudinal Data?*, Dept. of Sociology, Stanford University: Stanford, mimeo.
- European Commission (2007) *Women and men in decision-making. Analysis of the situation and trends*.
- European Commission (2008) *Proposal for integrated employment guidelines 2008-2010*. [http://ec.europa.eu/employment_social/employment_strategy/guidelines_en.htm]
- European Foundation (2007) *Gender and working conditions in the European Union*.
- Eurostat (2008) *The life of women and men in Europe. A statistical portrait*.
- Fagan, C. (2003) *Working-time preferences and work-life balance in the EU member states: some policy considerations for enhancing the quality of life*. Dublin, European Foundation for the Improvement of Living and Working Conditions.
- FAS/ EGFSN Manpower Forecasting Studies (2007) *Occupational Employment Forecasts 2012*. Dublin: The Economic and Social Research Institute.
- Freeman, R. and R. Schettkat (2005) 'Marketization of Household Production and the EU-US Gap in Work', *Economic Policy*, 20(41): 5–39.
- Gilles, Ch. (2007) Réduire la segmentation du marché du travail selon le genre et accroître les taux d'emploi féminin: à court terme, est-ce compatible?, La note de veille, no.10. [<http://www.strategie.gouv.fr/IMG/pdf/NoteVeille72.pdf>]
- Gjerberg, E. (2002) Gender similarities in doctors' preferences – and gender differences in final specialisation. *Social Science and Medicine*, 54: 591-605.
- Goldin, C. (2002) *A Pollution Theory of Discrimination: Male and Female Differences in Occupations and Earnings*, National Bureau of Economic Research, NBER Working Paper no. 8985.
- Grimshaw, D. and Rubery, J. (2007) 'Undervaluing women's work', *European Work and Employment Research Centre*, University of Manchester, Working paper series, no. 53. Equal Opportunities Commission 2007.
- Grusky, D.B. and Charles, M. (1998) 'The Past Present, and Future of Sex Segregation Methodology', *Demography*, 35 (4): 497–504.

- Guiso, L., Monte, F., Sapienza, P. and Zingales, L. (2008) 'Diversity: Culture, Gender, and Math', Science, Education Forum, 30 May 2008: vol. 320. no. 5880, pp. 1164 – 1165.
- Hakim, C. (1993) 'Segregated and Integrated Occupations: A New Approach to Analysing Social Change', European Sociological Review, 9 (3): 289-314.
- Hartman, H.I. (1979) Capitalism, Patriarchy and Job Segregation by Sex, in Capitalist Patriarchy and the Case for Socialist Feminism, ed. Eisenstein, Z.R., Monthly Review Press.
- Hartman, H.I. and Reskin, B.F. (1986) Women's Work, Men's Work, Washington D.C.: National Academy Press.
- Heckman, J.J. (1979) Sample selection bias as a specification error. *Econometrica* 47(1), 153-62.
- Holt et al. (2006) Det kønsopdelte arbejdsmarked. En kvantitativ og kvalitativ belysning. Socialforskningsinstituttet. København.
- Honey, M. (1984) Creating Rosie and Riveter, The University of Massachusetts Press.
- Höskoleverket (2006) Forskarutbildning och forskarkarriär – betydelsen av kön och socialt ursprung. Stockholm: Höskoleverket.
- Humphries, J. (1977) Class Struggle and the Persistence of the Working Class Family, in Cambridge Journal of Economics, 1.
- Indecon (2002). Study of the Gender Pay Gap at Sectoral Level in Ireland. Dublin: Indecon.
- IREF-ACLI (2007) Il Welfare "Fatto in Casa". Indagine nazionale sui collaboratori domestici stranieri che lavorano a sostegno delle famiglie italiane, Rapporto di Ricerca. Roma – Giugno 2007.
- Kanter, R. M. (1977) Men and Women of the Corporation. New York: Basic Books.
- Karmel, T., MacLachlan, M. (1988) 'Occupational Sex Segregation – Increasing or Decreasing', *Economic Record* 64:187-195.
- Kozel, P. 2002. Enako plačilo za delo enake vrednosti – primerjava tipično moškega in tipično ženskega poklica. Ljubljana: FDV.
- Lampard, R. (1994) 'Comment On Blackburn, Jarman and Siltanen: Marginal Matching and the Gini Coefficient', *Work, Employment & Society*, 8(3): 407–11.
- Lind, I. (2006) Kurzexpertise zum Themenfeld Frauen in Wissenschaft und Forschung, im Auftrag der Robert Bosch Stiftung, Center of Excellence Women and Science, Bonn.
- Maccoby, E., Jacklin, C. (1974) The Psychology of Sex Differences, Stanford University Press.
- Masters, S.H. (1975) Black-White Income Differences: Empirical Studies and Policy Implications, Academic Press.
- May (2008) 'Gender and the political economy of knowledge' in F. Bettio and A. Verashchagina (eds) *Frontiers in the Economics of Gender*, Routledge Siena studies in political economy, Routledge: 267-285.
- Miller L, Neathey F, Pollard E, and Hill D (2004) 'Occupational Segregation, Gender Gaps and Skill Gaps', Working Paper 15, Equal Opportunities Commission (UK), May
- Milkman, R. (1986) 'La storia delle donne e il caso Sear' in *Rivista di Storia Contemporanea* 15.
- Mincer J. (1974) Schooling, Experience and Earnings, Columbia University Press, New York.
- Morokvasic, M. (1996) 'Entre l'est et l'ouest, des migrations pendulaires' in M. Morokvasic and H. Rudolph (eds) *Migrants. Les nouvelles mobilités en Europe*. Paris: L'Harmattan: 119-157.
- Petersen, T. and Saporta, I. (2004) 'The Opportunity Structure for Discrimination', *American Journal of Sociology*, 109(4): 852–901.
- Phelps, E.S. (1972) 'The Statistical Theory of Racism and Sexism', *American Economic Review*, 62 (4): 659–661.
- Pissarides, C., Garibaldi, P., Olivetti, C., Petrongolo, B. and Wasmer, E. (2003) Women in the Labor Force: How Well is Europe Doing, Report, Annual European Conference of the Fondazione Rudolfo De Benedetti, Milano: Fondazione Rudolfo De Benedetti.
- Plantenga, J. and Remery, C. (2005) Reconciliation of work and private life. A comparative review of thirty European countries, European Commission.
- Plantenga, J. and Remery, C. (2006) The gender pay gap — Origins and policy responses. A comparative review of 30 European countries, European Commission.
- Rees, T. (2001) 'Education and Vocational Training of Women', Report for the Regional Forum "Economy and Sustainable Development: Participation of Women." Bruxelles: European Commission.
- Reich, M. (1981) Racial Inequality, Princeton University Press.
- Reskin, B.F. and Bielby, D.D. (2005) 'A Sociological Perspective on Gender and Career Outcomes', *Journal of Economic Perspectives*, 19 (1): 71–86.

- Reskin, B. F. and McBrier, D.B. (2000) 'Why Not Ascription? Organizations' Employment of Male and Female Managers' *American Sociological Review*, 65(2): 210–33.
- Reskin, B.F. and P. Roos (eds) (1990) *Job Queues, Gender Queues: Explaining Women's Inroads into Male Occupations*. Philadelphia: Temple University Press.
- Rubery, J., Smith, M., Fagan, C. and Grimshaw, D. (1998) *Women and European Employment*. London: Routledge
- Petrongolo, B. (2004) 'Gender Segregation in Employment Contracts', CEP Discussion Paper No 637.
- Rosen, S. (1986) 'The Theory of Equalizing Differences' in O. Ashenfelter and R. Layard (eds) *Handbook of Labor Economics*, Amsterdam, Oxford and Tokyo: North-Holland; New York: Elsevier Science.
- Rubery, J. (1978) 'Structured Labour Markets, Worker Organisation and Low Pay', *Cambridge Journal of Economics*, 2 (1): 17–36.
- Rubery, J. and Fagan, C. (1993) 'Occupational Segregation of Women and Men in the European Community'. *Social Europe: Supplement 3/93* Luxembourg: Office for Official Publications of the European Communities.
- Silber (1989) "On the Measurement of Employment Segregation", *Economics letters*, 30, 237–43.
- Solberg, S. (2004) *Menn i barnehagen: En sosiologisk studie av hvordan mannlige førskolelærere konstruerer sin arbeidsrolle*. Cand. polit thesis. Bergen: University of Bergen.
- Stichting de Beauvoir (2006). *Monitor Vrouwelijke hoogleraren 2006*.
- Summers, L. H. (2005). "Remarks at NBER Conference on Diversifying the Science & Engineering Workforce." Harvard University Web site, Office of the President, January 14 (visit site, accessed May 28, 2008).
- Valentova, M., Krizova, I. Katrnak, T., (2007) 'Occupational Gender Segregation in the light of the Segregation in Education: A Cross-National Comparison', IRISS Working Paper 2007-04.
- Vicarelli, G. and M. Bronzini (2008) 'Il ruolo delle donne nella medicina generale', *Economia e Lavoro*, 42 (2).
- Watts, M. (1998) 'Occupational Gender Segregation: Modelling', *Demography*, 35 (4): 489–96.
- West, J. (ed.) (1982) *Work, Women and the Labour Market*, Routledge and Kegan Paul.
- Wissenschaftsrat (2007), *Empfehlungen zur Chancengleichheit von Wissenschaftlerinnen und Wissenschaftlern*, Berlin Juli 2007.