# Do family policies and labour market institutions hinder women from reaching the top?

*A multilevel analysis of the institutional drivers of the gender gap in top positions*

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## Abstract

This thesis investigates to what extent highly educated women's underrepresentation in managerial and senior professional positions in European economies varies. Secondly, it examines how family policies impact on this gender gap in top positions. In a last step, this thesis investigates what else – if not family policies – can explain why women are not only underrepresented in top positions, but why this gap is wider in some countries than in others. Following a multilevel approach, context-level data stems from various sources such as the OECD, Multilinks and Eurostat and is from around the year 2010. Individual-level data such as occupational positions stems from the European Working Conditions Survey (EWCS) 2010. Depending on data availability, models include between 22 and 31 European countries.

Using two definitions for top positions (managerial; managerial and senior professional), findings suggest highly educated women face an even greater gender gap in top positions than lesser educated women.

Secondly, the thesis partly supports the hypothesis following the welfare state paradox theory that family policies widen the gender gap in so far as the same family policies that help women enter the labour market, hinder women from reaching top positions. For example, generous childcare seems to actually widen the gender gap in top positions. Informal childcare and financial support however reduce the gap.

Thirdly, following the question as to what else could explain the gender gap, this thesis finds limited evidence for the impact of labour market institutions such as unions on the gender gap in top positions. The models however do suggest that in countries with strong Employment Protection Legislation (EPL) the gender gap for the highly educated is smaller.

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## Acknowledgements

As for many of my PhD fellows, the past years of my life as a PhD student have felt like a rollercoaster ride. I remember the happiness and gratitude after having been awarded with my ticket to board the train – in this case a PhD scholarship from the University of Kent and the School for Social Policy, Sociology and Social Research for which I am incredibly thankful. And I cannot believe the journey has now come to an end.

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## Chapter 1: Introduction

*"The growing body of research on this issue has uniformly found that women are economically disadvantaged in all countries. Nevertheless, the size of the disadvantage varies considerably across national labor markets."* (Mandel and Semyonov, 2005, p.949)

In the past decades, women in large numbers and from various educational and socioeconomic backgrounds have joined the labour markets of developed economies. Despite this trend, women are still economically disadvantaged in terms of wage structures, occupational segregation and hours worked as highlighted, for example, by Mandel and Semyonov (2005, see quote above) and described by the European Commission's report from 2014 on equality between women and men 2014 (European Commission, 2015). According to this report, 75 percent of men between the ages of 25 and 54 years are employed in the labour market on average in the EU. However, only 63.5 percent of women are participating in the formal labour market. What is more, employed women are still four times more likely to be working part-time than employed men. At the same time, more and more families depend on women's work—with 61 percent of mothers being breadwinners or co-breadwinners (European Commission, 2015). Salaries do not reflect this as women get paid only 84 cents on average in the EU for every 1 Euro a man earns. Even in the same occupation and with the same education level, women tend to be paid less than their male counterparts.

In addition to the gender pay gap, women also face discrimination in terms of their position in the labour market as they are underrepresented in influential and powerful positions. Only 20 percent of members on boards of large companies in 2014 were women (European Commission, 2015). The underrepresentation of women in these top positions such as managerial and senior professional occupations has long been described as the "key issue from a policy perspective" (Hakim, 1992, p.132). This is because gendered hierarchies seem to crucially affect the gender pay gap (Hakim, 1992), and are therefore responsible for gendered differences in economic independence and power between genders. However, while women's labour market participation rates have been the focus of a large body of

literature—as briefly outlined in the following section—women's representation in top positions has not received the same attention in academic literature or data and methods applied in the existing research are limited. Charles (1992), for example, investigates occupational segregation—both vertical and horizontal—and finds that in 1985 women were underrepresented in professional and production jobs but overrepresented in clerical, sales and service jobs in 25 developed economies. However, Charles (1992) does not examine the impact of policies and only includes a limited range of institutional factors such as the presence or absence of corporatism. Therefore, her study remains rather descriptive by focusing on labour market factors only and also by putting more emphasis on the dependent variable rather than causal factors.

Taking this gap in the literature into account, this thesis contributes to the discussion of gender labour market inequalities by examining cross-national variation in women's underrepresentation in top positions. Thus, this thesis aims to contribute to the existing body of literature both by looking at an under-researched dimension of inequalities and by applying different methods to investigate the matter. The contributions made by this thesis are as follows:

Firstly, to the author's knowledge, all studies on the gender gap in top positions apply the international definitions of occupations[1] in a rather limited way by following its major groups without examining the specific occupations that are aggregated by these major groups. However, as with all aggregate data there are assumptions and simplifications made that are potentially problematic. For example, there is no hierarchical distinction made amongst educational professional occupations despite the fact that different levels and types of qualifications are required to obtain these positions. As this thesis is interested in hierarchies, it develops a new definition of "top positions" that aims to overcome these

[1] The majority of studies uses the ILO International Standard Classification of Occupations. The most recent ISCO-08 version distinguishes at the most aggregated level between: Managers; Professionals; Technicians and Associate Professionals; Clerical Support Workers; Services and Sales Workers; Skilled Agricultural, Forestry and Fishery Workers; Craft and Related Trades Workers; Plant and Machine Operators and Assemblers; Elementary Occupations; Armed Forces Occupations.

limitations. What is more, by following Charles' (1992) and other scholars' approach of applying individual-level data instead of aggregate macro-level data such as "women's overall share in managerial positions" this study will measure at the same time the direct effect of gender on job hierarchies.

Secondly, a more holistic study is needed on the drivers of the gender gap in top positions. This is because even though scholars find an explanation for women being underrepresented in higher position in the occupational hierarchy, we cannot fully explain why the extent of these gendered hierarchies varies substantially across countries. While the causes for cross-national differences of the gender gap in top positions are highly controversial, patterns explaining differences in women's employment or part-time rates have been identified by a large body of literature (see Chapter 2). Studies here largely focus on the role of the welfare state in addressing inequalities (i.e. the role of the labour market and its actors and the role of the family itself). Scholars such as Gornick *et al.* (1997), for example, argue that women are more likely to work in countries with progressive family policies. Also, Esping-Andersen (1999) argues that women's employment rates are driven by family policies and institutions.

However, Mandel and Semyonov (2006) question the positive interaction between progressive family policies and gender inequalities and claim that policies can actually worsen one dimension of gender inequalities, while improving another one. This claim has been examined by a limited number of studies (eg. Clarke, 2015, Misra *et al.*, 2012) that focus on inequalities such as the gender pay gap, mothers' employment and women's underrepresentation in managerial positions. So, why do we need another study on the impact of family policies on women in top positions? This is because previous scholarly work uses a narrow definition of managerial positions and ignores senior professional positions that are likely to be affected by family policies as well. What is more, all studies mentioned use aggregate data and thus do not take into account composition effects—namely what happens when we control for other important factors, at the individual and company levels, other than gender. Thirdly, studies (such as Mandel and Semyonov, 2006; Clarke, 2015) look

at a small range of family policies only and often summarize policies in indices, which might cover or exaggerate associations. This thesis aims to overcome these limitations.

The mixed results of previous studies lead to another question: What else other than family policies lead to cross-national variation of the gender gap in managerial and senior professional positions? Scholars such as Estevez-Abe (2005, 2006, 2007) and Dieckhoff *et al.* (2015) discuss the effects of labour market institutions such as union density or employment protection legislation on gender inequalities. Studies here either focus on a limited number of labour market institutions or look at women's employment rates, the gender pay gap only or use aggregate data. Thus, this thesis aims to combine the findings of previous studies and also applies a new approach towards defining managerial and senior professional occupations. Additionally, in contrast to previous studies recent data is applied, especially since much scholarly work including national skill profiles still uses data from the 1980s and 1990s. It needs to be noted here, that this thesis treats all women as potential mothers. This is because of statistical discrimination and the motherhood penalty. Statistical discrimination (Anker, 1997) is based on the assumptions that only due to the possibility of motherhood or care-giving women show a greater risk for career interruptions, which will affect their skills, productivity and experience. For the purpose of this thesis, all women are assumed to be affected by family policies as to employers it does not necessarily matter whether or not women, in the end, make use of family policies or remain without family responsibilities.

## 1.1 Family policies and labour market institutions – drivers of labour market inequalities?

Before summarising the main theoretical assumptions on how family policies affect labour market inequalities, this section highlights the need to include context-level factors into the analysis as individual-level factors fail in explaining the cross-national variation of occupational segregation, and more specifically, the gap in top positions. In other words, this thesis argues that we need to look beyond individual level variables to explain why women in

some countries are even less likely to reach top positions. Those variables at the same time help to explain why on average women are discriminated against across all countries.

Factors at the family and household level have, for example, been described as the main drivers for gendered differences in the occurrence of part-time employment. Since women still do most of the domestic work including childrearing, they tend to choose jobs with reduced hours in order to combine domestic and formal labour-market work (Blossfeld, 1994; Moen, 1985; Stier and Lewin-Epstein, 2001). There have been two main approaches to explain this phenomenon at the household level: theories focusing on rational choice making such as the Social Exchange Theory and frameworks including the cultural and normative dimension (e.g. Pfau-Effinger, 1998). Social Exchange Theory is based on the assumption that spouses exchange resources in a rational way. This means that the spouse with the least economic resources also has less influence on decision-making and its outcomes, thus is consequently more dependent on the other spouse. Other scholars such as Pfau-Effinger (1998) however argue that the traditional division of labour between the spouses is a consequence of "interrelations of culture, structure and action" (Pfau-Effinger, 1998, p. 150).

Moving beyond these household-level factors, scholars such as Esping-Andersen (1999), Lewis (1992), Sainsbury (1996), McLaughlin and Glendinning (1994) look at the impact of family policies on gender labour market inequalities. Key focus here is how public policies such as family policies affect the level of women's independence from the family, and thus, the extent to which women are able to take part in the labour market. In other words, how does the welfare state intervene in order to help individuals to combine care responsibilities with formal employment? However, studies show mixed results and some scholars even argue that family policies can contribute to a worsening of gender inequalities.

Mandel and Semyonov (2005, p. 953) describe the paradox in welfare regime literature and argue that protective family policies in developed welfare regimes have led to an increase of the pay gap whereas generous welfare states with developed family policies

reduce inequalities in terms of reducing gender gaps in employment rates. The question remains why Scandinavian countries with their generous welfare states and gender-specific policies still show comparably high levels of occupational gender segregation (Estevez-Abe, 2005, p. 153). Previous studies examining family policies and gender labour market inequalities such as by Mandel and Semyonov (2002), Clarke (2015) and Misra *et al.* (2012) do not help solve the puzzle as they focus on a select few family policies only or apply indices, and thus, cannot explain the direct connection between a wide range of policies and gender labour market outcomes. Additionally, they mainly look at employment rates or the gender pay gap and thus ignore gendered hierarchies in the labour market. In the majority of studies dependent variables are measured at the macro-level and are aggregated, which risks composition effects. In other words, statistical associations might be due to the different composition of individual level factors (such as gender, age, work experience) of a sample, and therefore, these factors need to be controlled for. And even if individual-level data is used, the samples are large and not tailored to the research question. This increases the risk of large sample fallacy because of the large sample groups. As discussed above, the author argues that therefore approaches need to be included to explain women's employment outcomes.

The current debate on gender labour market inequalities has neglected the potential role of labour market institutions in shaping labour market inequalities. Few scholars (e.g., Estevez-Abe, 2005; England, 2005; Dieckhoff *et al.*, 2015) have linked labour market institutions to women's labour market patterns. There are mainly two directions the literature is taking: One—represented by scholars such as Dieckhoff *et al.* (2015) and Schäfer *et al.* (2012) and others—focuses on the role of capital versus labour. The assumption here is that unions and their collective bargaining power crucially shape labour market outcomes by representing workers' interest unions (see Blanchflower, 1996; Bertola, Blau and Kahn, 2007; Kahn, 2007; Schwander and Hausermann, 2013; Emmenegger *et al.*, 2012). This body of literature follows Korpi's (1974) Power Resource Theory (PRT).

A second body of literature refers back to Human Capital Theory (Becker, 1964) and the Varieties of Capitalism (VoC) (Hall and Soskice, 2001). This approach is based on the VoC assumption of "complementarities" between institutions and "system coordination" (Coates, 2005). Complementarities meaning that labour relations and corporate governance, labour relations and the national training system, corporate governance and inter-firm relations are developed in a way that complement each other (Hancké *et al.*, 2007: p.5). These institutions develop their own set of Comparative Institutional Advantages. Depending on how firms engage in their different relationships, they are labelled Liberal Market Economies (LME) or Coordinated Market Economy (CME). In contrast to the PRT, the VoC examines employers as protagonists of the specific developments in the institutional setting of political economies. In other words, employers have facilitated certain institutions to develop to allow for the development of certain skill settings, which allows better competition in the market. Taking the ideas of the Human Capital Theory even further, scholars such as Estevez-Abe (2005, 2008) argue that there is an association between women's career/employment and comparative institutional advantages. For example, Estevez-Abe for examines not only different levels of skills within the labour market, but also types of skills and explores their impact on gender segregation (see Estevez-Abe, 2005; Estevez-Abe, 2007; Estevez-Abe, Iversen, and Hall and Soskice, 2001).

All in all, it is clear that scholars have investigated the impact of individual-level factors and macro-level variables such as family policies and labour market institutions on gender labour market inequalities. Findings however remain inconsistent and the drivers for cross-national variation of gender inequalities are unclear. What is more, women's chances to reach top positions have rarely been associated with family policies and institutions.

## 1.2 Aims and objectives of this thesis

Based on the literature just presented, the overall research focus of this thesis is to examine family policies and labour market institutions and their impact on cross-national

variations of the gender gap in top positions. In order to do so, this thesis aims to contribute to the debate outlined above in five ways. As a **first contribution,** the thesis contributes to the literature by looking at previous measurements of "top positions" and defining these in a more distinct way. Examining vertical segregation and by providing a new way of measuring vertical segregation, this thesis understands top positions as managerial positions and as senior professional and managerial positions. The reason to focus exclusively on gendered hierarchies is that we have yet to understand not only why women are underrepresented in top positions, but more importantly why the extent of the gender gap varies cross-nationally.

Variation in labour market participation rates on the other hand can be best explained by welfare regime theory and the differences in family policy levels across countries. Working hours, or part-time rates have an ambiguous role for women (see Stier and Lewin-Epstein, 2001) and therefore do not clearly capture the extent of discrimination. This is because part-time and flexible working hours can, on the one hand, serve as a useful tool to make the labour market more flexible and enable workers to combine work and family. On the other hand, it is women that are pressured to choose those reduced hours and therefore have to deal with potential disadvantages in terms of payment and career chances. This is problematic as part-time jobs tend to be lower paid than full-time jobs and have a lower status (Kalleberg, 2000).

Another dimension that could be examined is the emergence of female- and male-dominated occupations. However, for comparative purposes this indicator is not suitable as first of all measurements focus too much on aggregate macro-level data and secondly horizontal segregation and namely the gender-related choices for occupations are also due to cultural factors that we cannot fully take into account. Lastly, the author picked vertical segregation or women's access to top positions as the dependent variable. Therefore, this thesis does not look at the gender pay gap as the dependent variable since the gender pay gap is not a direct outcome, but rather highly connected with both the gender gap in managerial positions and the emergence of female- and male dominated occupations (Hakim, 1992).

Vertical segregation on the other hand though shows to be the most comparable and meaningful dimension to concentrate on, as it is the most detrimental variable influencing the gender pay gap and is measurable at the individual level. Also it is an area that has not been explained through welfare state family policies. Mandel and Semyonov (2005) have pointed out that progressive welfare state policies even seem to harden the glass ceiling women face.

As a **second contribution**, this thesis follows Mandel and Shalev's (2009) claim that we need to take class and education into account if we want to understand how labour market institutions affect female labour market outcomes. Korpi *et al.* (2013) argue similarly that in order to understand how family policies affect gender inequalities, we need to distinguish between the highly educated and the general workforce. However, because the focus of this thesis is on women's underrepresentation in top positions, there will be no comparison between highly educated individuals and the general workforce as the group of female and male managers and professionals in all included countries is largely highly educated anyway. Therefore, conclusions on the few individuals reaching top positions without tertiary educations are too weak to be analysed. However, it is still vital to exclude the general workforce from the analysis as what might affect the majority of the female workforce might have a different or no impact on highly educated women. We can see this when looking at women's employment rates. The share of highly educated women in the labour market however has not changed dramatically over time, but the employment patterns of the overall female population have changed. Even just based on these descriptive observations, we can see that educational levels need to be taken into account, which is why this thesis narrows down the sample to highly educated women only. By doing so, the thesis aims to avoid large sample size fallacy, as statistical significance is more likely to be found if sample sizes are large (Lantz, 2013).

The **third contribution** is the use of individual-level data. Researchers such as Clark (2015) have mainly focused on aggregated macro-level data when exploring the impact of

labour market institutions and family policies on women's employment outcomes—e.g. occupational segregation. Aggregated data though fails to take population composition into account—e.g. differences in women's education levels across countries, and also risks ecological fallacies. Ecological fallacy, in this case, means that we assume that findings from an aggregate level apply to individuals belonging to this aggregate group. In other words, by belonging to a group, an individual is assumed to be affected by factors like all other individuals in the group. However, this might not be the case and aggregate data can mask or exaggerate effects. In order to avoid this, we need a multi-level approach based on individual-level data. Here the author focuses on an individual's likelihood to reach top positions and examines how the gender of the person influences this likelihood. Using individual-level data also allows the author to shape the definition of top positions more thoroughly taking into account the arguments made by previous scholars. Thus, we can not only include both the general definition of managerial positions, but also highly professional individuals that are especially affected by the Human Capital arguments made by Estevez-Abe (2005, 2007) *et al.* (2001).

**Fourthly,** the author identifies a limitation in the literature on family policies and gender inequalities, namely the tendency of scholars to use aggregate indices and family policy regime typologies as independent explanatory variables. Korpi *et al.* (2013) construct a new welfare regime typology, while Mandel and Semyonov (2006) establish a welfare state intervention index. However, because we do not fully know how different family policies affect highly educated women and the gender gap in managerial positions in different ways, we cannot rely on composed indices that might not allow us to understand which policy exactly it is that is particularly beneficial or detrimental for women's careers as indices mask effects. For example, the welfare state intervention index includes various policies, which can have a conflicting effect on the dependent variable. Thus, this thesis examines the impact of single-family policies on women's access to top positions relative to men's, and therefore, does not assume that countries follow typologies neatly or assume that policies will have uniform effects. This contribution also serves as a critique on the typology approaches that do not seem to take into account the heterogeneity of the workforce and policies.

**Fifthly,** this thesis contributes to the existing literature on vertical segregation by drawing on scholarly work that looks at the impact of labour market institutions on the gender gap. Here, only few studies are available that link labour market institutions with this specific dimension of gender inequalities (see for example Schäfer *et al.*, 2012). Despite their contributions, these studies show the same limitations as the above-mentioned studies on family policies and gender inequalities as they either follow a narrow definition of vertical segregation or capture the dependent variable using aggregate level data. What is more, to the author's knowledge there is no study available that combines the two separate arguments— labour market institutions as a result of power conflicts versus institutions as a tool to retain workers and protect skill investments as a comparative advantage—and the implications of these on vertical segregation. Here, the thesis makes another contribution in that it uses updated data on skill profiles. So far, all scholarly work that uses national skill profiles based on the definition from Iversen and Soskice (2001) has applied data from the 1980s to 1999, which by now is outdated. For the purpose of this thesis, the author has collected the variables used for more recent years and thus the thesis is taking into account changes in the vocational training and education system that can be applied to most recent data.

Consequently, this thesis aims to answer the following research questions:

**Research Question 1: Are women underrepresented in top positions and to what extent does women's likelihood to be employed in a top position relative to men's vary across countries?**

**Research question 2: How do family policies at a national level affect women's likelihood to achieve top positions at the individual level relative to men's?**

**Research Question 3: What else, other than family policies affect women's likelihood to achieve top positions at the individual level relative to men's?**

### 1.3 General approach and research strategy

From a methodological perspective, this thesis aims to investigate the impact of family policies and labour market institutions on the gender gap in top positions. Here, top positions are defined as managerial and highly professional positions measured at the individual-level, which allows us to control for other individual-level and job characteristics. Independent variables are measured at the macro-level by using both summative indices and single variables for family policies and labour market institutions. The method of analysis is multilevel modelling random slopes models (MLM) as this thesis investigates whether context and national policies matter when examining variation between individuals in reaching top positions (see Hox, 2002).

As mentioned above, three main questions are examined: the cross-national variation of women's share in top positions relative to men's—in other words, the gender gap in top positions; the association between family policies and women in top positions; and thirdly, the relationship between labour market institutions and women in managerial positions. The year and sample of the analysis are European countries in the year 2010. Thus, the overall research strategy is to analyse the quantitative relationship between national level variables and individual labour market position using multilevel analysis (see Hox, 2002). Here, 15 variables for family policies are included and 8 variables measuring labour market

institutions—measuring both single policy area and composite indices—serve as independent variables.

## 1.4 Structure of the thesis

Following the structure of this introduction, the second Chapter of this thesis aims to firstly illustrate cross-national variation in gender labour market inequalities. By doing so, **Chapter 2** provides the justification for the selection of the sample being tertiary individuals and for the selection of the dependent variable. Data presented focuses largely on most recent data from European countries and includes statistics on employment rates, part-time rates, the pay gap, the emergence of female- and male dominated occupations and lastly the gender gap in top positions. The Chapter starts introducing data on employment rates and the occurrence of part-time employment and explores reasons for cross-national variations of both. Here, as this thesis is a comparative piece of research and investigates not gender inequalities per se, but rather differences between countries, literature focusing on country-level differences, namely family policies, and their impact on inequalities is presented. The first conclusion of this Chapter is that whilst these policies help us understand variation on employment rates and to some extent part-time employment, they do not explain variation of the gender pay gap, gendered hierarchies or the emergence of female- and male-dominated occupations. The Chapter here discusses these three outcome variables in detail highlighting the importance of vertical segregation. It then introduces the idea of the welfare state paradox (Mandel and Semyonov, 2005) that argues that the same policies that improve one dimension of gender inequalities seem to increase occupational segregation. Concluding with a critical discussion of this paradox, the Chapter highlights the need to address methodological shortcomings of research on family policies and occupational segregation, specifically vertical segregation. It also raises the question that based on the conflicting theoretical and empirical evidence for or against the welfare state paradox, what else, other than family policies, drive cross-national variation in vertical segregation.

**Chapter 3** picks up this question and discusses another body of literature that identifies labour market institutions as drivers for cross-national variation in the gender gap. Here, the literature review distinguishes between a conflict approach following Power Resource Theory (Korpi, 1976) and theories following a gendered version of the Varieties of Capitalism (Hall and Soskice, 2001; Estevez-Abe, 2005, 2007; Estevez-Abe *et al.* 2001). The key argument here is that labour market institutions such as unions and collective bargaining help workers to combine their interests and exert pressure on governments to introduce policies that help them reconcile work and family. However, due to the gendered nature of union representation (Schwander and Häusermann, 2010), the effect of strong unions on gender inequalities is questionable. Institutions such as employment protection legislation or skill profiles, on the other hand, are suspected to increase gender inequalities as they lead to more discrimination against women from employers (Estevez-Abe, 2005, 2006). This is because investments into specific skills are riskier for women who are more likely to interrupt their careers for family responsibilities and secondly, employment protection legislation makes it harder for employers to lay off workers, which again, makes them more reluctant to hire women. However, the Chapter also highlights that scholarly work following these assumptions has limitations which need to be addressed.

**Chapter 4** discusses the methodological approach and research strategy of this thesis. It discusses how both the welfare state paradox and the impact of labour market institutions on the gender gap in top positions can be explored. As argued before, the key contribution is to include individual-level data in the analysis. Data on policies and labour market institutions is available at the country level. Following previous research, but also for methodological reasons, datasets on European countries are used for the analysis. For individual-level data, the European Working Conditions Survey is used. The context of the dependent variable is explained in Chapter 2, but clearly defined in Chapter 4. For family policies and labour market institutions a wide range of databases are used and also introduced in Chapter 4. Because the data structure is therefore hierarchical with policies and labour market institutions at the country level and occupational data on the individual-level, the author, therefore, suggests multilevel modelling. The exact research strategy is outlined in Chapter 4.

**Chapter 5** discusses the dependent variable aiming to show how the definition used in this thesis varies from macro-level definitions of the gender gap in top positions. The main contribution of this Chapter is to show that indeed, women's chances to reach top positions relative to men's vary significantly across countries and that a significant part of this variation cannot be explained by individual-level factors. It also contributes to the literature in that it shows how highly educated women are even more disadvantaged than the general female workforce. Here, descriptive statistics are provided that aim to contribute to the existing body of literature by highlighting the need for individual-level data analysis, but also for multilevel modelling. In this Chapter, we also see that controlling for individual-level and job characteristics delivers different results and findings on the gender gap in managerial positions than data presented and used by other scholars. To summarize, Chapter 5 addresses the research hypotheses claiming that highly educated women are less likely than male colleagues to reach top positions even after controlling for a number of individual and job characteristics. There is cross-national variation in women's relative likelihood of reaching top positions, which can only be explained by context factors. Thirdly, the definition of "top positions" crucially shapes the results and thus supports the idea that aggregate-level data is not sufficient.

**Chapter 6** then follows with an analysis of the impact family policies and policy typologies have on women's access to top positions relative to men's. The main findings of this Chapter are that there is limited evidence for the welfare state paradox. From 18 different indicators for family policies that are included in the random slope models—ranging from leave policies to childcare and data on expenditure—only very few are statistically significant. Only part-time childcare enrolment and the rate of children enrolled in no formal childcare at all seem to affect the gender gap in top positions. Thus, whilst for highly educated women family policies do not seem to hinder them from reaching top positions, they also do not help. These findings are presented by a thorough discussion of the descriptive statistics, which is then taken further by analysing how the observations meet the hypotheses made in the literature review. Consequently, the Chapter contributes to the debate on the impact of family policies on the gender gap by examining the impact of numerous policies on highly educated women's access to top positions.

**Chapter 7** aims to make similar contributions from a methodological perspective by addressing the impact of labour market institutions on the gender gap in top positions. Here, in contrast to previous studies both variables measuring union strength and variables measuring social protection and skill profiles are combined in a multilevel analysis. For the purpose of this thesis, the author also updated the skill specificity index using data first established by Iversen and Soskice (2001). While Iversen and Soskice used data from the 1980s to 1999, this thesis applies data from around the year 2010. To the author's knowledge, this thesis is the first piece of academic work that questions whether the index is still usable and consequently updates it.

Using more recent data, Chapter 7 allows for the possibility that not only skill specificity and social protection are institutional complementarities, but also that unions and collective bargaining can help us to understand cross-national variation in vertical segregation. Here, hypotheses range from the idea that social protection and skills specificity hinder women from reaching the top to the idea that strong representative unions help narrow inequalities. Findings are that in contrast to the gender version of Varieties of Capitalism, more employment protection legislation, specific skill needs and unemployment benefits seem to help women reach top positions. Additionally, unions help to narrow the gender gap, but only if the female workforce is unionised as well. This Chapter thus contributes to the existing literature by highlighting the important role of labour market institutions and different aspects of it in explaining the cross-national variance in women's relative access to top positions.

The findings and limitations are summarised in the concluding **Chapter 8**. The conclusion also suggests further research and provides policy recommendations such as more flexible childcare arrangements.

## Chapter 2: Family policies and gender labour market inequalities

As mentioned in the introduction, this thesis investigates to what extent family policies affect women's chances to reach top positions. Before investigating this relationship, this Chapter presents the empirical background on the dependent variable—women's underrepresentation in top positions.

This is done by firstly analysing the extent of gender segregation in the labour market, namely gendered differences in pay; gendered differences in the type of jobs women and men do; and lastly gendered differences in job hierarchies. Secondly, the author argues that studies need to distinguish between highly educated women and lesser educated women. Evidence for this hypothesis is discussed by looking at how labour market participation varies across education levels. As shown in this Chapter, employment rates vary substantially for women with lower levels of education and additionally, these employment rates have also changed noticeably in the past 16 years. In contrast to this, employment rates of tertiary educated women have remained the same. This indicates that both samples—highly educated and lesser educated women—have to be examined separately as they seem to react differently to changes in the labour market.

This Chapter also provides justification for why vertical segregation was chosen for this thesis as the outcome variable, over other dimensions of gender labour market inequalities. The main reason for this decision is that a wide range of literature explains why, for example, gendered employment rates and the occurrence of part-time employment vary substantially between countries: Scholars have identified a significant relationship between family policies and these labour market outcomes. The impact of family policies on women's underrepresentation in top positions, and more specifically, differences across countries however does not seem straightforward and requires further research.

## 2.1 The pay gap and occupational segregation across Europe

This section addresses occupational segregation and therefore looks at gendered pay differences; how labour markets are segregated between men and women in terms of the type of jobs men and women undertake (horizontal segregation), and lastly, gendered hierarchies (vertical segregation). Scholars such as Mandel and Semyonov (2006) argue that occupational segregation is more pronounced in Scandinavian countries than in liberal economies. They argue that family policies are driving these inequalities.

While scholars have largely treated occupational gender segregation as a "generic indicator of gender inequality" (Charles, 2003, p. 267), we need to clearly distinguish between horizontal and vertical segregation (see for example Hakim, 1996; Semyonov and Jones, 1999; Blackburn *et al.*, 2001, 2002; Charles, 2003). Horizontal segregation here refers to gendered differences in types of occupations and the emergence of female- and male-dominated occupations. It particularly refers to the observation that men tend to be concentrated in different sectors and occupations than women – i.e.. the underrepresentation of women in manual occupations and women's overrepresentation in non-manual occupations (see Charles and Grusky, 1995; Grusky and Charles, 1998; Fagan and Burchell, 2002). However, the impact horizontal segregation has on the gender pay gap is debated. Fortin and Huberman (2002), for example, find that in Canada in the 1990s horizontal segregation only explained 20 percent of the earning gaps and find instead that vertical segregation is the main driver for earnings gaps (Fortin and Huberman, 2002, p. 12).

Vertical segregation refers to gendered hierarchies in the labour market (Hakim, 1996; Spaeth, 1979; Rubery and Fagan, 1995; Fernandez, 1998; Baxter and Wright, 2000; Cotter *et al.*, 2001). Women tend to be underrepresented in high-status occupations and high-paid jobs and face a glass ceiling when aiming for managerial positions (Baxter and Wright, 2000). The term 'glass ceiling' in this case describes a particular phenomenon of vertical segregation by focusing on women's access to top positions relative to men's.

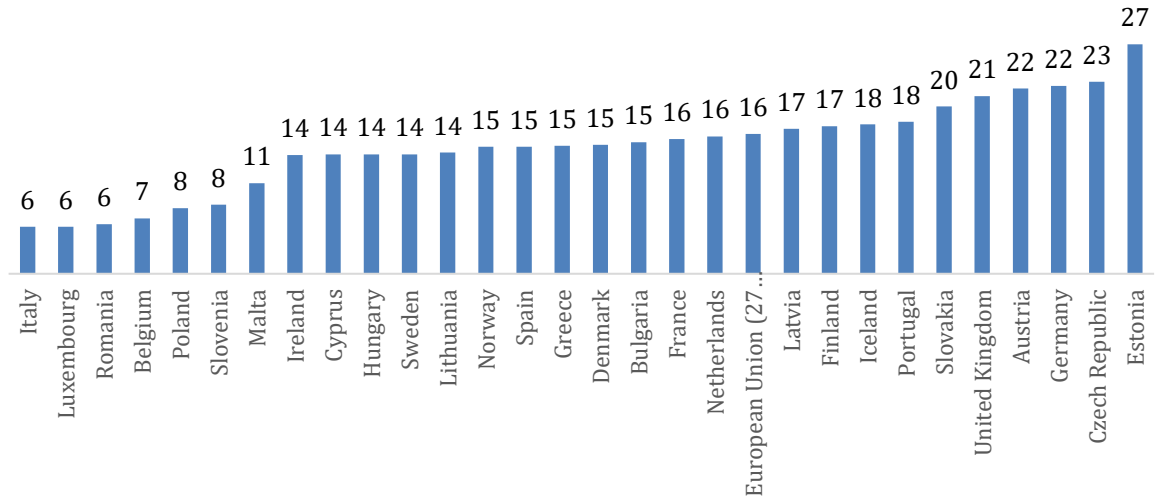
Scholars agree that both vertical and horizontal segregation combined contribute to gendered differences in pay. The author understands the gender pay gap therefore as a result of both types of segregation and discusses pay differentials first before then distinguishing between the gendered types and levels of occupations.

### 2.1.1 The Gender Pay Gap

High gender pay differentials despite welfare policies and laws show that welfare states have only limited capabilities to reduce occupational gender segregation which is the main cause for pay gaps (Fortin and Huberman, 2002, p.12). In other words, Hakim (1992) argues that it is not the occurrence of female and male- dominated types of jobs, but more importantly gendered hierarchies that cause the gender pay gap. However, what is the gender pay gap? The pay gap describes the difference between women's and men's earning and can be calculated in multiple ways. We can calculate the pay gap by working profiles – so distinguishing between part-time and full-time employment. This can be particularly important keeping in mind that women are much more likely to be working part-time than men. The pay gap can also be calculated from the perspective of different age groups. What we see currently is that the pay gap is on EU average lower among young employees than among older employees. In other words, it tends to widen with age. This could be due to the fact that career interruptions due to family responsibilities happen at a later time in an individual's age. Another factor could be that actually inequalities are decreasing. This section does not distinguish between age groups, but rather presents an overall picture of the gender pay gap using the unadjusted gender pay gap data published by Eurostat (2018). It expresses the difference between the average of men's and women's gross hourly earnings.

On the EU-27 average, in 2015 women earned 16 percent less than their male counterparts in industry, construction and services, excluding public administration, defence and social security (see figure 2.1).

**Figure 2.1 Hourly gender pay gap in percentage, by Industry, construction and services (except public administration, defence, compulsory social security), 2015**



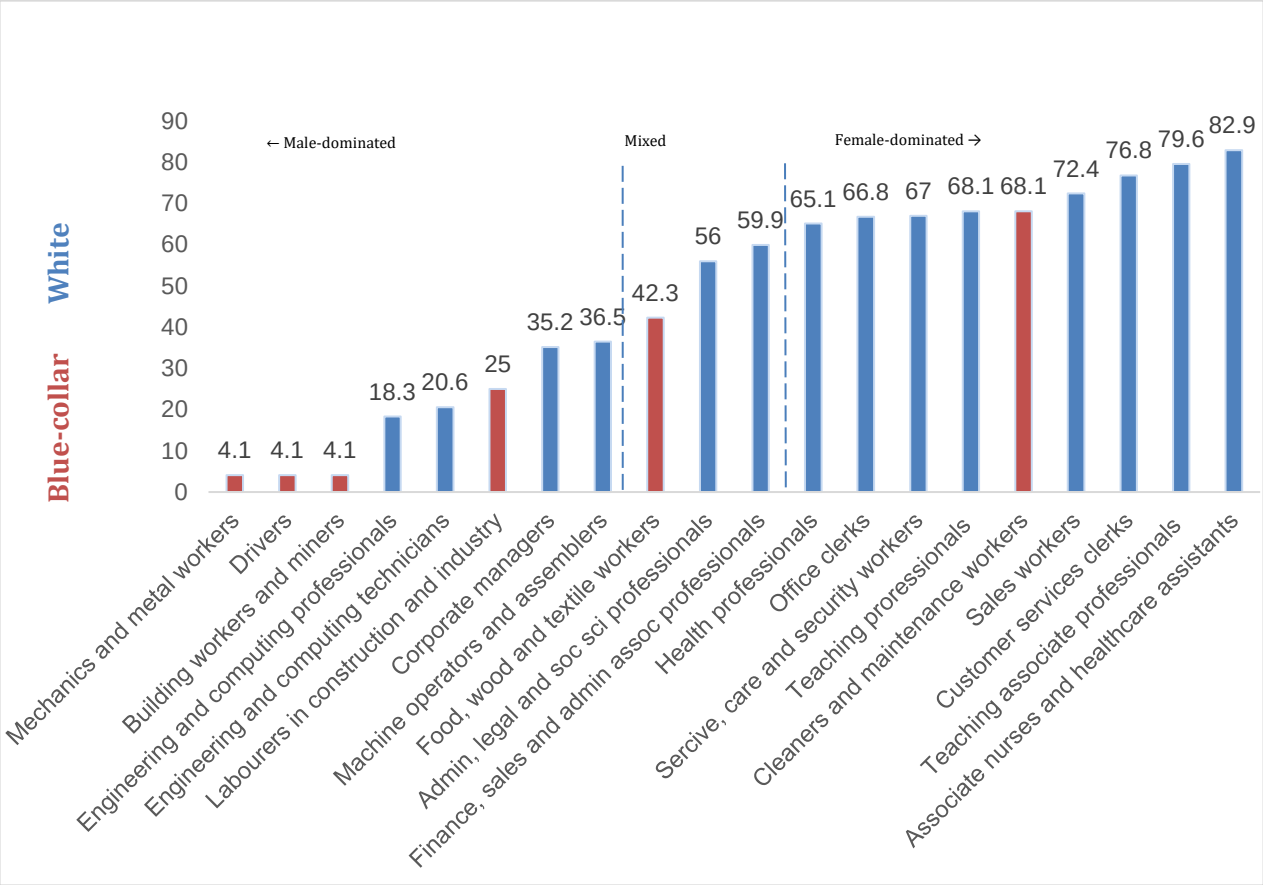

Source: Eurostat; no data available for Turkey, Former Yugoslavia, Cyprus, Switzerland

This is despite equal pay being a right in all member states of the European Union. Pay gaps range from 6 percent in Italy, Luxembourg and Romania over 15 percent in Norway, Spain, Greece, Denmark and Bulgaria to more than 20 percent in Slovakia, United Kingdom, Austria, Germany, Czech Republic and Estonia. Differences in pay consequently do not follow the same patterns as variations in employment rates with Western and some Eastern European countries showing relatively high levels of gendered pay differences, Nordic countries average levels and Mediterranean relatively low to medium levels. In Italy for example, women tend to be less likely to be working in general, however, the gender pay gap indicates that there is relatively little differences in terms of pay. In Estonia on the other hand, where women employment rates are high despite low part-time rates, we find stark differences in terms of pay. Germany and Austria with both high employment and part-time rates seem to discriminate against women to a larger extent than the other European countries.

### 2.1.2 Horizontal Segregation

How can we explain differences in pay? As discussed before, one of the causes of the gender pay gap is the occurrence of female- and male-dominated occupations. These can be examined from a vertical and horizontal perspective. We can measure horizontal segregation by looking at the types of occupations men and women tend to have.

**Figure 2.2 Percentage of female employees, by Top 20 occupations, 2010 in percentage**

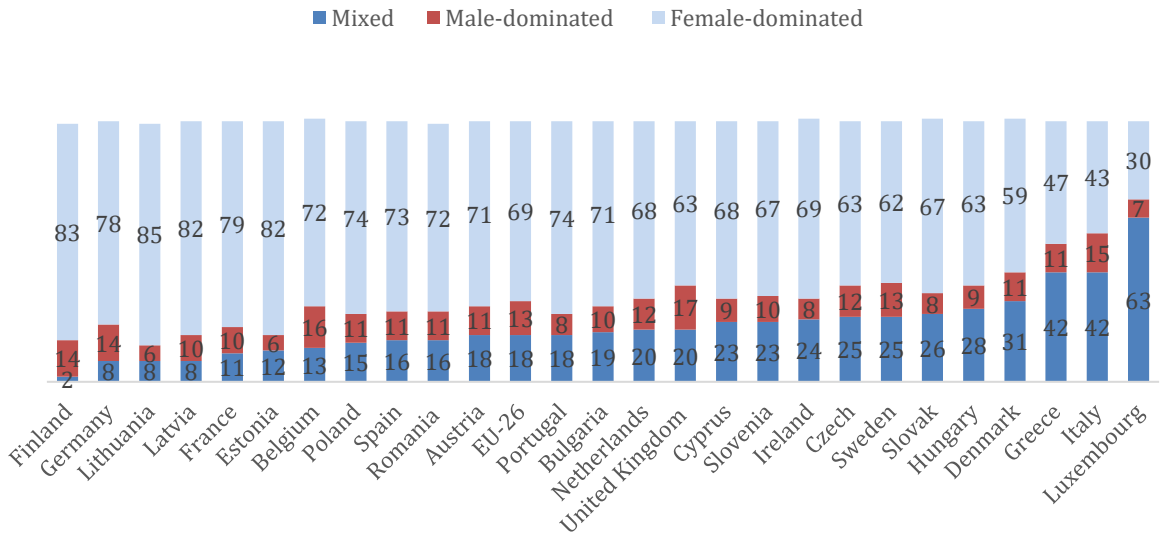



Source: Burchell (2014)

Figure 2.2 illustrates the share of female employees in the 20 most common occupations for 2010 and distinguishes between occupations with more than 60 percent female employees, male-dominated occupations with less than 40 percent women and mixed occupations. Typically female-dominated occupations are, for example, health professionals, office clerks, teaching (associate) professionals, service, care and security workers, cleaners

and maintenance workers, sales workers, customer services clerks, associate nurses and healthcare assistants (see Burchell, 2014, p.17). With the exception of cleaners, these jobs are all white-collar jobs. Male-dominated occupations are mechanics and metal workers, drivers, building workers and miners, engineering and computing professionals, engineering and computing technicians, labourers in construction and industry, corporate managers, machine operators and assemblers. We find both blue and white-collar jobs here. Mixed occupations are finance, sales and administrative professionals, administrative, legal and social sciences professionals or food, wood and textile workers (ibid, 2014).

**Figure 2.3 Women in mixed (40-60% female), female-dominated and male-dominated occupations, 2010 in percentage**




Source: Burchell (2014)

Examining these differences in types of occupations a different perspective, figure 2.3 illustrates the share of women in mixed, female- and male-dominated occupations for 2010 by country. Again, we find significant cross-national variations. In all countries with the exception of Italy, Greece and Luxembourg we find more than half of women employed in typically female-dominated jobs. Only in these three countries, we see over 40 percent of women in mixed occupations. Mixed occupations generally are not common for women with only 2 percent in Finland and an overall average across EU-26 countries of 18 percent. In all

countries, women are highly unlikely to be working in a male-dominated occupation with shares ranging from 6 percent in Estonia and Lithuania to a maximum of 17 percent in the United Kingdom. In general, in 2010 on the EU-26 average, 69 percent of all women worked in female-dominated occupations, 13 percent in male-dominated occupation and 18 percent in mixed occupations. Thus, we can say that again horizontal segregation does not follow any clear patterns and we can see it varying substantially across countries. We find that Denmark and Sweden show comparably high levels of women in mixed occupations and thus fewer women in female-dominated occupations. However, Finland on the other side seems to be highly segregated. The same is true for corporatist countries such as Germany, France, Belgium, Austria and the Netherlands with up to 78 percent of women working in female-dominated occupations while other corporatist countries such as Luxembourg (30 percent) show very different levels. Mediterranean countries can be found on either side of the spectrum, while Baltic countries tend to have high levels of horizontal segregation.

### 2.1.3 Vertical Segregation

Women's relative access to top positions depends on political, institutional and individual factors. Additionally, we find at the organisational level that career advancement depends on new jobs being created or job opportunities being opened to employees. This internal labour market allows for hierarchical advancement (see for example Tharenou, 1997), but the selection of individuals for promotions tends to discriminate against women and minorities. These processes of discrimination within organisations are not subject of this thesis, but are discussed to some extent in the Appendix (see for example statistical discrimination in Appendix A). At the individual-level, traits such as work experience and training seem to affect career progressions as they are expected to increase productivity (Becker, 1975). Managerial skills and high job performance are also associated with managerial advancement progression (Tharenou, 1997). Thus, it needs to be noted that a combination of traits impact access to managerial and senior professional positions. Education and higher-status jobs for example are positively correlated, both for women and men (Hegewisch and Gornick, 2011). However, education cannot be the only factor as it

increases access to high-status jobs, but does not necessarily reflect the hierarchical position of employees within an organisation. This is why this thesis distinguishes between senior professional and managerial positions that require additional managerial traits. Managerial professionals are selected as these positions are always closely related to authority and power. Senior professionals in some cases include individuals who might only have the training and human capital trait and lack managerial competences. However, many senior professionals such as dentists or engineers are assumed to work in teams with staff in less senior positions. Thus, even senior professionals can be expected to have some kind of managerial responsibilities and authority.

As pointed out by Spaeth (1979), the gender pay gap can be explained to a substantial extent by gendered differences in occupational authority. Spaeth (1979) here highlights the importance not only of authority, but also complexity and prestige of a job that allows researchers to distinguish occupations from a vertical perspective. Other studies refer to the underrepresentation of women at the top of organisations as the "glass ceiling" (see Baxter and Wright, 2000) arguing that while obstacles to get promoted increase for both genders as they move up the career ladder, it is particularly women that face the strongest hurdles to get promoted.

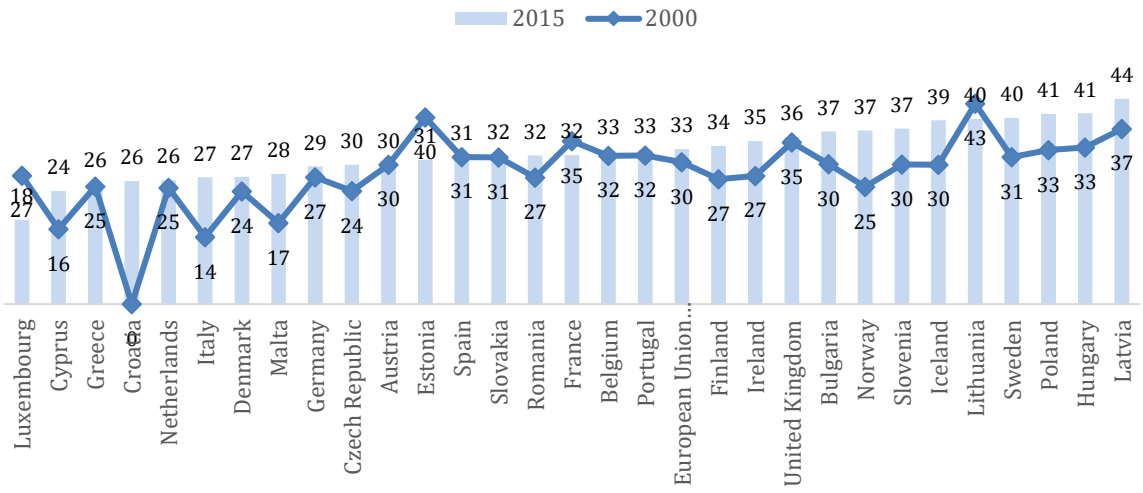
Plotting the distribution of men and women between certain occupations however is not sufficient to fully explain gender wage gaps. Fortin and Huberman (2002) find that in Canada in the 1990s if we hold constant the ratio of female and male earnings in each occupation and then give the female workforce the male occupational distribution, only 20 percent of the earning gaps can be explained by horizontal segregation. In other words, the gender pay gap is rather a result of "intra-occupational vertical segregation" (Fortin and Huberman, 2002, p. 35). Consequently, we need to examine the "within-occupation components" (Fortin and Hubermann, 2002, p.12) and examine hierarchies. Occupational vertical segregation generally "is the key issue from a policy perspective" (Hakim, 1992, p.132) as it is the main driver for wage differentials in labour markets. Jurajda (2003) on the other hand questions the importance of occupational segregation for the gender wage gap. She

examines the gender wage gap in the transition countries of Czech Republic and Slovakia and finds that occupational segregation – as measured in women's and men's share in ISCO-coded occupations – is not causing the gender wage gap, but discrimination and violations of the equal pay clause within the labour market are. However, Jurajda (2003) excludes managerial occupations from her analysis, which is why her definition of occupational segregation mainly reflects horizontal segregation, but not hierarchical vertical segregation.

According to Hakim (1992), vertical segregation – measured as the distribution of women in different ISCO classified occupation groups – does not only explain the gender pay gap. The absence of women in higher positions also reflects a lack of interest representation. This is particularly interesting when examining the relationship between labour market institutions such as trade union density and segregation. In other words, if women are not represented in top positions this means that their interests are much less likely to be picked up and pursued. Additionally, it means a lack of role models for women in less senior positions (Morgenroth, Ryan and Peters, 2015). Eurostat data follows the International Standard Classification of Occupations (ISCO-08) by the International Labour Organization (ILO) in order to class occupations. Managers include Chief Executives, Senior Officials and Legislators, Administrative and Commercial Managers, Production and Specialised Service Managers and Hospitality, Retail and Other Services Managers. While this definition for managerial jobs will be followed for the descriptive purposes in this Chapter, the analytical part of this thesis will follow an adapted definition of managerial positions[2]. Based on Eurostat data however, we can already see that there is a wide cross-national variation of the gender gap in managerial occupations. On the EU-27 average, only 33 percent of all managers were women in 2015 in comparison to 30 percent in 2010 (see figure 2.4).

[2] This adapted definition as discussed in Chapter 5. The thesis follows two definitions, one based on the ISCO-08 classification and thus identical to "managers", the other one includes not only "managers", but also "senior professionals".

**Figure 2.4 Share of women in managerial positions, 2000 and 2015, in percentage, age group 20-64 years**




Source: Eurostat, no data available for Croatia for the year 2000

Differences in the proportion of women in managerial jobs in 2015 range from less than 20 percent in Luxembourg to less than 30 percent in Cyprus, Greece, Croatia, Netherlands, Italy, Denmark, Malta and Germany to less than 40 percent in Czech Republic, Austria, Estonia, Spain, Slovakia, Romania, France, Belgium, Portugal, Finland, Ireland, United Kingdom, Bulgaria, Norway, Slovenia and Iceland. Only in Lithuania, Sweden, Poland, Hungary and Latvia do we find between 40 and 44 percent of women being managers. Again, no clear patterns are visible in relations to welfare regimes. This is a stark contrast to the pattern of female employment rates discussed in the previous section where employment rates of women are high in social-democratic Scandinavian countries, medium- high in continental conservative European countries and lowest in Mediterranean welfare states.

Looking at vertical segregation however, while former socialist countries again seem to offer better perspectives for women to reach managerial positions, Mediterranean, Western European and Scandinavian countries do not follow the same patterns we observed in terms of employment rates. Only in Lithuania, Sweden, Poland, Hungary and Latvia do we see high levels of female managers. What is more, even though corporatist Western European countries employ a high rate of highly educated women, they show the lowest rates of female

managers. In a nutshell, if family policies are the main reason for cross-national variation in women's employment rates, at a first glance, they do not seem to have the same effect on vertical segregation.

We can also see a change over time in women's share amongst managers from 2000 to 2015. In general, women are underrepresented in every single country illustrated in figure 2.4 with Latvia in 2015 having the most equal ratio of female managers at 44 percent and Luxembourg the lowest with just 18 percent. What is more, we cannot generally say that women's share of managerial positions has increased or decreased from 2000 to 2015 as some countries such as the Baltic ones seem to have more women in top positions in 2015 than in 2000, but others remained at the same level or even increased vertical segregation.

There has been an increase of 7 to 13 percent in Cyprus, Italy, Malta, Finland, Ireland, Bulgaria, Norway, Slovenia, Iceland, Sweden, Poland, Hungary and Latvia. There could be two potential explanations for this: Either we have more women in managerial positions in 2015 than in 2010 because hierarchies have become less gendered and more women relative to men reach top positions. Or the overall increase of women's employment rates has simply led to higher numbers of women in the labour market, and therefore consequently, the share of women over men in managerial positions has increased. We see that in many countries that have witnessed an increase of female managers, we also find a stark growth in employment rates per se, such as in Malta, Poland, Hungary, Bulgaria, Latvia, Lithuania, Norway, Sweden and Iceland. Thus, in our analysis we need to find a way of distinguishing between highly educated women and the overall female workforce.

## 2.2 Women's employment patterns across Europe

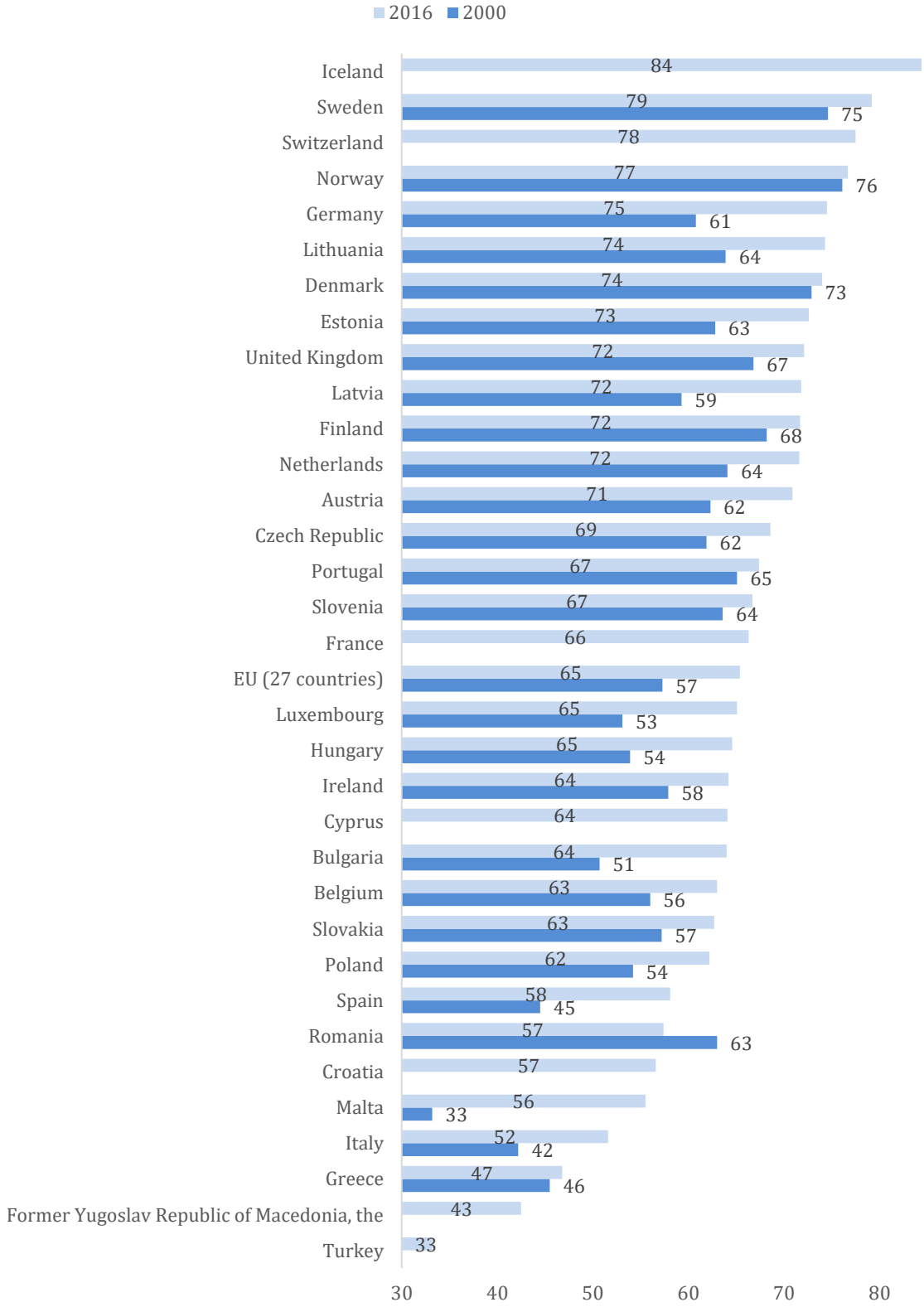
Women are still responsible for the majority of the domestic work and childrearing (Brines, 1994, p.653; Bianchi *et al.*, 2012; Dotti Sani and Treas, 2016). And even though the labour force participation rate of women between 25 and 54 years has risen on average in

the European Union from 57.3 percent (EU-27) in 2000 to 64.4 percent in 2015, women are still underrepresented on the labour market compared to the roughly constant men's employment rate of 76 percent (European Labour Force Survey data). First, the following section explores differences in employment rates for highly educated women and the general workforce, and then secondly, these cross-national differences are analysed using family policies.

### 2.2.1 Gendered differences in employment rates

Figure 2.5 on the next page illustrates women's labour market participation rates in 2000 and 2016 across the European Union. 2016 was chosen as the latest year since this is the most recent data available. 2000 was chosen as the year for comparison because it allows a comparison over a substantial amount of time and secondly, data was available for a large number of countries in contrast to earlier years such as 1990. Still, there is no data available for 2000 for Turkey, Croatia, Cyprus, France, Switzerland and Iceland. We find that on EU-27 average in 2016, 65 percent of all women between 20 and 64 years work in the formal labour market, an increase of 8 percent compared to 2000.

**Figure 2.5 Women's employment rates, in percentage, 2000 and 2016; 20 to 64 years.**

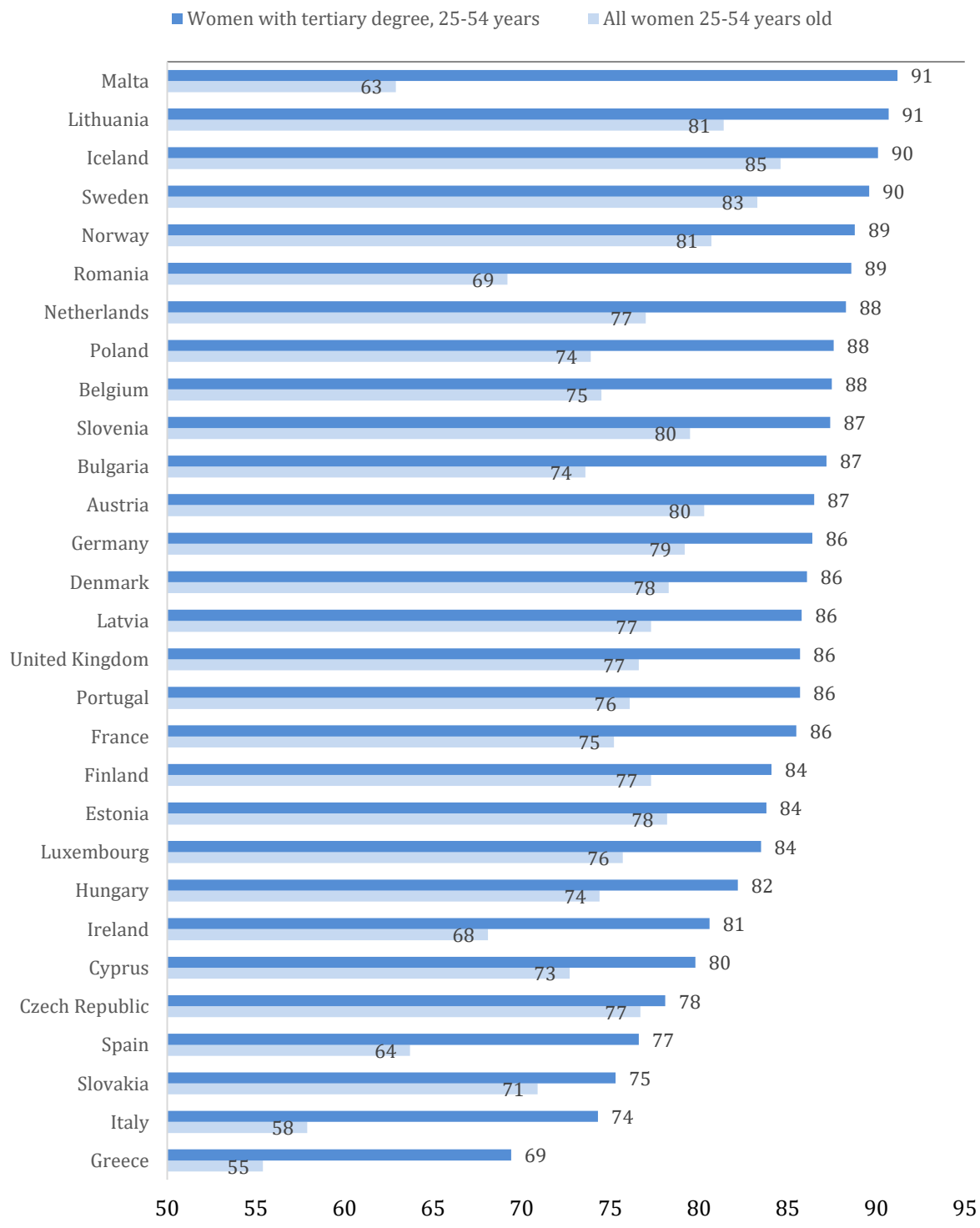



Source: Eurostat; no data available for the year 2000 for Turkey, Former Yugoslavia, Croatia, Cyprus, France, Switzerland and Iceland

However, employment rates range from less than 50 percent in Greece and Italy in 2015 to Iceland with over 84 percent. We can identify fairly clear patterns here, similar to that found by Stier and Lewin-Epstein (2001)—with the Scandinavian social-democratic welfare states Sweden, Iceland, Norway, Denmark and Finland showing high employment rates and low rates in Mediterranean welfare states such as Italy, Greece and Spain. While continental European welfare states such as Germany, the Netherlands and Austria seem to be doing relatively well, the majority of Eastern European welfare states—with the exception of Estonia, Latvia and Lithuania—are below average. However, the particularly good performance of continental European countries is linked with the occurrence of part-time employment (see figure 2.8).

What figure 2.5 is also not showing is how employment rates vary regarding educational backgrounds. Figure 2.2 illustrates the share of women participating in the labour market between 25 to 54 years old for all educational backgrounds and that for women in that age group with tertiary degrees in 2015. We can see that highly educated women in every country are much more likely to be employed than the overall female workforce. Only in Greece, Italy, Slovakia Spain and the Czech Republic less than 70 percent of highly educated women are employed. While employment rates are between 70 and 91 percent everywhere else, it is particularly Eastern European and Scandinavian countries that perform particularly well. More than 85 percent of all highly educated women in the corporatist welfare states such as Germany, Austria, the Netherlands, France and Belgium are also employed. We therefore see little variation between countries in terms of employment rates of highly educated women.

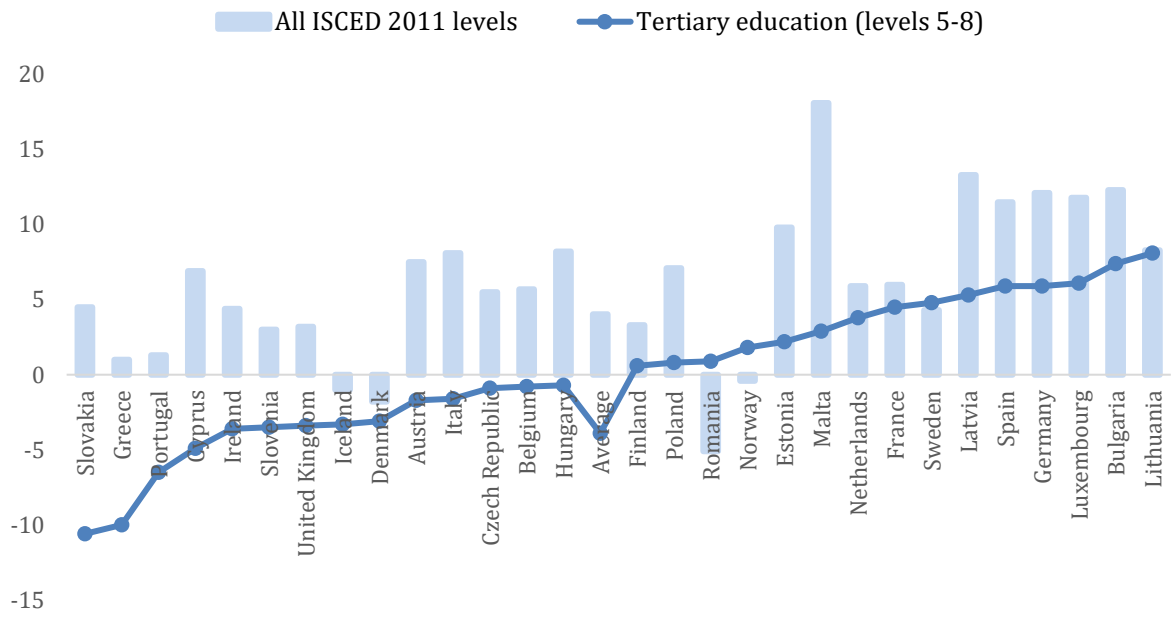
**Figure 2.6 Women's employment rates by education, as percentage of women between 25-54, 2016**




Source: Eurostat; no data available for Turkey, Former Yugoslavia, Cyprus, Switzerland

Figure 2.7 below illustrates changes in employment rates between 2000/2001 and 2015 and shows how different the patterns are for tertiary educated women compared to the overall female workforce. Generally, we can say that on average highly educated women are as likely to be employed in 2015 compared to 2000, while women from all educational background are substantially more likely to be employed.

**Figure 2.7 Changes in women's employment rates by education, from 2000 to 2015, 20 to 64 years.**




Source: Eurostat; no data available for Turkey, Former Yugoslavia, Cyprus, Switzerland

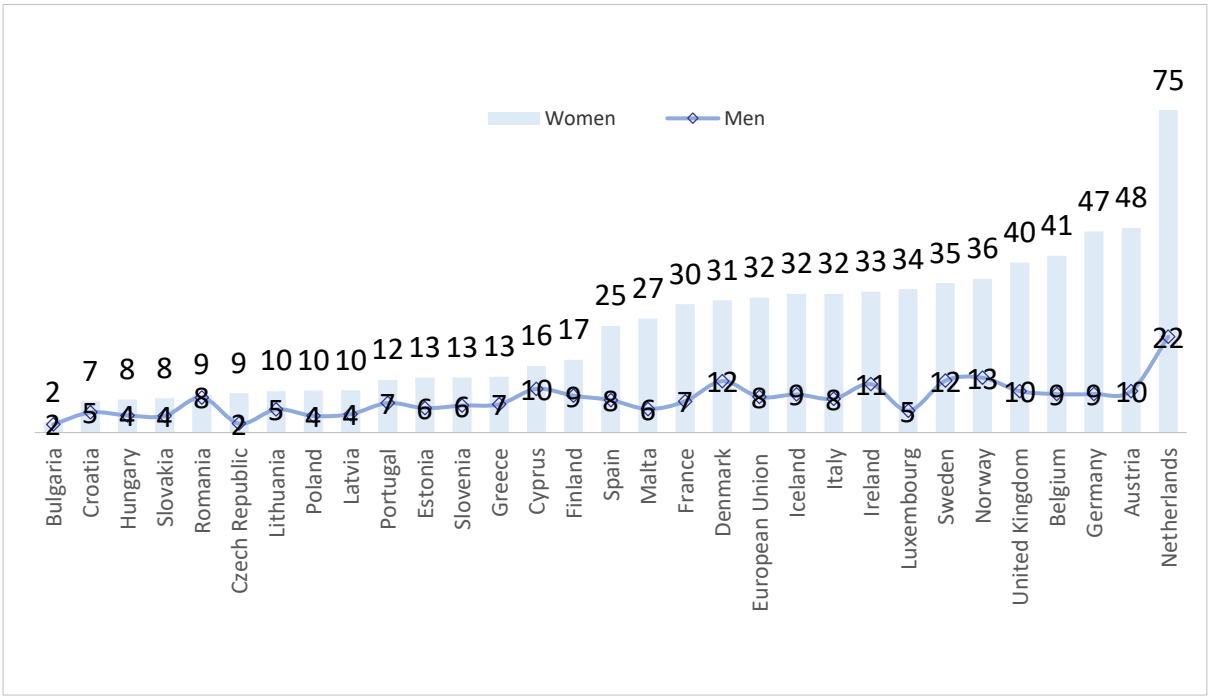
Especially in some Scandinavian (for example Finland, Denmark) and Mediterranean countries employment rates of highly educated women have decreased, whereas in conservative welfare regimes and some former socialist welfare states it has increased. There is no convergence between changes in employment rates for the two groups. Only in Sweden and Lithuania both the overall female workforce and highly educated women are in relative terms equally more likely to be employed in 2015 compared to 2000. In Finland, Poland, Romania, Norway, Estonia, Malta, Netherlands, France, Sweden, Latvia, Spain, Germany, Luxembourg, Bulgaria, Lithuania the share of highly educated women in employment has increased, but not to the same extent as the share of the overall workforce (with the exception of Romania). In the remaining countries, highly educated women are less likely to

be employed in 2015 than in 2000. In Iceland and Denmark, employment rates overall and for highly educated women have decreased, while in Romania and Norway only the overall workforce is worse off, but not the highly educated one.

### 2.2.2 Gendered differences in the occurrence of part-time

As mentioned above, some countries show high employment rates due to a high share of women working part-time. Figure 2.8 below illustrates part-time employment rates as a share of overall employment for 2015. Eurostat defines part-time based on a spontaneous response from the individuals whether he/she works full- or part-time – thus the definition of what constitutes as part-time work can vary depending on the country but also the individual. We can see that women across the European Union are significantly more likely to be working part-time than men. Part-time employment rates for women range from only 2 percent in Bulgaria to over 25 percent in Spain to 75 percent in the Netherlands. Thus, high employment rates in continental European welfare states such as Austria, Germany, the Netherlands and Belgium correspond with high part-time employment rates. For example, the Dutch with 75 percent of all employed women working part-time allows for this assumption. We also see that while in Eastern and to some extent Southern Europe—with the exception of Italy—part-time employment is not the norm for either women or men.

**Figure 2.8 Part-time employment rates, as percentage of the total employment, 2015**




Source: Eurostat; no data available for Turkey, Former Yugoslavia, Cyprus, Switzerland

## 2.3 Family Policies and Occupational Segregation – The Welfare State Paradox

What helps us to explain these cross-national differences in women's employment rates, the occurrence of part-time work and most importantly occupational segregation? The section below discusses how scholars mainly agree on the association between progressive welfare states and high female employment rates. Additionally, they identify to what extent welfare regimes impact women's likelihood to be working **part-time**. However, in contrast to this and focusing on occupational segregation, Mandel and Semyonov (2006) argue that there is a paradox in the relationship between Western welfare states and gender inequalities, when they write the "same welfare state activities that promote one dimension of gender equality appear to inhibit another dimension" (2006, p. 1942). They find that **occupational segregation** as measured in women's access to managerial positions and female-dominated

jobs is more pronounced in Scandinavian countries despite their progressive family policies than in liberal economies such as Canada or the United States. The authors find a contradiction between family policies which enable women to join the formal labour market on the one hand, but limit occupational opportunities and pay on the other. Thus, they agree that progressive and developed welfare states are the main drivers for women's labour market participation (Mandel and Semyonov, 2006). Their theory around the Welfare State Paradox is discussed in greater detail in section 2.3.2.

### 2.3.1 Women's employment and family policies – literature review

How can we explain gendered differences in employment rates and part-time employment? Whereas it seems that for men there have to be reasons that hinder them from working full-time, such as the lack of full-time jobs or health problems, unemployment, school attendance or partial retirement (Rosenfeld and Birkelund, 1995, p.111), many women work part-time because of child-rearing and providing care for family members (Stier and Lewin-Epstein, 2001). Since women still do most of the domestic work including childrearing, they tend to choose jobs with reduced hours in order to combine domestic and formal labour-market work (Blossfeld, 1994; Moen, 1985).

It seems crucial to understand to what extent family obligations and responsibilities affect formal employment and the ability to work full-time. Esping-Andersen (1990) describes family policies as a means to impact the individuals' reliance on the family and thus argues that welfare states and their policies affect employment patterns. Since the late 1990s national political economies have faced the need to promote work-family balance and family policies. With women continuing to undertake the majority of household and family responsibilities, welfare regimes and their public policies, laws and structures are still shaping gender labour market outcomes. As Davis and Kalleberg argue (2006), three factors have caused this development:

1. Female labour market participation and in particular the participation rate of mothers increased due to various factors such as limitation of the welfare states because one income alone was not sufficient to provide for the whole family.
2. Due to an increase of the working hours especially in highly-skilled jobs on the one hand and the financial obligations to provide for children on the other, family policies have had to be launched to actually enable the worker both to work and have children without cutting hours back.
3. The decline of the traditional family model and the consequent rise of single-parent households have demanded investments into family policies in order to enable single-parents to combine work and family.

As listed by Clarke (2016) and Hegewisch and Gornick (2011), these family policies therefore range from leave policies (maternity, paternity and parental leaves) to childcare support (childcare subsidies to various degrees and for various age groups) to child benefits and family allowances. It is important to clearly distinguish between policies as these have different effects on gender labour market inequalities.

The female labour market participation rate is expected to be lower in countries with generous **child benefits and family allowances** (see Clarke, 2016; Blau *et al.*, 2001; Borjas, 2012). This is because generous child benefits and allowances reduce the individual's incentive to return back to the labour market. As women are more likely to be looking after the child and furthermore are also more likely to be employed in a lower wage job, this effect is largest for women (Jacobsen, 1998). Blau *et al.* (2001) also find that tax subsidies have a similar effect in that they reduce the incentive for the second earner to work full-time and thus fosters the male breadwinner model in that it strengthens the division of labour between the spouses (Clarke, 2016).

Hegewish and Gornick (2011) find that the impact of **leave policies** is not straightforward, and here, education levels seem important. They argue that first of all

women are more likely to be in the labour force before having children if paid leave is provided. Additionally, not only are women more likely to work before they have children if leave is provided, but they also are more likely to return after childbirth, even if leave is just paid for a short amount of time. In the United States, Joesch (1997) however finds that women have higher rates of return to work if leave is paid and also that women with higher educational levels have higher rates of returning to work. This is because highly educated women tend to have higher paid jobs, and therefore, face a stronger financial incentive to return back to their job that is better paid than maternity leave (Hegewisch and Gornick, 2011).

Investigating the impact of parental and paternity leave on women's employment patterns, the effect on gender labour market inequalities seems to be insignificant for two reasons. First of all, because "obligatory leave is rare" (Hegewisch and Gornick, 2011, p. 127), take-up rates for parental and paternity leaves are low for fathers. While there has been an increase of men's use of parental leave, shared entitlements still are taken by mothers in the majority of cases. Additionally, while women take their maternity leave in one block and therefore interrupt their career full-time for a certain amount of time, fathers are more likely to take flexible leave in smaller instalments and thus stay connected to their workplace. Therefore, parental and paternity leave cannot be expected to significantly impact labour market inequalities.

While scholars question whether the **provision of public childcare** has led to an increase of women's employment rates or whether women first joined the labour market due to a change in norms and economic conditions and then lobbied for childcare provision (Leira, 1992), the significance of childcare for women's employment is undeniable. Childcare and long-term care are crucial in order to increase women's labour market participation (see for example Adema and Whiteford, 2007). This is because childcare, especially for children under 3 years old, helps families to balance work and care (Misra *et al.*, 2011). High costs of childcare due to no or limited public provision discourages especially women with lower wages from staying in the labour market, while highly educated women are less dependent on the public

provision of childcare due to higher incomes. What is more, the availability of childcare matters as well and available childcare positively impacts employment rates. In a nutshell, women's and mothers' employment rates are expected to be higher in countries with subsidised and available childcare. Clarke (2016) also highlights the idea that the provision of public childcare indirectly increases women's labour market participation as it creates jobs in the childcare sector that tend to be female-dominated.

Instead of analysing the impact of separate family policies on gender labour market inequalities, many scholars have used use family policies typologies to examine the impact of policies on women's labour market outcomes. (e.g., Esping-Andersen (1990, 1999), Leitner (2003), Saraceno and Keck (2010), Gornick and Meyers (2003), Bambra (2004), Kröger (2011), Gornick *et al.* (1997), Mandel and Shalev (2009), Sainsbury (1996), Korpi (2000), Korpi et al (2013) and Lohmann and Zagel (2016).) The Three Worlds of Welfare Capitalism typology by Esping-Andersen (1990) for example distinguishes welfare regimes according to their institutional settings of the "inter-causal triangle" of state, market and family in industrial countries (Esping-Andersen, 1999:35) and their degree of de-familiarisation. De-familiarisation describes the extent to which "policies that lessen individuals' reliance on the family; that maximize individuals' command of economic resources independently of familial or conjugal reciprocities" (Esping-Andersen, 1999: p.45). The variety of welfare regimes with different institutional arrangements (Orloff, 1993) leads to a variety of employment-supportive family policies and consequently different degrees of familialism. According to Esping-Andersen (1999), the idea of de-familialisation closely relates to de-commodification, since it aims to commodify women first by making them less dependent on their husband in order to de-commodify them, in a second step, from the market. Key actors in providing support outside of the family are the state but also the market and third sectors. While liberal and conservative welfare regimes show residual levels of family policies, the social-democratic countries provide more extensive family policies. The liberal regimes argue that it is the market's duty to provide support, while the conservative regimes insist on preserving the family as the main provider of support (van der Lippe and Van Dijk, 2002). This does not only reflect on unemployment/employment rates of women, but more crucially on part-time rates.

However, despite the complexity of the various family policy typologies, all typologies have limitations and are therefore not applied to this research. For example, welfare regimes as established by Esping-Andersen (1990, 1999) are based on an initial set of only 18 countries. The approach has been criticised heavily (see also Bambra, 2007) for overlooking crucial differences between countries that fall in the same groups, such as Japan and Italy according to the initial work of Esping-Andersen (1990). Additionally, scholars argue that adding more variables to the analysis will cause country clusters to change substantially.

Korpi *et al.* (2013) and Lohmann and Zagel (2016) on the other hand do not define exclusive country clusters, and therefore, do not assume homogeneity within specific groups of countries. However, both approaches have both methodological and theoretical limitations when applied in policy analysis. From a methodological point of view, whilst the theoretical concepts are complex and sound, the operationalisation of the concepts is problematic. Certain variables such as family taxation and subsidies are rather limited in describing the extent of policies supporting the male breadwinner model. Because the data used in this case is binary, it can only indicate whether or not countries provide tax incentives for main breadwinner households or not, but do not go into any further detail. Even if these data limitations did not exist, the indices would still be problematic if used as independent variables for comparative research. In the example of this thesis, family policy typologies and indices could easily be applied to examine whether or not there is an association between the gender gap in top positions and Lohmann and Zagel's (2016) (de-)familiarised countries or countries that fall into Korpi *et al.*'s (2013) typology of dual-earner, dual-carer and traditional clusters. However, we would not know what specific element of the indices was driving significant associations or what policy was suppressing any significant associations. As this thesis aims to also provide policy recommendations, not being able to find a specific policy affecting the gender gap would be problematic. From a theoretical point of view, any typology will always only reflect what the research considered to be most relevant (Lewis, 1997).

In summary, family policies indices and typologies are limited as they assume homogeneity within clusters, include only specific range of policies, aggregate policies that in combination with others that might either suppress effects or exaggerate them and lastly occasionally use problematic data. Consequently, this thesis looks at family policies separately in order to identify associations clearly between policies and the gender gap in top positions. A full discussion of the various family policies discussed here can be found in Appendix A.

### 2.3.2 Empirical evidence for the Welfare State Paradox

This section reviews the theoretical association between separate family policies and hierarchical occupational segregation and presents scholarly empirical evidence for these links.

**Extensive paid maternity leaves** and the long absence from work for example can put employers in the private sector off from hiring women in the first place or from hiring them for upper-level positions following also Human Capital Theory (Becker, 1964). Human Capital Theory (HCT) is defined as "the stock of knowledge and skills accumulated by an individual and is acquired through education, training and experience" (Perales, 2013, p. 602). Due to domestic work and children in particular women are likely to interrupt their work and career. With more generous maternity leaves, the incentives to return to the labour market after childbirth are lowered. Family responsibilities in combination with extensive family policies therefore lead to less work experience, training and therefore to a disadvantage in the labour market (Polachek, 1981). Skills depreciation due to career interruptions and less work experience and less training, are expected to be particularly detrimental for highly skilled jobs as employers find it hard to manage temporary absences. Employers, expecting women to have discontinuous careers, penalise female applicants of highly skilled and thus highly paid jobs (Hegewisch and Gornick, 2011; Summers, 1989). Additionally, the segregation into "women-friendly" jobs that allow for easy returns after maternity leave can reduce women's wages in these occupations due to a crowding-out effect into female-dominated jobs. This

means that women are pushed into specific jobs that allow easy return to employment. However, others such as Van der Meulen Rogders (1999) and Waldfogel (1997) argue that maternity leave can also help women to build up continuity of employment with one employer and thus helps strengthen the ties and connections between female employee and employer, which then could help increase wages. Empirical studies (e.g., Bertrand, Goldin and Katz, 2010; Ruhm, 1998; Waldfogel, 1999; as cited by Hegewisch and Gornick, 2011) find that generally long leaves are associated with motherhood penalties—i.e., that long leaves reduce mothers' earning and thus increase the gender pay gap. However, maternity leave could potentially also help women to build up tenure and continuity with one employer, and thus, strengthen their position in the labour market. This can, in the long run, help them to reach top positions and higher pay (Hegewisch and Gornick, 2011). In contrast to this, others (e.g., Correll, Benard, and Paik 2007; Petersen and Saporta 2004; Spence 1973; Gangl and Ziefle, 2009) find evidence for the belief of employers that investments into training are more risky for female employees and that provision, promotions or remunerations pay off better for workers without expected career interruptions due to pregnancy. Hansen (1995, p. 3) sums this phenomenon up and states: "if women have social rights that do not apply to men or are seldom used by men, and the practices of these rights are unprofitable for the employers, employers may choose to discriminate against female job applicants". **Paternity leave** on the other hand aims to equalise parenting roles, and in addition, may influence employer discrimination. This is because employers may be less likely to discriminate against mothers if men are also likely to take up leave after childbirth (Nepomyaschy and Waldfogel, 2007; Tanaka and Waldfogel, 2007).

Policies that discourage women from working full-time are also expected to hinder women from reaching top positions as part-time employment has been shown to be associated with low-level jobs (see section 2.2.1). As discussed previously, **child allowances and tax subsidies** foster the male breadwinner model and discourage the second earner from working full-time (Blau *et al.*, 2001; Clarke, 2015). Since women are more likely to be the second earner and to be working part-time, these policies are expected to increase occupational segregation. Even though part-time arrangements can help to combine work and family duties, thus enabling women to participate in the labour market, it can, at the

same time, hinder women from reaching the top (Mandel and Semyonov, 2005). Personal characteristics of women working full-time versus part-time explain the variation in earnings. For example part-time workers tend to be less educated, older, in a relationship and with several children, working in small companies and in temporary jobs with low job tenure (Manning and Petrongolo, 2008).

While Mandel and Semyonov (2006; 2009) do not directly question the impact of the provision of childcare on occupational segregation, they see an indirect effect. This indirect effect or second side of the welfare state paradox in achieving gender labour market equality lies in the state's role as an employer and provider of **childcare services and a large public sector** associated with it. Even though childcare enables women to go into the labour market, as well as provide employment opportunities in the public services due to its wide range of female-dominated jobs and flexible working arrangements, it has, at the same time, fostered the development of these female-dominated niches with their traditionally lower-paid and less lucrative positions. (Mandel and Semyonov, 2006). Yaish and Stier (2009) argue that the gender gap in job authority—measured as obtaining a supervisory role—is higher in countries with a large share of women in the public sector. They explain this association with the tendency of women to choose routine non-manual service occupations (also see Hansen, 1995; Wright *et al.*, 1995; Charles and Grusky, 2004). Therefore, by providing "woman-friendly" jobs, the state on the one hand offers employment opportunities to women that otherwise would not have engaged in the formal economy (Gornick and Jacobs, 1998). However, it reinforces vertical segregation as men continue to choose high authority jobs, whereas women opt for less driven careers that allow them to combine paid work and family responsibilities more easily instead of committing fully to a job with high authority (Mandel and Semyonov, 2005; Okun *et al.*, 2007; Stier and Yaish, 2008).

According to the welfare state paradox, large public sectors such as in Sweden and Denmark have not only decreased women economic prospects, but also they have hardened the traditional division of labour between the spouses. As mentioned before in progressive welfare states, women are underrepresented in managerial (lucrative) positions (Mandel and

Semyonov, 2006) because they are more likely to work part-time and take time off for childcare. Important here is that according to the welfare state paradox theory, both leave policies and childcare provisions seem to decrease women's likelihood to be managers. The authors suggest that this might be due to the strong emphasis of the state on caretaking, which does not only encourage women to take time off, but also to move into occupations that are more mother friendly. Also, Mandel and Semyonov (2006) argue that countries with extensive childcare systems have large public sectors and thus create a mother-friendly atmosphere that pushes women into less lucrative and less powerful positions such as jobs in the provision of childcare services. The authors examine this empirically through the use of the welfare state intervention index, and its impact on women in managerial and lucrative positions. The welfare state intervention index includes paid maternity leave, the percentage of children between 0 and 6 years in publicly funded childcare, and the public welfare sector as a share of the total. Their findings suggest that progressive and developed welfare policies and a large public sector indeed help women to enter the labour market but lead to a segregation of the labour market into female- and male-dominated occupations and an underrepresentation of women in managerial positions (Mandel and Semyonov, 2006).

Although the theory has provided an interesting perspective on welfare states and their role in reducing or increasing gender equality, there are some limitations. First of all, the welfare state intervention index combines two key policies that might contradict each other— namely, leave and childcare policies. As discussed before, maternity leave helps women to enter the labour market, but long and paid maternity leave makes employers more reluctant to hire women and also decreases women's incentives to return to work quickly. Childcare, on the other hand, is supposed to help women combine work and family and thus help them to stay in the labour market (Misra *et al.* 2011).

The second problem with Mandel and Semyonov's (2006) study is that childcare policies need to be distinguished between childcare coverage for under 3-year-olds and for older children, as particularly childcare for under 3-year-olds seems to help women to enter the labour market. However, because the majority of studies do not examine vertical

segregation, these assumptions need to be questioned first before combining policies into one single indicator. Lastly, combining three indicators into one index does not allow the researchers to clearly identify which element affects women's position in the labour market most. Consequently, Mandel and Semyonov's (2006) argument that family policies are detrimental for women's access to (lucrative) managerial positions and thus leads to a welfare state paradox needs to be tested using a more detailed approach.

Lastly, Mandel and Sermyonov (2006) use exclusively aggregate data. As discussed before in this thesis, using aggregate data can be problematic as it masks or exaggerates composition effects.

### 2.3.3 Questioning the Welfare State Paradox: Empirical evidence

Korpi, Ferrarini and Englund (2013) question this welfare state paradox. Instead of creating a welfare state index measuring only maternity leave arrangements and childcare, they compose three different profiles of family policies in order to measure not only generosity, but also the quality of the welfare state. As discussed before, Korpi *et al.* (2013) distinguish between policies supporting the traditional family, the dual earner dimension or the dual-carer model (see section 3.1.2). The authors argue that "major differences among earner-carer and other policies in women's chances to enter top earnings quintiles cannot be found" (2013, p. 32) and that generally cross-national differences in women's access to lucrative managerial positions is small. While generous family policies have a particularly positive effect on bringing women without tertiary education into work, the authors find no significant effect of family policies on highly educated women's employment rates. However, women seem to have better access to top positions in earner-carer countries, namely those with generous child care and leave policies as opposed to under market-oriented welfare regimes—those where state funded family policies are meagre. Despite disagreeing with the welfare state paradox, Korpi *et al.* (2013) also find that traditional family policies such as child allowances and taxation subsidies seem to disadvantage women in this context. On the other

hand, countries with earner-carer policies such as publicly provided childcare do not hinder women's career perspectives. In terms of the emergence of "female ghettos" or female-dominated occupations, Korpi *et al.* (2013) argue that progressive family policies have helped women to have continuous careers and have improved employment situations for women with lower levels of education without penalising highly educated women.

Clarke (2015) also finds limited evidence for the welfare state paradox. He examines the impact of family policy profiles following Korpi's *et al.* (2012) definition of women's share in managerial positions for 20 OECD countries from 1985-2010. He finds that maternity leave may reinforce vertical segregation and hinders women from obtaining managerial positions. However, he argues that there is a positive impact of progressive dual-earner family policies—such as shared parental leave or extensive childcare—on female labour market participation rates. More specifically, maternity leaves seem to hinder women's career perspectives, measured in women's access to high earnings and managerial positions, yet finds no evidence for the assumption that particularly highly educated women are penalised by generous family policies or any other family policy profiles. On the one hand, Misra *et al.* (2012) find that leaves can have a positive effect on mothers' employment, hours and wages, but long leave show the opposite effect. On the other hand, widely accessible public childcare helped increase mothers wages. Because pay and occupational segregation highly overlap, we can expect similar results for vertical segregation. Consequently, we can assume that despite a vast amount of theoretical and empirical work, more research on occupational segregation and family policies is needed. What is more, because childcare and leave policies are highly diverse and numerous, but can have opposing effects, we need to clearly distinguish between the duration and pay of leaves, and also between particular childcare policies. Previous studies have aimed to aggregate policies for comparative purposes. However, because indices are based on assumptions made for the overall female workforce or for women's employment or pay but not for vertical segregation, theoretical explanations for the impact of family policies on vertical segregation need to be tested and indices questioned.

## 2.4 Limitations of previous studies and research questions

Although as identified above, there are several studies that examine the relationship between family policies and gender inequalities in the labour market, this section discusses four key limitations of the presented studies that need to be addressed. First of all, only a few studies so far have focused on the emergence of vertical segregation. Secondly, studies in general—both on vertical segregation, but also on other dimensions of gender inequalities—have used macro-level aggregate data mainly. Thirdly, to the author's knowledge no study focuses on highly-skilled women, namely those with tertiary education. Instead, the female workforce is largely treated as a homogeneous group. Fourthly, studies examining the impact of family policies on vertical segregation tend to apply indices or typologies in order to measure family policies. The following section addresses these shortcomings in greater detail.

### 2.4.1 Vertical segregation and macro versus micro level data

As seen in the previous sections, the link between family policies, on the one hand, and labour market participation rates and part-time rates, on the other hand, have been examined by numerous studies. While scholars argue whether welfare regimes can be associated with female employment rates or not, the general agreement is that family policies such as generous maternity leaves can be linked with the increase of female employment rates. However, as discussed in section 2.3, there is no straightforward connection between other family policies and occupational segregation. Consequently, we need to understand better how and whether family policies impact occupational segregation. For various reasons, occupational segregation needs to be measured differently than in the presented papers. This thesis argues that we need to focus on vertical segregation and also on micro-level data.

As discussed before, the gender pay gap is a result of both the types of jobs women tend to do and the level these jobs are situated within the organisational hierarchies (Burchell *et al.*, 2014). However, vertical and horizontal segregation are two quite different concepts

and therefore need to be distinguished when trying to decide on the key dependent variable. Horizontal segregation, for example, is unsuitable for a cross-national comparison because measurements focus too much on aggregate macro-level data and also, horizontal segregation and namely the gender-related choices for occupations are due to a number of factors including cultural factors, choices made during schooling etc., that we cannot fully take into account. Despite this, researchers so far have mostly focused on measuring horizontal segregation and the pay gap. The Duncan and Duncan Index of Dissimilarity (Duncan and Duncan, 1955) expresses the distribution of men and women in all occupations, whereas the Hakim Sex-Ratio calculates the sex-ratios within the single occupations and then compares these with the overall sex-ratio of the workforce. Despite few differences, the indices show similar patterns for cross-national variation in horizontal segregation (Hakim, 1992, p. 131). Burchell *et al.* (2014) express horizontal segregation in a similar way as presented in figure 2.6 and figure 2.7. Nevertheless, neither the Duncan and Duncan Index nor the Hakim sex-ratios seems suitable to capture occupational segregation as they use highly aggregated data with expected compositional effects, and apply arbitrary weighting. In addition, both indices rely heavily on occupational classification and the chosen base population. Findings based on horizontal segregation indices can be misleading and fail in representing gender inequalities as the example of Japan shows. Even though Japan's labour market is known for being male-dominated with high pay differentials, and both horizontal and vertical segregation (Matsuura, 1980; Nakanishi, 1983) the indices show low scores of occupational segregation. Therefore, vertical segregation can even occur if there are low levels of overall occupational segregation. Hakim (1992) argues that this is due to problems with occupational classifications and the level of aggregation in the data. Consequently, indices based on aggregated data fail to represent the heterogeneity of the society and cannot capture segregation.

Of the studies that examined vertical segregation, they measured it using macro-level data. Using aggregate macro-level can be problematic due to composition effects. This is because using aggregate data can mask effects of policies on individuals in the labour market. We need to be able to distinguish the pure effect of a worker's gender from other potential causes of not reaching top positions. Misra *et al.* (2012) suggest that due to the complex

relationship between single family policies, on the one hand, and family policies and individual-level factors, on the other, studies examining only macro-level data are limited as they fail to control for individual or job attributes. The authors therefore suggest examining both the impact of separate family policies and vertical segregation while controlling for individual-level attributes by applying hierarchical multilevel models.

Using individual-level data would allow the researcher to distinguish between occupational levels in much greater detail. This is particularly useful as this dissertation does not aim to answer what makes women choose one occupational level over the other, but rather what hinders women from reaching top positions. This is of crucial interest as top positions do not only represent status, but also power and earnings. When referring to women in top positions, this dissertation applies the concept of the "glass ceiling". The term glass ceiling here describes "a transparent barrier that kept women from rising above a certain level in corporations. It applies to women as a group who are kept from advancing higher because they are women" (Morrison *et al.* 1987, p. 13, as cited in Baxter and Wright, 2000, p.276). Thus, following Fernandez (1998) the glass ceiling relates to women's access to top occupational levels. As described by Cotter *et al.* (2001), other definitions of glass ceiling include levels of authority, positions in the corporate hierarchy and glass ceilings in earnings.

### 2.4.2 Focus on typologies and indices

Another limitation of previous studies is the way family policies are captured. Examining the hypothesis of the welfare state paradox, Mandel and Semyonov (2006) for example examine the impact of family policies on women's likelihood to reach lucrative managerial positions, managerial positions in general and female-typed occupations. Key independent variables here are the Welfare State Index, a summative index including maternity leave, publicly funded childcare for 0-6 year olds and public welfare sector as a

share of the total. Questioning the findings of Mandel and Semyonov (2006), Korpi *et al.* (2013) also examine the impact of family policies on managerial positions, the gender wage gap and women in corporate boards. However, in contrast to choosing a single dimensional index such as the welfare state index, they create family policy profiles. Here, they examine the impact of general, dual-earner or earner-carer policies on vertical segregation. As discussed in section 2.3, the relationship between family policies as captured by typologies and indices and gender labour market outcomes does not always correspond with the findings on the impact of single-family policy variables on gender labour market outcomes.

Summarizing the findings of Clarke (2015), we find that while family policy typologies combining several family policies do not necessarily correlate with gender labour market outcomes, family policies examined separately do seem to impact gender labour outcomes. Therefore, studies such as Mandel and Semyonov (2006) and Korpi *et al.* (2012) are limited as they fail to assess the highly complex relationship between the wide range of different family policies and gender labour market outcomes.

Lastly, scholars such as Chung (2017) suggest that we "need to be cautious about exactly what we are measuring when we examine family policy indicators, especially when using single or composite indicators" (Chung, 2017, p.16). The author examines how national-level family policies affect company-level schedule control. She finds the effect found for generous leave policies is different from what is found for generous public childcare provision. This study also provides another example of how different policies do not necessarily lead to the same results.

This thesis therefore does not only include single measurements on leave and childcare provisions, but also a whole range of indicators. Various measurements of paternal, parental, maternity, well-paid and unpaid leaves, childcare provisions and public spending are included. Thus, empirically this thesis aims to analyse the impact of family policies on

women's access to top position compared to men's and to clearly establish what policies significantly impact the gender gap in top positions.

### 2.4.3 Focus on overall female workforce vs highly skilled women

Lastly, a key assumption of the Welfare State Paradox is that family policies harden the glass ceiling. Korpi *et al.* (2013) disagree with this and state that particularly women with lower levels of education have benefitted from family policies. Mandel and Shalev (2009) also find that occupational segregation follows different patterns for highly educated women than for women with lower levels of education. Nieuwenhuis (2014) finds that family policies affect highly educated women differently than lesser educated women. This is also reflected by the discussion in section 2.2 that highlighted how employment rates for highly educated women had not changed much, whereas for women with lower levels of education it had increased substantially. Highly educated women are more likely to be employed, but the motherhood-employment gap seemed to be bigger. Consequently, and in contrast to previous studies, the sample of this thesis is limited to women with tertiary education only in order to exclude the possibility that family policies only decrease the relative number of women and men in top positions because actually they enabled workers with medium and low levels of education to join the labour market and thus reduce the relative share of highly educated workers. From a methodological point of view, narrowing down the sample to only tertiary-educated individuals allows us to avoid potential dilution effects by researching the possibility that a decline in top-positions for women is due to the overall increase of the female workforce—especially in the less lucrative jobs. By doing so, we exclude the possibility that women's career perspectives have only decreased because the overall size of the female workforce has increased and thus reduced the share of women in top position that have already been part of the workforce before.

Following the literature presented but also the limitations of previous research, this thesis aims to investigate the following research questions:

**Research Question 1: Does women's likelihood to be employed in a top position relative to men's vary across countries and if so, to what extent?**

Based on descriptive findings in section 2.2, we can see that women are disadvantaged in every developed economy in terms of pay, hours worked and the occurrence of part-time employment. Additionally, even using the aggregate macro-level definition of vertical segregation, we find that women across Europe are less likely to be in a top position compared to men. Similarly, even when using a new definition of the gender gap in terms of vertical segregation into top positions and even when other factors are controlled for. Thus, the following hypothesis **H1.1** is derived.

**Hypothesis H1.1 Women in Europe generally are less likely to reach top positions.**

In addition to the overall discrimination women face when aiming for top positions, we also need to understand to what extent the gender gap differs between countries. While we see that based on macro-level data women in Eastern European countries seem to be less disadvantaged than in Mediterranean countries, we cannot say that the variation between countries is actually significant. Therefore, this thesis aims to also test whether women's likelihood of reaching top positions is statistically significant – again having controlled for a number of other individual level factors. Based on previous studies and the descriptive figures we gathered in the previous section, the project comes to the following hypothesis **H1.2**.

**Hypothesis H1.2 The impact gender has on reaching top positions varies significantly across countries. /Women's likelihood to reach top positions varies significantly across countries.**

What is more, we do not know whether an increase in women's share in top positions is due to women's better access, and thus, more gender equality or whether this is simply due to the fact that more women have joined the labour market between 2000 and 2015 as discussed earlier. Because the absolute number of women participating in the labour market increased, the relative chance to reach top positions has increased as well and might be causing an improvement in terms of vertical segregation. Because we know from figure 2.3 that employment rates for highly educated women have declined slightly on average, especially in social-democratic and Mediterranean welfare states, whereas women from lower educational backgrounds generally are more likely in every country to be employed in 2015 than in 2000. Thus, we can say that while more women in general have entered the labour market, the share of highly educated women in the labour market has declined slightly.

Therefore, we need to distinguish clearly between educational backgrounds and hold the level of human capital constant. By looking only at highly educated women, the models aim to exclude the possibility that cross-national variations in the gender gap are due to different level of qualifications. Changes in vertical segregation particularly can be due to an actual change in the labour market that causes higher levels of gender equality and thus improves women's access to managerial positions in absolute terms. But changes can also be due to the fact that more women have joined the labour market in recent years, which influences their chances to access top positions. What is more, as shown in the previous section family policies do not necessarily have the same influence on women across different educational levels. In sum, this leads to hypothesis **H1.3**:

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**Hypothesis H1.3 Cross-national variation of the gender gap in to positions is different for highly educated women than the general female workforce, even after controlling for educational levels in the latter model.**

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To sum up, we need to examine drivers for cross-national variations in employment rates and occupational segregation in order to understand patterns. What is more, we need

to analyse why highly educated women are affected differently than women from lower educational backgrounds.

Following the literature reviewed in section 2.3, the second research question arising is:

**Research question 2: How do family policies at a national level affect tertiary educated women's likelihood to achieve top positions at the individual level relative to men's?**

From what has been gathered in section 2.3.1 based on previous literature, **H2.1** expects that generous maternity leave makes employers more reluctant to hire women, especially in top positions, as it discourages women from returning to work shortly after childbirth.

**Hypothesis H2.1: Long and generous maternity leave is associated with a wider gender gap.**

For the gender gap in top positions this means that women in countries with generous maternity leaves are less likely to reach top positions as they are discouraged from returning to work after childbirth quickly due financial incentives. This, in return, means for employers that a female worker poses the risk of longer career interruptions than a male colleague. First of all, we can expect that because women on generous maternity leaves are missing out on experience and training whilst on leave, this reduces their human capital and therefore lowers their chances to compete with men for top positions. Secondly, women in countries with generous maternity leaves are also more likely to face discrimination, i.e., motherhood penalties. They also may be less likely to be hired for positions from the start that could in the future help them to reach top positions or are less likely to be promoted as much as men.

**Hypothesis H2.2: Generous and long paternity leaves are associated with a smaller gender gap.**

On the other hand, this project expects that that generous paternity leave is linked with lower gender gaps in top positions. This is because paternity leave in contrast to maternity leave pushes men to be more involved in family responsibilities and thus the traditional division of labour between the spouses is softened. With men taking up more responsibilities, women are more likely to reconcile work and family, and thus, they are more likely to reach top positions. Additionally, it is expected to make employers less likely to discriminate against mothers if fathers also take time off work for childcare responsibilities (Nepomnyasch, Waldfogel, 2007).

**Hypothesis H2.3: Generous parental leave measured in compensation is associated with a wider gender gap.**

**H2.3** focuses on the link between parental leave and the gender gap. Because the minimum and maximum period for parental varies substantially between mothers and fathers, mothers still take up the majority of parental leave (Ray, Gornick and Schmitt, 2010). Thus, generous parental leave is expected to widen the gender gap in the same way as maternity leave. Therefore, employers are more reluctant to hire women.

**Hypothesis H2.4: Extensive publicly funded childcare and therefore expenditure on childcare indirectly is associated with a wider gender gap.**

**H2.4** addresses one of the key arguments of the Welfare State Paradox in that it questions the role of childcare. This hypothesis argues that extensive publicly funded childcare hinders women from reaching top positions as it correlates with a large public sector. Women are overrepresented in public sectors anyways and underrepresented in private sectors, unless controlled for as in the models for this thesis. Consequently, this discrepancy in the representation between public and private sector employment leads to women in the private sector having relatively lower chances to reach managerial positions than men. According to Mandel and Semyonov (2006), the negative impact of childcare on vertical segregation is due to the strong emphasis of the state on caretaking in the concerned

countries, which does not only encourage women to take time off but also to move into occupations that are more mother friendly and allowing them flexibility. As expenditure on childcare can be associated with high coverage of childcare, we can expect high levels of expenditure to also increase the gender gap.

**Hypothesis H2.5: Childcare allowances are associated with a wider gender gap.**

**H2.5** focuses on the impact financial incentives have on the division of labour. Both childcare allowances and tax allowances and deductions aim to support care at home and thus are likely to protect the traditional division of labour between the spouses. Consequently, we can expect the gender gap to be higher in countries with generous allowances.

**Hypothesis H2.6: Traditional family policies are associated with a wider gender gap.**

According to **H2.6,** in countries with policies supporting the traditional division of labour between the spouses, women are less likely to access top positions. In familiarised countries dependencies between family members are strengthened by reducing economic and social consequences of providing care.

As discussed in this Chapter, the impact of family policies on women's access to top positions is not straightforward. Thus, the question remains what else other than family policies can help explain cross-national variation of the gender gap. The next Chapter introduces literature that aims to solve this puzzle by examining the impact of labour market institutions such as unions and collective bargaining on women's access to top positions.

## Chapter 3: Labour market institutions and occupational gender segregation

The previous section highlighted how family policies can help explain gender labour market inequalities. In particular, the gender gap in employment rates, the occurrence of part-time employment and horizontal segregation can be explained largely by cross-national variation in societal norms and family policies. However, as established by Mandel and Semyonov (2006), Estevez-Abe (2005) and others, we cannot fully explain cross-national variation in vertical segregation of progressive welfare states such as Denmark lagging behind countries such as the United Kingdom or Latvia. Thus, the question remains, what can help us to understand the gender gap in managerial and high-status position other than family policies?

This Chapter introduces key literature linking labour market and cross-national variation in vertical segregation as labour market institutions. The literature review points out strengths and limitations of the literature and distinguishes between two theoretical approaches – one arguing that labour market institutions such as unions and collective bargaining help promote workers' interests and thus can help decrease the gender gap. Here however, scholars such as Häusermann and Schwander (2010) also discuss the potentially negative effect of strong unions on gender labour market inequalities as the core workforce represented by unions tends to be male and thus women are at risk of being outsiders. A second body of literature (Estevez-Abe *et al.*, 2011) focuses on the role of EPL and unemployment benefit generosity and skills specificity. The key argument here is that more regulated and protected labour markets with a strong focus on specific skills solidify the glass ceiling, as women are less likely to invest in specific skills and thus are less attractive to employers. The more protected workers are and the more difficult hiring and firing becomes, the more employers prefer hiring men over women as women pose higher risks to employers due to potential family responsibilities.

Due to the limited amount of literature available on vertical segregation, inequalities closely linked with gendered hierarchies such as the gender pay gap and the occurrence of part-time employment are included and it is highlighted how concepts are borrowed in order to understand vertical segregation. The reason for going beyond welfare regime and family policy and gender inequalities literature is that neither family policies nor welfare regime typology can explain cross-national variation in occupational segregation (see for example Estevez-Abe, 2006; Mandel and Semyonov, 2006). However, a growing body of literature suggests that it is not only family policies that are driving women's employment patterns, but other institutional factors pertaining to labour markets that can explain gendered patterns of labour market outcomes (see for example Dieckhoff *et al.*, 2015; Estevez-Abe *et al.*, 2009; Buchmann and Charles, 1995; Schaefer *et al.*, 2011). Employers' behaviour and labour market opportunities seem to be more important than the generosity of public policies. While vertical segregation has not been approached a lot from a labour market institution perspective, scholars have analysed the dynamics between labour market institutions and outcomes for women's employment, such as skill profiles or unions and the gender pay gap, employment opportunities and hours worked. Due to the interconnected nature of gender labour market inequalities (see Chapter 2.1), we need to apply these concepts in order to understand women's underrepresentation in managerial positions.

While there have been various studies on the impact of family policies on vertical segregation (see Chapter 2) and on the impact of labour market institutions on employment rates, part-time employment and the gender pay gap, only a few scholars have examined the dynamics between labour market institutions and vertical segregation. However, in the literature we can find two main arguments – one focusing on the importance of human capital and skill profiles and the other one focusing on the relevance of unions and collective bargaining.

The following section explains the theoretical concepts of key studies in the area of labour market institutions and gender inequalities. It aims to identify the key theoretical and empirical connections that have been made so far, highlighting how concepts can be

borrowed in order to explain vertical segregation. I have identified two main theoretical approaches in order to capture the impact of labour market institutions on gender inequality – one is a conflict approach of industrial relations following Korpi's Power Resource Theory and picking up the arguments made by Dieckhoff *et al.* (2015). The other one is based on Human Capital Theory and the Varieties of Capitalism (VoC) approach focusing on the role of labour market institutions in supporting certain skill profiles.

## 3.1 Conflict theory

This section discusses one side of the argument that is based on the Power Resource Theory (PRT) (see Korpi, 1974). It focuses on the importance of unions organizing workers' interests. According to PRT, welfare states are influenced by power that is mobilised by wage earners. This influence is exerted by political parties or interest organisations such as labour unions. Employees, according to the PRT, are the protagonists; employers are the antagonists or consenters to developments of welfare states. This is because unions help workers to work collectively. While scholars largely agree that men seem to benefit from strong unions, they disagree on the extent unions improve women's position within the labour market.

Focusing on conflicts between these groups and consequently on industrial relations, Schäfer *et al.* (2012) find that stronger unions contribute to a more evenly distributed occupational hierarchy. In other words, strong unions seems to help in reducing the amount of precarious low-wage jobs and thus increase women's access to medium-wage employment, which leads to less polarised labour markets. By reducing wage inequalities generally, strong unions reduce women's chances of falling into low-wage and low-skilled work. Consequently, strong unions promote gender-egalitarian distribution of wages and by doing so, should help to decrease vertical segregation. Schäfer's *et al.* (2012) findings go hand in hand with studies examining the gender wage gap, where strong unions were linked to smaller wage gaps. The logic behind this is as follows: Mandel and Semyonov (2005) argue that in countries with strong unions, wage bargaining is more centralized and coordinated

between social partners. Unions seek to decrease inter-industry and inter-firm wage differentials. By doing so, they automatically decrease the gender pay gap since women tend to be employed in low-wage occupations and benefit from the wage bargaining of strong unions. In particular, unions fight for minimum wages and a decrease of wage disparities and therefore aim to improve the situation of the lower tail of the working population. Generally speaking, Mandel and Semyonov (2005) state that wage bargaining in coordinated economies reduces overall wage inequality by both increasing the minimum pay levels and restricting wages at the top (p. 953). The stronger the unions, the more coordinated the economy. Wage bargaining is more centralized, income inequalities reduce and the smaller the gender pay gap becomes due to the accumulation of women in the lower tail of the working population. However, as argued by Bertola *et al.* (2007), while strong unions improve men's employment outcomes, they are potentially harmful for women due to the dualised nature of the labour market.

Labour market dualisation theories support the idea that the workforce is not equally represented by unions or covered under collective bargaining agreements. Building upon insider-outsider theory (see Blanchard and Summers, 1986, 1987; Lindbeck and Snower, 1988, 1989), Emmenegger *et al.* (2012) state that the labour market is divided between outsiders and insiders, with little mobility between the two. They define insiders as people with access to standard employment, who are unionized, in secure employment, protected by labour laws and have access to social security. Outsiders are either unemployed or working in atypical employment with lower levels of social protection coverage and limited political representation (Davidsson and Naczyk, 2009). Social protection for example includes employment protection and unemployment benefits. Palier and Thelen (2010) argue that CMEs with their high-skill equilibria, such as Germany and France with their relatively strong unions and centralized bargaining systems, have undergone a change in the most recent years. In order to adjust to a "more competitive international economic context" (ibid, p. 139), CMEs have experienced a dualisation of their workforce by protecting core highly skilled workers and therefore failing to cover all citizens in terms of employment protection or work contracts. Moreover, in these CMEs the outsider group is gendered, and women are overrepresented. Häusermann and Schwander (2010) argue that atypical employment is

gendered in many countries and that, especially in continental Europe, these new types of employment are the norm rather than the exception for women (see also, Esping-Andersen 1999).

According to theories on the segmentation of the labour market, the industrial sector that used to play the undisputed key role in wage negotiations for the whole workforce has lost its leading role when the industrial sector started adjusting its workforce as a response to crises in the 1970s and 1980s (Palier and Thelen, 2010). Companies reduced the size of their workforce and increased the productivity of the remaining workforce by encouraging internal flexibility and intensification of work. Therefore, lower paid jobs disappeared or were outsourced, and new types of (atypical) jobs emerged with more flexibility and less security: outsider jobs. For unions, this means that their power decreased due to the shrinking traditional core of the workforce that women were no longer a part of. This is due to the incentive of unions to protect the core workforce. In the course of wage or working condition bargaining, unions accept the emergence of outsiders such as women, low-skilled labour market entrants and older workers. The high restrictions on wages imposed by unions prevents firms from paying employees less than minimum wage. This leads to a decrease of low paid jobs. Employers are, however, not willing to pay higher wages for low-skilled, labour market entrants, older workers or women since they deem them to be less productive, resulting in either higher unemployment for these workforces, or these groups of workers being employed in non-standard employment contracts (Esping-Andersen and Regini, 2000). Consequently, the actions of unions that aim to protect the insiders have a negative impact on labour market outcomes for women (Häusermann and Schwander, 2010).

Bertola *et al.* (2007) also find that, for vertical segregation in the labour market, unions can have a negative effect. Analysing data from 17 OECD countries from 1960-96, the authors examine the impact of labour market institutions on the employment patterns of young people, women and the elderly. Labour market institutions here include wage-setting structures, employment protection and unemployment protection. They find that influential unions have no impact on women-men employment differentials. However, women seem to

be more likely than men to be unemployed when unions have a strong role. Bertola *et al.* (2007) suggest that strong unions assist women in joining the labour market. However, at the same time they cause wages to increase, which creates "high wage floors" that are less accessible for women. This increases vertical segregation because it pushes women into finding employment in unregulated sectors or the public sector.

Therefore, we can expect that if women are represented by unions in large numbers, then unions will try to address gender inequalities and discrimination. This could either be done by organising workers' interests to push for legislation that tackles inequalities, or by demanding family-centric policies. The European Trade Union Confederation, for example, in its Action Programme on Gender Equality 2016-2019 (ETUC, 2016) commits to specific actions in four key areas that address gender inequalities, one of them being "tackle the challenge of work-life balance" (2016, p. 4). Ways to address work-life conflicts according to ETUC are to "lobby for investment in childcare and social care, improvement in the pay and employment conditions for workers in these sectors for good quality public services" (2016, p. 6). Other means are to address women's underrepresentation in unions and companies' decision-making boards by, for example, organising meetings with female union leaders to share experiences and ideas.

However, Dieckhoff *et al.* (2015) challenge these assumptions and argue that the efforts of unions can have a different impact on the female workforce than on the male workforce. In their study, they examine the impact of labour market institutions on a range of employment statuses including employment, unemployment and inactivity, distinguishing between female and male workers. Comparing 18 European countries from 1992-2007, the authors find that stricter employment protection legislation has a positive impact on men's likelihood of being in permanent full-time employment. At the same time, strict EPL decreases occurrences of temporary and self-employment of men which is in line with Roman *et al.*'s (2011) finding that stricter EPL reduces the amount of precarious jobs and quasi self-employment that aims to reduce non-wage labour costs. Thus, Dieckhoff *et al.* (2015) suggest

that stricter EPL is beneficial to the male workforce as it increases permanent full-time employment, while at the same time it decreases self-employment.

Women's employment status, on the other hand, does not seem to be affected so much by a change in EPL. Stricter EPL does slightly reduce the risk of temporary employment and part-time jobs for women. However, it does not seem to have any impact on regular full-time employment – neither positively or negatively (Dieckhoff *et al.*, 2015).

Dieckhoff *et al.* (2015) empirically examine the relationship between the coordination and the strength of unions measured in collective bargaining coverage on the one hand and standard employment and unemployment on the other hand. They state that both the effects of strong unions on gender equality depend on the level of coordination. High levels of collective bargaining coverage (hereafter CBC), used here to represent the strength of unions in the country, have a positive impact on both men and women's employment (2015, p. 70). The authors find that collective bargaining coverage positively impacts the employment status for both men and women. In other words, their results show that influential unions do not push women out of permanent full-time employment for the sake of protecting the male core workforce. High collective bargaining coverage increases women's full-time employment rates and lower unemployment and part-time rates, particularly in countries with medium levels of coordination.

Thus, Dieckhoff *et al.* (2015) question, for example, labour market segmentation theories for assuming that because women tend to be employed in clearly female-dominated sectors, which tend to be less well represented by unions than typical male-dominated occupations. However, the authors argue that occupations cannot be clearly distinguished between outsiders and insiders. Consequently, the labour market is not as clearly dualised, and unions' work can be beneficial to both men and women. In fact, we find insiders and outsiders within same occupations, which shows that it is not occupation alone that decides whether someone is an outsider or insider, but quality of their employment. Hence, strong

unions do not necessarily cause employment loss for women or gendered dualisation since high levels of corporatist structures could also lead to more gender equality, as certain female-dominated occupations may benefit the same way from collective bargaining as male-dominated jobs. This idea goes back to the evidence found by Blau and Kahn (1995) that centralized bargaining structures reduce overall income inequality, including gender pay gaps.

These findings are in line with Dickens (2000), who argues that collective bargaining allows certain women to have a voice, therefore allows women's needs to be represented in wage bargaining processes or general tri-partite dialogues and therefore improves gender labour market outcomes. With Calmfors and Driffill's (1988) ideas on the hump-shape relationship between centralisation and real wages/ unemployment in mind, this seems logical. Calmfors and Driffill (1988) argue that strong unions in highly centralized economies have a positive effect on balancing out real wages versus unemployment. In decentralized economies, where there are more but weaker actors involved, unions only operate at the individual firm or plant level and have limited power since wage negotiation is not centralized at a national level. Therefore, their effect on real wages or unemployment is extremely limited and is effectively driven by the market. In medium centralized economies, unions are stronger, but less cooperative and less reasonable, pushing higher wages at the expense of unemployment. Logically, we can assume higher levels of disputes and therefore lower level of coordination in these cases, assuming that strong unions and firms clash. Higher levels of CBC in medium centralized economies lead to less coordination, which leads to less reasonable actions and more unemployment due to a lack of tri-partite dialogues. Following the assumption of Calmfors and Drifill (1988), in highly centralized or decentralized economies, unions are either strong enough to negotiate reasonably and therefore avoid massive disputes or they are so weak at the national level that there are basically no disputes. Consequently, for the average male worker, more coordination and stronger unions have a positive impact on employment, which not only Driffill and Calmfors (1988), but also Dieckhoff *et al.* (2015) also discovered.

The study mentioned earlier by Schäfer *et al.* (2012) finds supportive evidence for this hypothesis. They find that union density increases women's chances to access high status

occupations. It is not only union membership and density that seem to matter, but also the strength of coordination and collective bargaining.

However, key limitations of studies mentioned so far are that the majority of scholars, with the exception of Schäfer *et al.* (2012), examine the dynamics between labour market institutions and employment statuses such as employment rates, part-time employment and the pay gap. With Power Resource Theory and dualisation theories focusing mainly on workers in low-skilled low-wage occupations, they neglect the impact unions and employment protection legislation can have on employees in managerial occupations. Thus, assumptions and findings made by previous studies need to be revisited, and it must be examined whether these are valid for highly educated women and the gender gap in managerial positions.

## 3.2 Varieties of Capitalism and occupational segregation

According to the previous section, labour market outcomes are affected by how workers are organised in order to represent their interests and put employers under pressure. However, the second stream of literature highlights how gender inequalities can be the result of labour market institutions valuing specific skills more than general skills. The most notable comparative study here has been conducted by Estevez-Abe (2005) who argues that national skill profiles are the key driver for women's underrepresentation in managerial positions. In her comparative work on national skill profiles and occupational segregation, Estevez-Abe (2005) finds that in countries relying on firm-specific skills, women are even less likely to become managers than in countries with rather general skill profiles. Her theoretical framework is based on the Varieties of Capitalism approach (VoC) by Hall and Soskice (2001), a cross-national typology comparing national political economies according to their labour market institutions and Comparative Institutional Advantages.

These result from interconnected institutional complementarities such as labour relations and corporate governance, labour relations and the national training system, corporate governance and inter-firm relations (Hancké *et al.*, 2007: p.5). In contrast to the PRT, the VoC focuses on the employers in the institutional setting of political economies. In other words, various labour market and welfare state institutions are not developed in isolation, but as a package of arrangements to support a certain skill formation and employment strategy (Hall and Soskice, 2001).

Taking the ideas of the Human Capital Theory further, Estevez-Abe (2005, 2008) argues that there is an association between women's career/employment and comparative institutional advantages. She examines not only different levels of skills within the labour market, but types of skills and explores their impact on gender segregation (see Estevez-Abe, 2005; Estevez-Abe, 2007; Estevez-Abe, Iversen, and Hall and Soskice, 2001). In doing so, Estevez-Abe *et al.* (2001) identifies three different types of skills within labour markets: general skills, industry-specific skills and firm-specific skills. These skills crucially differ in their "portability across employers, the locus of training, and atrophy rate" (Estevez-Abe, 2007, p.70). These observations lead to the following: because industry-specific and general skills are not only valuable inside the one single company, but also of use outside this firm, they show a high level of portability since other employers will appreciate them. In contrast to that, firm-specific skills are only acknowledged by and valuable for the current employer. Furthermore, they are mostly provided via on-the-job training and therefore usually not certified. For skill investment, this means that workers take on a high risk when training in specialised skills that can be only used for a specific firm. Therefore, if employers want workers to take up skill investments, they need to organise and fund the training in order to encourage workers to acquire specific skills. This provides justifications as to why employers would support stronger employment protection legislation as this also provides workers with protective mechanisms to maintain their job, rather than be against it.

In contrast to that, general and industry-specific skills are mostly provided via off-the-job training or school-based education taking place at schools or vocational schools. If skills

training is undertaken in the context of an apprenticeship, skills are made certifiable and acceptable in a wide range of areas (Estevez-Abe, 2007). The atrophy rate – the third distinctive feature – measures how far skills can become outdated and be overhauled. That can happen in rapidly growing sectors such as engineering or in managerial jobs. Service skills, on the other hand, show a low tendency of becoming obsolete. Consequently, employers relying on firm-specific skills are more likely to promote employment protection in order to bind workers to them and establish long-term working relationships and to protect skill investments. In CMEs with managers that value sector specific skills, unemployment benefits will be developed so as to protect skill investments from devaluation in times of unemployment. In other words, if unemployment benefits are generous, workers are not forced to accept a job that does not meet their level of qualification and skills. Thus, unemployment benefits prevent skills from being downgraded and allow workers to search for adequate employment. This also encourages workers to invest into sector specific skills in the first place as these do not narrow down potential employment opportunities, and are more likely to pay off.

In liberal economies with a focus on general skills, however, employers would not be interested in limiting labour market flexibility, as there is no need for skill protection via social protection. In other words, whereas LMEs foster general skills with high levels of portability, low atrophy rates and on-the-job training, the high level of portability and atrophy increase the flexibility of workers on the labour market and work as an insurance against unemployment in case of recession since general skills are not limited to one industrial sector. CMEs, with their high levels of EPL and the incentive to protect core workers and their skills, have developed specific skill profiles on a high level with incremental rather than radical innovations at the expense of flexibility and mobility.

These three features – the atrophy rate, the portability across employers and the locus of training – have a different impact on women and men (Estevez-Abe, 2005). Firstly, women are more likely to invest in general skills due to their higher portability. Estevez-Abe (2005) argues that women take the risk of potential career interruptions due to family

responsibilities- i.e., childbirth and child rearing, and thus are less likely to invest in firm-specific skills, tending to invest in sector or general skills that allow them to find a job more easily after returning from a break. Even if women would like to invest in firm-specific skills, due to the discriminatory view of employers, women may not be able to access such skills training. Apprenticeship-based vocational education seems to be particularly problematic for women, which explains why we find a high share of men in apprenticeship-based occupations (Estevez-Abe, 2005). The reason for this is because employers tend to hire men over women, seeing the apprenticeship as a long-term investment and aiming to make this investment pay off as much as possible, and women are perceived as more likely to leave (albeit temporarily).

Secondly, in countries with a long tradition of specific skill profiles, strong employment protection aims to value the accumulation of human capital more than liberal market economies with their general skill profiles. Due to career interruptions, this emphasis on human capital accumulation makes the gap between men and women even more detrimental, and leads to an underrepresentation of women in senior, managerial positions.

Thirdly, strong employment protection can make hiring and firing of workers more costly and less flexible. Thus, faced with higher costs, employers prefer men to women as the latter impose a higher risk of career interruptions. If a country introduces generous family policies – 'long leaves' - in addition to employment protection, the risk for employers is even higher when hiring a woman because of the increased likelihood of longer breaks. Therefore, Estevez-Abe (2005) argues, not only does strong employment protection lead to more discrimination against women and an increase of vertical segregation, but it also causes women to leave the private sector and join the public sector as an alternative. Public sector employment is described as more "sheltered", in that it protects women and disadvantaged groups from exploitation (see Lewin-Epstein and Semyonov, 1994). Historically, the governments understand the public sector as serving as an example of employment conditions for the private sector, with regard to wages and representation of disadvantaged groups such as ethnic minorities and women (Llorens, 2007; Goldfarb and Heywood 1982; Krislov 1967; Miller 1996; Mosher, 1982). Consequently, women are highly overrepresented

in the public sector. This then results into occupational gender segregation between the private and public sector, causing the private sector to become even more male-dominated over time.

To sum up, according to Estevez-Abe (2005), EPL and skill investments are institutional complementarities. Employers in coordinated economies have higher incentives to hire skilled workers due to stricter EPL because EPL encourages both employers and employees to build up long-term employment relationships with high job security that pays off in a highly specialised skilled workforce. However, because women face different risks and living situations than men, they are more likely to interrupt their careers. Although it could be assumed that high EPL works as a shelter for women interrupting their career for childbearing and rearing, Estevez-Abe (2005) finds that EPL can actually harm women's employment situations. She argues that high employment protection "is insufficient to safeguard women's investments in specific skills" (2005, p.192). While strong employment protections on the one hand minimize the risk for workers to invest in specific skills, the same policies foster the discrimination of women on the other hand, because women face different risks than men such as pregnancy and child-rearing responsibilities; they are more likely to interrupt their employment relationship. Even if the employer does not have to account for paid leave, they have to deal with the "'temporary manpower slack' caused by workers taking leave. Moreover, when absences are long - a year or longer - employers also need to manage the smooth reintegration of workers when they return" (Estevez-Abe, 2006: 152). In other words, employers are more likely to hire men because the risk of losing the investment in training is lower as men are not expected to quit (Estevez-Abe, 2007) and costs due to high EPL are less imposing. For men in CMEs, EPL and specific skills are institutional complementarities to help build up a long-term work relationship between employers and employees and to protect their skill investments. "However, whereas strong employment protection facilitates male investments in specific human capital, it exacerbates employer discrimination against women" (Mandel and Shalev, 2009, p. 165; Estevez-Abe, 2005). In CMEs, employers cannot lay-off new mothers; in addition they also find it harder to replace them temporarily due to the specificity of the skills and the strict EPL. Consequently, in countries with specific skill profiles, social protection such as EPL and family policies can lead to an increase of employer

discrimination against women (Mandel and Shalev, 2009, p. 166). Estevez-Abe (2005) supports this claim by arguing that the underrepresentation of women in managerial positions is linked to strict EPL and skill specificity that does not only discourage women from investing in human capital but also discourages employers from hiring women who are perceived to be more likely to interrupt their career, thus skill investments in women are more risky.

Despite this argument of EPL being problematic for women, Dieckhoff *et al.* (2015) find no empirically significant impact of EPL on women's employment. Examining the relationship between the coordination and the strength of unions measured in collective bargaining coverage on the one hand and standard employment and unemployment on the other hand, they find no evidence to support Estevez-Abe's arguments. While men clearly benefit from strong employment protection, women do not, since the impact of stricter EPL on female employment is either marginal or not significant at all. In contrast to that stands Esping-Andersen's (1999) argument that high EPL shelters those who are in employment and therefore strengthens the position of insiders. Esping-Andersen argues that women and young people, being outsiders, are therefore the victims of strong EPL rigidities, and the association between female unemployment and EPL is statistically significantly positive (Esping-Andersen, 1999, p. 137). These findings challenge labour market segmentation theories that deem women to be the outsiders due to their discontinuous careers and the resulting job discrimination. On the other hand, the findings also disagree with the assumption that protective institutions help women to stay in their jobs and have careers. Linking industrial relations with gender labour market inequality via strong EPL and consequently higher labour (turnover) costs does not seem to be significant as there seems to be more involved in the process of discrimination of employers against women here.

## 3.3 Summary and research questions

In summary, scholars have found evidence for both theories – the importance of strong unions and collective bargaining on women's employment and the impact of skill profiles and EPL on gender inequalities. With regard to the main research question of this thesis – the impact of family policies and labour market institutions on vertical segregation – however, we face several problems and limitations when examining these studies: First of all, the majority of studies choose employment rates, unemployment or part-time occurrence as the dependent variable. Some studies examine the gender pay gap. But only few studies such as by Schäfer *et al.* (2012) and Estevez-Abe (2006) examine how labour market institutions affect women's position in the occupational hierarchy by, for example, analysing women's underrepresentation in managerial positions. What is more, among these few studies on vertical segregation, but even when examining other gender labour market inequalities, the empirical findings are rather mixed: First of all, scholars have been applying mainly aggregated data focusing on macro-level data only. In addition to that, the dynamics of institutions that are all interrelated and nested within each other has methodologically not been taken into account. Additionally, the key study undertaken by Estevez-Abe (2005) shows several limitations. Data used, especially on the share of vocational training and education to measure skill profiles, is outdated, and vertical segregation as measured by women in managerial positions seems rigid and neglects to include women in high-status professional occupations. Defining the share of female managers at the macro-level thus does not only neglect potential composition effects, but also narrows down the sample without justifying this. Following Estevez-Abe's key argument of skill profiles, we also need to include women in highly professionalised jobs that require the accumulation of human capital, and thus investment in skills. Furthermore, not only employment protection serves as a tool to protect skills investments, but also the generosity of unemployment protection (Estevez-Abe *et al.*, 2001). What is needed is a holistic approach capturing the impact of unemployment and employment protection on highly professionalised women holding continuing public sector employment. Consequently, the following research question needs to be examined:

**Research Question 3: What else, other than family policies affect women's likelihood to achieve top positions at the individual level relative to men's?**

More specifically, we need to understand how exactly institutional complementarities impact highly educated women. We know from the literature that in countries with representative unions *as measured by high union density) men seem to be more likely to reach top positions than in countries with fragmented unions. While some scholars argue that women are overrepresented among outsiders and crowded out by strong unions that only represent men (Schwander and Häusermann, 2010), others (Dieckhoff *et al.*, 2015) argue that unions are beneficial for female and male workers as they reduce overall inequalities in the labour market. Because this thesis particularly focuses on highly educated individuals and the gender gap in managerial positions, it could be assumed that labour market dualisation is not a key concern for the highly educated workforce. However, as argued by Häusermann and Kurer (2014) it is particularly women that form the group of "high-skilled outsiders" and therefore a lack of union representation can be expected to be detrimental for highly educated women as well as for women in low skilled jobs. Thus, the following hypothesis is:

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**Hypothesis H3.1 Strong unions and wider collective bargaining coverage is associated with a smaller gender gap.**

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Strong unions representing only the core workforce seem to have a detrimental impact on the outsider workforce by further increasing labour market inequalities. If unions are strong – as indicated by collective bargaining coverage – but do not represent the overall workforce, we can expect the gender gap to be higher. Therefore, the next hypothesis is:

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**Hypothesis H3.2 The gender gap is expected to be higher in countries where unions are strong but only represent a small share of the workforce. High union density combined with lower collective bargaining coverage is associated with a wider gender gap, especially if women are not represented.**

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Moving onto the second part of the literature presented, which is focusing on the impact of skill specificity and social protection on occupational segregation, we need to examine how labour market institutions affect human capital and how this influences both employers' and employees' decisions. Here, the key theory is centred around skill accumulation and the protection of skills. As argued by Estevez-Abe (2005, 2007), we can assume that countries with specific skill profiles value firm-specific skills. From an employee's perspective, the investment in specific skills is risky if career interruptions are likely. This is because specific skills change rapidly and do not allow for long career interruptions. Secondly, the training of skills is gender-biased as argued by Estevez-Abe (2005) and discourages women from taking specific skills up. Lastly, the portability of firm-specific skills is low between employers and thus opposes the risk of unemployment. Because women are more likely to interrupt their career for example for caring responsibilities or childbirth, Estevez-Abe (2005) assumes women choose occupations that allow them to opt out and come back easily. What is more, from an employer's perspective, the investment in firm-specific skills only pays off if employment relationships are long and the employee can be tied to the company. Thus, in countries with specific skill profiles, employers might prefer a male employee over a female employee who poses a risk of career interruptions or might not return at all after childbirth. Thus, we need to test the following hypothesis:

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**Hypothesis H3.3:** A focus on firm specific skill is associated with a wider gender gap.

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What is more, skill investments and social protection such as employment protection legislation can be seen as institutional complementarities. Employment protection aims to reduce the risk of employees to invest into their skills. Thus, employment protection makes it harder for the employer to lay off workers, which is why employers prefer hiring men in the first place due to the higher risk of career interruptions of female workers. Women are disadvantaged as they are less likely to be hired, and less likely to accumulate experience and human capital despite having the relevant qualifications. Consequently, the next hypothesis is:

**Hypothesis H3.4: Strict employment protection legislation or specific skill profiles are associated with a wider gender gap in managerial positions.**

Unemployment benefit generosity and skill profiles can also be seen as institutional complementarities. Unemployment protection serves as a tool to protect the value of skills in the case of unemployment. In countries with sector specific skills that require specialisation but are portable within a sector, generous unemployment benefits allow workers to look for a new job matching their skills and qualifications. Thus, generous unemployment protection encourages workers to invest in occupational skills that are easily transferable, but more specific than general skills.

Generous unemployment benefits however – as a second indicator for social protection – lower the risk of investments in specific skills and encourage employees to invest in more portable sector specific skills. We can therefore expect that in countries with generous unemployment benefits, women are more likely to invest in sector specific skills, which will then increase women's likelihood of obtaining top positions. Thus, the final hypothesis is:

**Hypothesis H3.5: Generous unemployment benefits are associated with a smaller gender gap.**

## Chapter 4: Data and Methodology

As summarized in the previous Chapters, studies have shown how family policies and labour market institutions impact cross-national variation of gender inequalities in the labour market. However, there are several shortcomings in previous approaches: first of all, scholars so far have largely neglected the importance of vertical segregation, and mainly focused on employment patterns, the occurrence of part-time work, unemployment and the gender pay gap. However, vertical segregation and the gender gap among managerial and powerful position is the key driver for pay differentials. Thus, we need a comparative study examining the impact of family policies and labour market institutions on the gender gap in managerial positions. Secondly, the majority of studies use aggregate macro-level data only, which is potentially problematic due to three reasons. Using aggregate data, we cannot control for individual-level characteristics that can have a large impact on women's and men's access to top positions. Secondly, the definition for top positions is rigid, and using for example simply women's share among managerial position's does not allow specifying those occupations that need to be excluded or included such as for example highly professional positions. Thirdly, the majority of studies use either highly aggregate typologies or only few variables. This thesis however examines family policies separately.

Consequently, from a methodological perspective, this thesis aims to investigate the impact of family policies and labour market institutions on the gender gap in top positions. Here, top positions are defined as managerial and highly professional positions measured at the individual-level, which allows the author to control for other individual-level and job characteristics. Independent variables are measured at the macro-level by using both summative indices and single variables for family policies and labour market institutions. Because both individual and macro-level variables are used, this thesis therefore suggests using multilevel modelling (see Hox, 2002).

Thus, this thesis examines three main aspects: the cross-national variation of women's share in top positions relative to men's – in other words, the gender gap in top positions; the

association between family policies and women in top positions; and thirdly, the relationship between labour market institutions and women in managerial positions. Thus, the key dependent variable used in this thesis is women's likelihood of reaching top positions relative to men's, which is operationalised by being in a managerial/ professional occupation. The year and sample of the analysis are European countries in the year 2010. Thus, the overall research strategy is to analyse the quantitative relationship between national level variables and individual labour market position's using multilevel analysis (see Hox, 2002). Here, 25 variables for family policies are included – measuring individual policies and composite indices, and 8 variables measuring labour market institutions – again both measuring single policy area and composite indices. These serve as independent variables and are described as context-level variables throughout the thesis.

The method of analysis is multilevel modelling (MLM), as for various reasons this thesis investigates whether context and national policies matter when examining variation between individuals in reaching top positions. In general, MLM examines "relations between variables measured at different levels of the multilevel data structure" (Hox, 2002, p. viii). Multilevel analysis enables us to examine data that is "nested" within each other, and therefore violates the independence assumption statistical analyses such as ANOVA and ordinary least-squares (OLS) require (Peugh, 2010, p. 86). In this thesis with countries being the level-2 variable and individuals being our level-1, we find variation in the relative position of women between countries. This justifies the multilevel modelling approach (for a detailed discussion see Chapter 6).

Regarding the independent variables, this thesis follows a more holistic approach than previous papers and therefore includes both summative indices and single variables, particularly in order to answer the second research question on how family policies affect vertical segregation. In contrast to scholars such as Mandel and Semyonov (2006) and Korpi *et al.* (2013), this thesis uses a wide range of family policies. This is because as discussed in the literature review in Chapter 3, family policy typologies heavily rely on the assumption that countries within the same group follow similar patterns. Using typologies does not allow us

to distinguish between the impacts of single policies. Furthermore, empirical findings are controversial and while some scholars find that certain family policies affect occupational segregation negatively, others question this paradox. Thus, grouping policies together is problematic, as one element of the index might have a reverse effect compared to another policy. The wide range of policy indicators also allows us to disaggregate typologies in order to identify specific drivers and to check the validity of these typologies when compared with single indicators.

With regards to the third research question – the impact on labour market institutions on the gender gap in top positions, this thesis uses both single variables and indices. Based on the literature presented in Chapter 3, this thesis includes measures for union strength and representation, but also for employment and unemployment protection and skill specificity. Following Estevez-Abe *et al.* (2001), the models for example include three indices measuring skills and social protection, namely employment protection legislation, unemployment benefit generosity and intensity of vocational training and education. In addition to this, the models also include four indicators measuring institutional labour market characteristics, namely union density, women's union membership and density, and collective bargaining coverage. This approach again is supposed to clearly distinguish the impact of single variables on women's likelihood to reach top positions, but also to test two different theoretical approaches in understanding labour market institutions against each other – corporatist and Gendered VoC.

The analysis of the dependent variable, but also of the relationship between the family policy and labour market indicators, is done through a two-level regression model taking into account the nested data structure of individuals embedded in countries (Hox, 2002). In other words, first of all this thesis examines the dependent variable – the gender gap in top positions, across 28 European countries using individual-level data and controlling for numerous individual and job-level characteristics. This first part of the analysis is conducted using random intercept and random slope models, in order to understand how first of all individual's access to top positions varies across countries, taking into account control

variables. Furthermore, assessing whether or not gender has a statistically significant impact on an individual's chance to obtain a top position. Then, random slope models are introduced in order to see whether gender gap – women's access to top positions relative to men's, varies between countries. In other words, random slope models allow us not only to see how much individuals' access to top positions varies across countries, but more importantly how women's access, relative to men's, varies across countries with gender being the key dependent variable in the models. Basically, while random intercept models show us whether across 28 countries gender has a positive or negative impact on access to managerial positions, random slope models allow us to see whether the impact of gender varies across countries, or whether women are equally advantaged or disadvantaged in every country having controlled for individual-level variables. While the cross-national variation of women's share in top-positions is discussed comparing random intercept and random slope models, the latter models focus on the cross-national variance in women's relative position.

In a second step, the analysis adds cross-level interaction terms to the random slope models, aiming to explain why the gender gap varies between countries. Here, the explanatory cross-level interaction terms stem from the national and thus the context level. All context level variables are discussed in Chapter 2 and include a range of family policies and labour market institutions. Because data on the explanatory context-level variables is not available for every country, the number of countries in the analysis varies. Thus, for each random slope model with cross-level interaction terms, the empty model and random intercept models are rerun for the purpose of comparison. This is because the overall aim of the analysis is to examine whether family policies or labour market institutions can help explain not why individuals' access to top positions varies across countries, but why the gender gap varies. In other words, can family policies and labour market institutions help us to understand why women are underrepresented more in some countries than in others?

Before running the analysis, the following Chapter introduces both the data and the method used in greater detail. Section 3.1. starts with the description of the data, its size and sample by clarifying the countries and year covered for both the dependent and independent variables. Section 3.2. outlines the dependent variable – that is, the measurement of women's chances to reach top positions and thus the dependent variable, while section's 3.3. and 3.4.

focus on national context variables, namely family policies, as well as the indicators for labour market institutions and control variables covered. Lastly, section 3.5. explains multilevel modelling chosen for the analyses of the project, and presents the specific models and research design.

## 4.1 Data sources – an overview

The following Chapter provides information about the data used for this thesis, and summarises key decisions made regarding the samples used in the analysis – namely what countries and years to include in the analysis.

### 4.1.1 Individual-level data

Due to the multilevel approach of this thesis, several datasets are used for the analysis. For the dependent variable – the gender gap in top positions, the fifth wave of the European Working Conditions Survey (EWCS) is applied. The EWCS is a survey carried out by Eurofound every five years, interviewing both employees and self-employed people on their working and employment conditions. This fifth wave includes data from 44,000 workers from 34 European countries. The interviews were collected in 2010 and besides EU27 countries also Norway, Croatia, the former Yugoslav Republic of Macedonia, Turkey, Albania, Montenegro and Kosovo are included. During this time, about 216 million people were employed in EU27 countries, which serves as the main reference area of the survey. Thus, figures from the EWCS are based on a representative sample of European workers, but not on the whole population and serve as estimates (Eurofound, 2012). Before explaining the reasons for selecting the EWCS, the data sources for the independent variables are to be explained first.

**Sample**

As a key contribution, the dependent variable is not only limited to vertical segregation and individual-level data, but in this thesis, the sample is also limited to individuals with tertiary education only. The importance of class when examining the structure of gender inequalities in the labour market, but also when examining the association mainly between family policies and occupational segregation, has been overlooked in previous studies, as discussed in Chapter 3.2 and pointed out by Korpi *et al.* (2013). The authors argue that "while major negative family policy effects for women with tertiary education are difficult to find in countries with well-developed policies supporting women's employment and work-family reconciliation, family policies clearly differ in the extent to which they improve opportunities for women without university education" (p.1). They state that we need to look at women without a university degree differently since the female employment rate is lower for them then for well-educated women. This is due to different family policies impacting higher-paid female professionals differently than lower-earning women.

From a methodological point of view, narrowing down the sample to only tertiary-educated individuals allows us to avoid potential dilution effects, by researching the possibility that a decline in top-positions for women is due to the overall increase of the female workforce – especially in the less lucrative jobs. By doing so, we exclude the possibility that women's career perspectives have only decreased because the overall size of the female workforce has increased, and thus reduced the share of women in top position that have already been part of the workforce before. While the number of highly educated women in the labour market stayed constant, more women with lower levels of education have joined the labour market. However, highly educated women are still more likely to be working. Thus, both groups reacted differently to external factors and need to be examined separately. This also becomes clear when comparing the share of highly educated women among managers/ professionals with women in top positions without tertiary education as discussed in Chapter 3.

### 4.1.2 Family Policy data

Data on family policies stems largely from the Multilinks project and its online database for social policy indicators. While for the purpose of this thesis only family policy indicators are of interest, the overall aim of Multilinks is to examine how social context affects social integration, well-being and intergenerational solidarity in Europe. Multilinks collects data on 30 European countries between the years of 2004 and 2009, and indicators range from childcare, education, family benefits, pensions, long-term care and legal obligations to support (Keck and Saraceno, 2012). Data for the family policy typology developed by Lohmann and Zagel (2015) also stems from the Multilinks database.

In addition to the Multilinks database, this thesis also uses data on family policies from Eurostat, more specifically from the EU-SILC project. EU-SILC was launched in 2003, and data first was only collected for 12 EU-15 member states: Estonia, Norway and Iceland. From 2005 onwards, all EU-25 member states including Norway and Iceland participated in the EU-SILC survey. In 2006, Bulgaria, Romania, Turkey and Switzerland joined and Croatia in 2010. EU-SILC is based on a sample of the population and minimum effective sample sizes are defined. While for EU15 member states, the sample size for cross-sectional data needs to cover 156,000 individuals living in 80,000 private households (3250 for Luxembourg and 8250 for Denmark). For the 10 countries that joined in 2004, the minimum effective sample size is 95,000 individuals living in 41,000 private household's. Data is collected via the telephone, face-to-face interviews, computer- or paper-assisted personal interviews and other methods (Eurostat, 2015). Data stems from 2009 in order to take a lag effect into account.

Lastly, family policy indicators also stem from the OECD Family Database. This particular database consists of data from national and international databases within the OECD and external organisations. It covers 70 indicators ranging from data on the structure of families, labour market position of families, public policies for families and children, and

child outcomes. Data for 2009 is available for up to 35 countries from the EU and/or OECD including 22 European states.

### 4.1.3 Labour market institutions data

With regards to indicators for labour market institutions, data stems from four different comparative databases. One is the Database on Institutional Characteristics of Trade Unions- Wage Setting, State Intervention and Social Pacts ICTWSS. It was collected in 34 countries between 1960 and 2012 and covers all EU and OECD members (Visser, 2016). Data stems from various national sources and comparative studies such as Pochet and Fajertag (2000) and Pochet, Keune and Natali (2010). As well as the Industrial Relations in Europe reports of the European Commission (2000, 2002, 2004, 2006, 2008, 2010, and 2012) and publications of the European Social and Economic Committee, the European Foundation for the Improvement of Living and Working Conditions, and the European Industrial Relations Observatory (EIRO).

Data also stems from the Comparative Welfare Entitlements Dataset, which provides macro-level data on institutional features of social insurance programs in 33 countries. Another comparative database used is the UNESCO Institute for Statistics data. This database covers up to 157 countries and data stems from international sources such as organisations like the OECD and Eurostat, and national sources.

Lastly, the OECD database for employment indicators is used as a source, which like the Family Database includes data for 35 OECD member states including a large amount of European countries. Employment indicators stem from international and national organisations and countries, and also include advice from country experts.

## 4.2. Measuring top occupations – data and sample

As argued in Chapters 2 and 3, previous studies linking gender labour market inequalities with family policies and labour market institutions, have focused firstly on aggregate data on the macro-level indicators, such as employment rates, and secondly on women of all educational backgrounds. In contrast to employment rates, vertical segregation cannot be explained by prevailing welfare regime typologies, and has been widely neglected by labour market researchers for the sake of the pay gap. Vertical segregation in this paper is examined by comparing women's likelihood to be in managerial and senior professional occupations relative to men's.

By using this different definition of vertical segregation based on individual-level data and individuals with tertiary education only, this thesis therefore takes a different methodological approach than previous studies. The following section summarises how vertical segregation is measured. Then, the rationale behind using individual-level data over aggregate macro-level data is explained in greater detail in section 4.2. For clarification, this thesis expands the regular definition of managerial positions by adding senior professional occupations. Whilst the rationale for this will be explained below, for the reader, the occupations included are mentioned at this point.

**Managerial occupations** include:

- Chief Executives, Senior Officials and Legislators;
- Administrative and Commercial Managers;
- Sales, Marketing and Development Managers;
- Hospitality, Retail and Other Services Managers

**Senior professional and managerial positions** include the listed occupations above, as well as:

- Science and Engineering Professionals;
- Health Professionals (excluding Nursing and Midwifery Professionals and others health professionals);
- Teaching Professionals (only including Higher Education Teachers);
- Business and Administration Professionals;
- Legal, Social and Cultural Professionals

Examining vertical occupational inequalities, two issues need to be addressed: firstly, the use of either macro- or individual-level data and secondly, observing the distribution of women across occupational levels or more specifically women's access to top positions in the labour market relative to men's. This dissertation examines the latter – women's access to high-status occupations (see Schaefer *et al.*, 2011), often referred to as the glass ceiling (see for example Baxter and Wright, 2000; Fernandez, 1998; Cotter *et al.* 2001) using individual-level data.

Using individual-level data also allows the researcher to distinguish between occupational levels. This is particularly useful as this thesis does not aim to answer what makes women choose one occupational level over the other, but rather what hinders women from reaching top positions compared to the chances for men. This is of crucial interest, as top positions do not only represent status, but also power and earnings. When referring to women in top positions, this thesis applies the concept of the "glass ceiling"; as described by Cotter *et al.* (2001), this term refers to gendered differences in terms of levels of authority and positions in the corporate hierarchy.

From the European Working Conditions Survey 2010, the dependent variable derived from the variable measuring respondents' is occupation levels. This variable follows the International Standard Classification of Occupations (ISCO-08) by the International Labour Organisation (ILO). ISCO-08 is preferred over the older definition ISCO-88 because ISCO-08 distinguishes general managers and corporate managers in greater details by dividing them

into 12 administrative and commercial managers; 13 Production and Specialised Services Managers; 14 Hospitality, Retail and Other Services Managers. Secondly, supervisory occupations are now classified following the nature of work more closely, in order to highlight potential differences between work done by supervisors on the one hand and supervised workers on the other hand (ILO, 2012). According to ISCO-08, jobs across different establishments, industries and countries are hereby grouped according to the nature of the work in a comparable framework. At it's most aggregated level, ISCO-08 distinguished between:

**Table 4.1 ISCO-08 major groups**

| ISCO-08 at the most aggregate level |
|---|
| 1. Managers |
| 2. Professionals |
| 3. Technicians and Associate Professionals |
| 4. Clerical Support Workers |
| 5. Services and Sales Workers |
| 6. Skilled Agricultural, Forestry and Fishery Workers |
| 7. Craft and Related Trades Workers |
| 8. Plant and Machine Operators and Assemblers |
| 9. Elementary Occupations |
| 1. Armed Forces Occupations |

Source: ILO, 2012

As highlighted previously, this thesis aims to investigate the gender gap in top positions, or in other words women's relative likelihood to reach top positions compared to men's. In order to capture hierarchies between the occupational groups, we need to look closely at the composition of the so-called 1-digit ISCO groups and focus here mainly on the first two groups – managers and professionals, as they include the jobs requiring the highest skill and therefore qualification levels (ILO, 2012). Managers at 3-digit disaggregated level include the following occupations:

**Table 4.2 ISCO 3-digit disaggregation of major group managers**

| ISCO-08 code and title |
|---|
| **11 Chief Executives, Senior Officials and Legislators** |
| 111 Legislators and Senior Officials |
| 112 Managing Directors and Chief Executives |
| **12 Administrative and Commercial Managers** |
| 121 Business Services and Administration Managers |
| 122 Sales, Marketing and Development Managers |
| **13 Production and Specialised Service Managers** |
| 131 Production Managers in Agriculture, Forestry and Fisheries |
| 132 Manufacturing, Mining, Construction and Distribution Managers |
| 133 Information and Communications Technology Services Managers |
| 134 Professional Services Managers |
| **14 Hospitality, Retail and Other Services Managers** |
| 141 Hotel and Restaurant Managers |

As mentioned earlier, ISCO-08 in contrast to ISCO-88 focuses more on the nature of work in order to highlight potential differences between work done by supervisors on the one hand, and supervised workers on the other hand (ILO, 2012). Therefore, employees with supervisory duties that distinguish them clearly are included in the major group with managers in the following areas: Manufacturing, construction, mining, retail, cleaning and housekeeping, farming and administration. However, for the purpose of this thesis, which to some extent follows the Human Capital argument, not simply managerial positions seem relevant, but rather employment relations and conditions. Thus, both immediate rewards in terms of the salary and long-term or prospective benefits such as career opportunities are relevant. A useful tool in order to distinguish occupations within the same ISCO-08 group is the European Socio-economic Classification (ESeC) that divides occupations into classes. Class 1, called “higher salariat”, captures large employers, higher-grade professionals, as well as administrative and managerial occupations. Contracts are distinguished according to extent employees’ work may be monitored and controlled, and how specific skills and knowledge of technical and organisational tasks are to the employer. Applying this concept to the ISCO-08

managerial occupations only and therefore leaving out "Production and Specialised Service Managers", leaves us with the following occupations that we can identify as class 1:

**Table 4.3 Definition of dependent variable "Managerial occupations" based on ISCO and ESeC**

| ISCO-08 code and title | | ISCO-08 code and title | |
|---|---|---|---|
| **11 Chief Executives, Senior Officials and Legislators** | | | |
| **111** | **Legislators and Senior Officials** | | |
| **1111** | Legislators | 1113 | Traditional Chiefs and Heads of Villages |
| **1112** | Senior Government Officials | 1114 | Senior Officials of Special-interest |
| **112** | **Managing Directors and Chief Executives** | | |
| **1120** | Managing Directors and | | |
| **12 Administrative and Commercial Managers** | | | |
| **121** | **Business Services and Administration Managers** | | |
| **1211** | Finance Managers | 1212 | Policy and Planning Managers |
| **1213** | Human Resource Managers | 1219 | Business Services and |
| **122** | **Sales, Marketing and Development Managers** | | |
| **1221** | Sales and Marketing | 1222 | Advertising and Public Relations |
| **1223** | Research and Development | | |
| **14 Hospitality, Retail and Other Services Managers** | | | |
| **141** | **Hotel and Restaurant Managers** | | |
| **1411** | Hotel Managers | 1412 | Restaurant Managers |
| **142** | **Retail and Wholesale Trade Managers** | | |
| **1420** | Retail and Wholesale | | |
| **141** | **Other Services Managers** | | |
| **1431** | Sports, Recreation and | 1439 | Services Managers |

However, for three reasons, this thesis also includes senior professional occupations in its dependent variable. Firstly, according to ESeC, not only managerial occupations fulfil the criteria of the higher salariat, but also certain senior professional occupations, such as lawyers or university teachers. Secondly, from a rather technical point of view, there is an already an existing overlap between the main group's managers and professionals, as it is sometimes

hard to decide whether specific skills are required at the legislative, administrative or managerial level, or whether skills need to be directly applied. This leads to problems in the ISCO, but also illustrates the second reason for including both major groups. This paper aims to examine whether generous family policies hinder women from reaching the top. The hypothesis here is that firstly, in generous welfare states, employers are more reluctant to hire women due to the potential of career interruptions and the loss of investment. However secondly, women in countries with less generous family policies are more reluctant to accumulate specific skills that would qualify them for top positions, if work-family reconciliation policies are not available. Thus, not only hierarchies in terms of power are important, but also the level of qualification needed for a specific occupation. Consequently, this thesis includes both managers and senior professionals as to a large extent the latter requires skills at the top ISCO skill level. The following occupations are captured by main group 2 professionals:

**Table 4.4 ISCO 3-digit disaggregation of major group professionals**

| |
|---|
| **21 Science and Engineering Professionals** |
| **211 Physical and Earth Science Professionals** |
| **212 Mathematicians, Actuaries and Statisticians** |
| **213 Life Science Professionals** |
| **214 Engineering Professionals (excluding Electrotechnology)** |
| **215 Electrotechnology Engineers** |
| **216 Architects, Planners, Surveyors and Designers** |
| **22 Health Professionals** |
| **221 Medical Doctors** |
| **222 Nursing and Midwifery Professionals** |
| **223 Traditional and Complementary Medicine Professionals** |
| **224 Paramedical Practitioners** |
| **225 Veterinarians** |
| **226 Other Health Professionals** |
| **23 Teaching Professionals** |
| **231 University and Higher Education Teachers** |
| **232 Vocational Education Teachers** |
| **233 Secondary Education Teachers** |
| **234 Primary School and Early Childhood Teachers** |
| **235 Other Teaching Professionals** |
| **24 Business and Administration Professionals** |
| **241 Finance Professionals** |
| **242 Administration Professionals** |
| **243 Sales, Marketing and Public Relations Professionals** |
| **25 Information and Communications Technology Professionals** |
| **251 Software and Applications Developers and Analysts** |
| **252 Database and Network Professionals** |
| **26 Legal, Social and Cultural Professionals** |
| **261 Legal Professionals** |
| **262 Librarians, Archivists and Curators** |
| **263 Social and Religious Professionals** |
| **264 Authors, Journalists and Linguists** |
| **265 Creative and Performing Artists** |

Based on ESeC, but also on the classification if ISCO-08 itself, we cannot consider all occupations in this category as a top position. According to the ILO, one of the achievements of ISCO-08 compared to ISCO-88, is to also acknowledge the nature of the work and not only

qualification levels. While this makes sense from an empirical perspective, it is problematic in order to test the skill investment and recruitment argument. Since we are interested in whether family policies create barriers, as employers might be more reluctant to hire and train women for highly skilled jobs due to expected career interruptions, the nature of work matters, but more than this, the level of skills required also matters. The ILO (2007) highlights that for two sub-groups in the main group, professional occupations with the same nature of work, but different skill levels, are classified as professionals – that is teachers and health professionals. However, since for example qualifications for primary teachers clearly differ from those for university teachers, or between professionals and associate professional nurses and midwives, it was decided to not include nursing and midwifery professionals and teaching professionals with the exception of university and higher education teachers from the dependent variable. Thus, primary, secondary and vocational education teachers are not included. This also corresponds with the ESeC recommendations (see also Rose and Harrison, 2007). In addition to this, ESeC also excludes librarians, archivists and curators; social work and counselling and religious professionals; authors, journalists and linguists; creative and performing artists. This leaves us with the following professional occupations in addition to managerial occupations listed in table 4.5 for class 1:

**Table 4.5 Definition of dependent variable "Professional and managerial occupations" based on ISCO and ESeC**

| ISCO-08 | Title | ISCO-08 | Title |
|---|---|---|---|
| **21 Science and Engineering Professionals** | | | |
| **211 Physical and Earth Science Professionals** | | | |
| **2111** | Physicists and Astronomers | 2113 | Chemists |
| **2112** | Meteorologists | 2114 | Geologists and |
| **212 Mathematicians, Actuaries and Statisticians** | | | |
| **2120** | Mathematicians, Actuaries | | |
| **213 Life Science Professionals** | | | |
| **2131** | Biologists, Botanists, | 2133 | Environmental |
| **2132** | Farming, Forestry and | | |
| **214 Engineering Professionals (excluding Electrotechnology)** | | | |
| **2141** | Industrial and | 2145 | Chemical Engineers |
| **2142** | Civil Engineers | 2146 | Mining Engineers, |
| **2143** | Environmental Engineers | 2149 | Engineering Professionals |
| **2144** | Mechanical Engineers | | |
| **215 Electro-technology Engineers** | | | |
| **2151** | Electrical Engineers | 2153 | Telecommunications |
| **2152** | Electronics Engineers | | |
| **216 Architects, Planners, Surveyors and Designers** | | | |
| **2161** | Building Architects | 2164 | Town and Traffic Planners |
| **2162** | Landscape Architects | 2165 | Cartographers and |
| **2163** | Product and Garment | 2166 | Graphic and |
| **22 Health Professionals** | | | |
| **221 Medical Doctors** | | | |
| **2211** | Generalist Medical | 2212 | Specialist Medical |
| **223 Traditional and Complementary Medicine Professionals** | | | |
| **2230** | Traditional and | | |
| **224 Paramedical Practitioners** | | | |
| **2240** | Paramedical Practitioners | | |
| **225 Veterinarians** | | | |
| **2250** | Veterinarians | | |

**Table 4.3 cont.**

| ISCO-08 | Title | ISCO-08 | Title |
|---|---|---|---|
| **226 Other Health Professionals** | | | |
| **2261** | Dentists | 2265 | Dieticians and Nutritionists |
| **2262** | Pharmacists | 2266 | Audiologists and |
| **2263** | Environmental and | 2267 | Optometrists and |
| **2264** | Physiotherapists | 2269 | Health Professionals |
| **23 Teaching Professionals** | | | |
| **231 University and Higher Education Teachers** | | | |
| **2310** | University and | | |
| **24 Business and Administration Professionals** | | | |
| **241 Finance Professionals** | | | |
| **2411** | Accountants | 2413 | Financial Analysts |
| **2412** | Financial and Investment | | |
| **242 Administration Professionals** | | | |
| **2421** | Management and Organisation | 2423 | Personnel and Careers |
| **2422** | Policy Administration | 2424 | Training and Staff |
| **243 Sales, Marketing and Public Relations Professionals** | | | |
| **2431** | Advertising and Marketing | 2433 | Technical and Medical Sales |
| **2432** | Public Relations Professionals | 2434 | Information and |
| **25 Information and Communications Technology Professionals** | | | |
| **251 Software and Applications Developers and Analysts** | | | |
| **2511** | Systems Analysts | 2514 | Applications Programmers |
| **2512** | Software Developers | 2519 | Software and Applications |
| **2513** | Web and Multimedia | | |
| **252 Database and Network Professionals** | | | |
| **2521** | Database Designers and | 2523 | Computer Network |
| **2522** | Systems Administrators | 2529 | Database and Network |

**Table 4.3 cont.**

| ISCO-08 | Title | ISCO-08 | Title |
|---|---|---|---|
| **26 Legal, Social and Cultural Professionals** | | | |
| **261 Legal Professionals** | | | |
| **2611** | Lawyers | 2619 | Legal Professionals Not |
| **2612** | Judges | | |
| **263 Social and Religious Professionals** | | | |
| **2631** | Economists | 2633 | Philosophers, Historians and |
| **2632** | Sociologists, Anthropologists | 2634 | Psychologists |

In order to grasp whether family policies only affect women's likelihood to reach powerful positions that require high qualifications, or whether they also affect women's chances to reach high-skilled jobs in general, all models are tested both for the dependent variable being managers and professionals, and just managers. Managerial positions include Chief Executives, Senior Officials and Legislators; Administrative and Commercial Managers; Sales, Marketing and Development Managers; Hospitality, Retail and Other Services Managers (see table 4.3). Professional and managerial positions include the aforementioned ones in addition to Science and Engineering Professionals; Health Professionals (excluding Nursing and Midwifery Professionals and others health professionals); Teaching Professionals (only including Higher Education Teachers); Business and Administration Professionals; Legal, Social and Cultural Professionals [as listed in table 4.4]. For both dependent variables, a dummy variable is created with top positions being 1 and all others being 0. Table 4.6 illustrates the descriptive statistics for both dependent variables.

**Table 4.6 Descriptive statistics for the dependent variables "managerial occupations" and "professional and managerial occupations"**

| | Variable | N | Missing % | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|---|---|
| **1** | Managerial Occupations/ higher salariat | 12,930 | 0.46 | .299 | .458 | 0 | 1 |
| **2** | Managerial and Professional Occupation/ higher salariat | 12,930 | 0.46 | .085 | .279 | 0 | 1 |

To summarise, the author applies both the regular definition of managerial positions and additionally a wider definition of top positions that also includes senior professionals. Both definitions follow the idea that senior professionals for the purpose of this research are to be treated similarly to managers. This is because both managers and senior professionals as listed in the paragraph above, both have similar characteristics such as a lower risk to be made redundant, less short-term fluctuation of income, a better prospect of a rising income, greater security, greater authority and control over employees (Rose and Harrison, 2007). For example, a retail manager is expected to have comparable levels of security, chances of career progression, authority and control as a senior business and administration professional. Consequently, adding senior professionals to the definition simply widens the definition of top positions and should be considered as complimentary to the existent definition of managerial positions. This is why in the course of this thesis both definitions are used interchangeably, especially because from a methodological point of view, the wider definition of top positions also offers a greater sample size.

## 4.3 Control Variables

The selection of control variables follows that of previous papers on vertical segregation. Control variables are be age, migration, part-time work, the presence of (preschool) children, living with a partner, company size, public sector and training experience based on previous studies of occupational segregation (e.g., Mandel and Shalev, 2009; Burchell *et al.*, 2015; Dolado *et al.*, 2002, 2003, Maume, 1999; Schäfer *et al.*, 2012). Table 4.7

illustrates the descriptive statistics for the control variables. Schaefer *et al.* (2011) is particularly helpful as the authors have a similar approach towards investigating vertical segregation by looking at managers only from a multilevel perspective. A key individual-level characteristic in their study is gender. Since this thesis aims to examine cross-national differences the gender gap in managerial positions, the key independent variable is gender, as we try to understand whether the extent to which women are disadvantaged in accessing top positions varies across countries. Based on the literature presented in Chapter 2, we can expect gender to significantly impact employees' chances to be in a managerial, or managerial and professional occupation. In other words, women seem to be disadvantaged in every country included. However, the extent to which gender affects career perspective's seems to vary across countries. Based on cross-national differences illustrated in Chapters 2 and 3, we can assume that the gender gap varies significantly across countries.

**Table 4.7 Descriptive statistics for 19 control variables in 28 countries for multilevel models**

| | Variable | N | Missing % | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|---|---|
| **1** | Age | 12,930 | 0.00% | 41.39 | 11.48 | 16 | 89 |
| **2** | $Age^2$ | 12,930 | 0.00% | 1845.17 | 997.54 | 256 | 7921 |
| **3** | Having children | 12,930 | 0.00% | 0.35 | 0.48 | 0 | 1 |
| **4** | Having a partner | 12,930 | 0.00% | 0.68 | 0.47 | 0 | 1 |
| **5** | Youngest child in preschool | 12,930 | 0.00% | 0.17 | 0.38 | 0 | 1 |
| **6** | Part-time employed | 12,659 | 2.14% | 0.23 | 0.42 | 0 | 1 |
| **7** | Migrant | 12,009 | 7.67% | 0.15 | 0.35 | 0 | 1 |
| **8** | Industry sector | 12,826 | 0.81% | 0.11 | 0.31 | 0 | 1 |
| **9** | Construction | 12,826 | 0.81% | 0.04 | 0.18 | 0 | 1 |
| **10** | Transport sector | 12,826 | 0.81% | 0.03 | 0.17 | 0 | 1 |
| **11** | Financial Services | 12,826 | 0.81% | 0.06 | 0.24 | 0 | 1 |
| **12** | Public Administration | 12,826 | 0.81% | 0.09 | 0.29 | 0 | 1 |
| **13** | Education | 12,826 | 0.81% | 0.21 | 0.40 | 0 | 1 |
| **14** | Health Sector | 12,826 | 0.81% | 0.14 | 0.35 | 0 | 1 |
| **15** | Other Services | 12,826 | 0.81% | 0.19 | 0.40 | 0 | 1 |
| **16** | Paid training | 12,912 | 0.14% | 0.45 | 0.50 | 0 | 1 |
| **17** | Small Company | 12,654 | 2.18% | 0.64 | 0.48 | 0 | 1 |
| **18** | Large Company | 12,654 | 2.18% | 0.13 | 0.34 | 0 | 1 |
| **19** | Employed in the public sector | 12,930 | 0.00% | 0.44 | 0.50 | 0 | 1 |

Additionally, all models control for age as a scale variable, as the assumption is that age serves as an indicator for experience and thus human capital, which is likely to affect employees' likelihood to be in a higher positions (see Holst *et al.*, 2010; Schäfer *et al.*, 2012). Age here is measured both as a scale variable using data from the EWCS 2010, as well as quadratic in order to check for a curvilinear relationship between age and top positions (Schäfer *et al.*, 2012).

Besides age, the models also control for paid training as we can expect that employers only invest into employees if they want to increase their human capital, and therefore their value to the company. More than this, in order to bind them more tightly. This variable is a dummy variable, 1 meaning the employee received paid training on the job at work. The question in the EWCS 2010 survey was as following: Q61: over the past 12 months, have you undergone any of the following types of training to improve your skills or not? Possible answers are: [A]training paid for or provided by your employer; [B] by yourself if self-employed; [C] training paid for by yourself. Thus, only a positive answer to option A is coded as 1, the rest are coded as 0 (reference group).

The models also control for working part-time, as first of all, women are more likely to be working part-time than men and secondly, part-time workers are less likely to be promoted. This is not due to gender only, but also due to "organisational costs for promoting part-time managers" (Baxter and Wright, 2000, p. 283). Thus, we need to hold part-time work constant, as otherwise results will be biased. Here, the EWCS distinguishes between part-time and full-time employment by defining part-time between 1 and 30 hours per week and full-time everything above. Again, a dummy variable is created with 1 being working 1 to 30 hours, and 0 being full-time and thus over 30 hours a week. Moreover, we need to control for the presence of (young) children, as childbirth is one of the main reasons for gendered differences in pay and occupational hierarchies (Hewlett, 2002). This is because women choosing to take time off their job in order to look after their children consequently miss out on work experience and thus are less attractive to an employer. Studies examining the family penalty by comparing women with and without children, find that even after controlling for education

and work experience, women with children earn less than women without (Fuchs, 1988; Korenman and Neumark, 1992; Waldfogel, 1997, as cited by Waldfogel 1998). England *et al.* (2016) find that this motherhood penalty in terms of wages is highest for highly educated women. In addition to that, mothers also seem to be less likely to have successful careers as argued by Goldin (1997). This is also due to mothers being more likely to be working part-time and not full-time. Additionally, mothers tend to be employed in more female-dominated occupations, as Burchell *et al.* (2015) argue. The variable used in the EWCS is from a household grid providing information on the presence of children in the household and their age. If there is a child living in the household that is younger than 18 years old, the dummy variable is coded 1, otherwise remaining at 0. Furthermore, there is an additional variable created for the presence of children in preschool age. Preschool age here is defined as 0 to 5 years old and again a dummy variable is created with 1, indicating a preschool child is present in the household and labelled 0 if there is no child in that age group living in the household.

Controlling for a partner living in the household can test for "additional resources and possible pooling within the household" (Schäfer *et al.*, 2012, p. 17). Thus, we can expect that couples in a relationship split their resources and split care-taking responsibilities and other household work. However, as discussed in Chapter 2.4, we cannot expect the division of labour between the spouses to be equal. What is more, while we find that men in high positions tend to be married, we do not find the same for women (Schaefer *et al.*, 2012). Thus, the author expects a partner living in the household, does not have the same impact on women's career as for men's. Here, again, the household grid from the EWCS is used which asks specifically for persons living in the household and the relationship of those to the main respondent. If the respondent indicates that a "spouse/partner" lives in the household, a created dummy variable is coded 1.

The model also includes whether migration status impacts women's career perspectives, as migrants are more disadvantaged than natives in the labour market, as argued by Schäfer *et al.* (2012) and Zegers de Beijl (2002). The question in the EWCS here is as follows: Q1 Were you and both of your parents born in this country? Options here are: 1

yes; 2 no; 7 not applicable; 8 DK/no opinion; 9 Refusal. Thus, a dummy variable was again created with a negative answer "no" being coded 1 and a positive one being coded 0.

What is more, when examining the impact of labour market institutions and policies on vertical segregation, we need to distinguish between different sizes of companies. Pierre and Scarpetta (2004) for example argue that especially medium-sized and small innovative firms are affected most negatively by employment regulations. Additionally, the authors argue that while prime-age men do not seem to be affected by labour market regulations such as strict EPL, women's employment prospects are affected negatively (see also Chung, 2009; Chung 2014; Holst et al, 2009, as cited in Schäfer *et al.*, 2012). The EWCS addresses this matter by asking: "Q11 How many people in total work at your workplace (at the local site)?" Potential answers are: 1 (interviewee works alone); 2-4; 10-49; 50-99; 100-249; 250-499; 500 and over; no opinion; refusal. A dummy variable for large companies is created with 1 being more than 250 employees, and another dummy variable for small companies with less than 50 employees as, following common European definitions for company sizes (see for example Wagner, 1995; Lukács, 2005).

Additionally, as we know that particularly in Scandinavian countries women tend to be employed in the public sector, where organisational hierarchies are different than in the private sector (see for example Llorens *et al.*, 2007), we need to exclude the possibility that our results are biased due to an overrepresentation of women in top positions in the public sector. Thus, a dummy variable again is created with 1 being employed in the public sector. The relevant question in the EWCS 2010 is: "Q10 Are you working in the …?" Potential answers are: private sector; public sector; joint private-public organisation or company; not-for-profit sector, NGO; other; DK/no opinion (spontaneous); refusal (spontaneous). Public sector in this case includes central and local administrations, health and education and excludes firms financed by the State, but operating on the market.

What is more, this thesis also controls for sectors, as we want to focus on vertical and not on horizontal segregation. Horizontal segregation describes the emergence of largely non-manual female and manual male dominated jobs (see Charles and Grusky, 1995; Grusky and Charles, 1998; Burchell, 2002). It can therefore be assumed that women are more likely to be in education than in the industry sector for example to have a managerial position. Thus, we control for the following sectors as defined by the Statistical classification of economic activities in the European Community, abbreviated as NACE: industry sector; construction; transport sector; financial services; public administration; education; health sector and other services. Again, dummy variables are created for each sector. Coding is based on the EWCS question “Q9 What is the main activity of the company or organisation where you work?”.

## 4.4 Measuring Family Policies

One of the contributions this thesis aims to make, is to examine the relationship between family policies and women's likelihood to reach top positions. As discussed in Chapter 4, the specific objective is to research the existence of a welfare state paradox as identified by Mandel and Semyonov (2006). Examining the hypothesis of the welfare state paradox, the authors examine the impact of family policies on women's likelihood to reach lucrative managerial positions, and managerial positions in general and female-typed occupations. Key independent variables here are the Welfare State Index, a summative index including maternity leave, publicly funded childcare for 0-6 year olds and public welfare sector as a share of the total. Questioning their findings, Korpi *et al.* (2013) on the other hand also examine the impact of family policies on managerial positions, the gender wage gap and women in corporate boards. However, in contrast to choosing a single dimensional index such as the welfare state index, Korpi et al (2013) distinguishes between different dimensions of family policies – i.e., they examine the impact of traditional family, dual earner or earner carer policies on vertical segregation. Lohmann and Zagel (2015) on the other hand create family policy indices that are not mutually exclusive and allocate countries to either one or the other group, but rather allow countries to vary in their degrees of familiarisation and de-familiarisation.

In contrast to Korpi *et al.* (2013), Zagel and Lohmann (2015) and others, this thesis only includes measurements of family policies that may have a different impact, not indices and typologies as these do not allow the researcher to establish what policies have an impact on the outcome variable. Additionally, typologies assume countries to fall neatly into certain groups which do not reflect the heterogeneity of family policy profiles across countries. Consequently, only separate measurements of paternal, parental, maternity, well-paid and unpaid leaves, childcare provisions and public spending are included. All variables and their descriptive statistics are listed in table 4.8. Thus, empirically this paper aims to analyse the impact of family policies on women's access to top position compared to men's.

**Table 4.8 Descriptive Statistics for context level variables**

| Variable | Details and data sources | Obs. level 1 | Obs. level 2 | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|---|---|
| **Maternity Leave** | Duration of maternity leave in weeks (Multilinks, 2011) | 11,291 | 28 | 17.98 | 6.98 | 8.60 | 45.00 |
| **Maternity leave compensation level** | Level of compensation as a share of earned income (Multilinks, 2011) | 11,291 | 28 | 86.20 | 19.53 | 23.30 | 119.00 |
| **Effective weeks of maternity leave** | Total effective maternity and parental leave available to mothers (Multilinks, 2011) | 11,291 | 28 | 14.96 | 5.22 | 3.26 | 40.50 |
| **Parental leave net duration in months** | Net duration of parental leave in months (Multilinks, 2011) | 10,945 | 27 | 19.87 | 11.76 | 6.00 | 36.00 |
| **Parental leave payment duration in months** | Duration of parental leave payment in months (Multilinks, 2011) | 10,945 | 27 | 14.99 | 11.96 | 0.00 | 34.40 |
| **Parental leave compensation level** | Level of compensation as a share of earned income (Multilinks, 2011) | 10,945 | 27 | 39.59 | 28.96 | 0.00 | 100.00 |
| **Effective weeks of parental leave** | Total effective parental leave (Multilinks, 2011) | 10,945 | 27 | 8.02 | 7.62 | 0.00 | 31.21 |

**Table 4.8 cont.**

| Variable | Details and data sources | Obs. level 1 | Obs. level 2 | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|---|---|
| **Paternity Leave in days** | Duration of paternity leave in days (Multilinks, 2011) | 10,945 | 27 | 13.62 | 16.57 | 0.00 | 90.00 |
| **Paternity leave compensation level** | Level of compensation as a share of earned income (Multilinks, 2011) | 10,945 | 27 | 67.56 | 41.09 | 0.00 | 100.00 |
| **Paternity Leave in effective weeks** | Effective parental leave (Total leave-time in months weighted by payment level) (Multilinks, 2011) | 10,945 | 27 | 1.32 | 1.11 | 0.00 | 4.29 |
| **Well-paid Leave** | Lenght of leave (maternity and parental) with an income replacement through benefits of 60 percent or more (Multilinks, 2011) | 11,291 | 28 | 8.64 | 7.41 | 0.00 | 26.10 |
| **Unpaid Leave** | The sum of maternity leave and parental leave minus the months of paid leave (based on Lohmann and Zagel, 2015) | 11,291 | 28 | 8.82 | 9.21 | 2.00 | 40.00 |

**Table 4.8 cont.**

| Variable | Details and data sources | Obs. level 1 | Obs. level 2 | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|---|---|
| **Expenditure in childcare** | Public expenditure on childcare services per child aged under six (OECD Family Database) | 9,444 | 22 | 0.82 | 0.43 | 0.13 | 1.90 |
| **Full-time childcare for older children** | Availability of formal childcare 30 hours or more from 3 years to compulsory school age as a percentage over the population of the age group (Eurostat, 2017) | 11,291 | 28 | 51.30 | 21.43 | 12.00 | 84.00 |
| **Part-time childcare for older children** | Availability of formal childcare 1 to 29 hours from 3 years to compulsory school age as a percentage over the population of the age group (Eurostat, 2017) | 11,291 | 28 | 32.19 | 20.62 | 3.00 | 77.00 |
| **Full time Childcare for under 3 year olds** | Availability of formal childcare 30 hours or more for children under 3 as a percentage over the population of the age group (Eurostat, 2017) | 11,291 | 28 | 17.49 | 12.77 | 0.00 | 65.00 |

**Table 4.8 cont.**

| Variable | Details and data sources | Obs. level 1 | Obs. level 2 | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|---|---|
| **Part-time Childcare under 3 year old** | Availability of formal childcare 1 to 29 hours for children under 3 as a percentage over the population of the age group (Eurostat, 2017) | 11,291 | 28 | 12.45 | 9.53 | 0.00 | 41.00 |
| **No childcare under 3 year olds** | No availability of childcare services for children under 3 as a percentage over the population of the age group (Eurostat, 2017) | 11,291 | 28 | 70.18 | 16.26 | 27.00 | 98.00 |
| **Childcare allowance for 1 Child** | As share of net average income (Multilinks, 2011) | 11,291 | 28 | 4.07 | 2.42 | 0.00 | 10.00 |
| **Childcare allowance for 3 children** | As share of net average income (Multilinks, 2011) | 11,291 | 28 | 17.21 | 8.57 | 0.00 | 39.30 |
| **Enrolment in full-time Childcare for under 3 year olds** | Full-time childcare usage of children under 3 years old (Multilinks, 2011) | 11,291 | 28 | 16.58 | 12.74 | 0 | 63 |
| **Enrolment in Childcare 3-6 year olds** | Childcare usage for 3-6 year olds (Multilinks, 2011) | 11,291 | 28 | 86.55 | 14.40 | 49 | 100 |
| **Enrolment in childcare for children aged 0-2 years** | Enrolment rates of under 3 years in formal childcare (Multilinks, 2011) | 11,291 | 28 | 28.90 | 16.68 | 2 | 73 |

Indicators were selected based on the literature reviewed in Chapter 3 and reflect measures for family policies used. Additionally, as the thesis aims to check whether summative indices deliver the same results as single indicators, all the components to the two family policy typologies included are examined separately. The following section first explains how the elements included in the two family policy typologies. Then, the single policies both relevant to the typologies and the analysis are examined in greater detail. The policies here range from paternity, maternity and parental leave to childcare expenditure and enrolment indicators.

*Maternity, paternity and parental leave*

Maternity leave is measured in three ways – the length of maternity leave, the level of compensation and the effective weeks of paid maternity leave (Multilinks, 2011). The duration of maternity leave is the maximum length measured in weeks and expressed the time mothers have before and after childbirth off work. The level of compensation is defined as Cash benefit during maternity leave in percentage of income before taking up leave, and is calculated on the basis of the net income of an average worker in the respective year. Both indicators multiplied then provide the duration of effective weeks of maternity leave in order to express the total leave-time in weeks weighted by payment level.

Paternity leave is measured using the same approach. Paternity leave describes the maximum amount of days fathers are entitled to after childbirth. The level of compensation is measured by the average cash benefit during the leave in percentage of the income before taking up the leave. Effective paternity leave is again duration and level of compensation multiplied.

Parental leave is measured in four ways – net parental leave, parental leave payment duration, compensation level and effective leave. Net parental leave describes the maximum

length of leave for both parents. The duration of payment captures the number of months benefits are paid for. The level of compensation again is defined as cash benefit during maternity leave in percentage of income before taking up leave, and is calculated on the basis of the net income of an average worker in the respective year.

*Well-paid and unpaid leave*

In order to assess whether leave provides a generous income replacement and thus encourages parents to take leave, the indicator for well-paid leave measures the length of leave with an income replacement through benefits of 60 percent or more. The indicator takes both maternity and parental leave into account. In contrast to that, the duration of unpaid leave measures the duration of leave entitlements without any income replacement. The variable is constructed using Multilinks (2011) data as the sum of maternity leave and parental leave minus the months of paid leave. Data for well-paid and unpaid leave stems from Multilinks (2011) database and provides data for the year 2009.

*Childcare – coverage and usage*

This thesis includes various indicators for childcare and aims to take into account different age groups covered, but also the generosity of hours and lastly both availability and usage. The indicator for full-time childcare for older children is defined as the availability of formal childcare; 30 hours or more from 3 years to compulsory school age as a percentage over the population of the age group (Eurostat, 2017). Part-time childcare for older children on the other hand includes the availability of formal childcare; 1 to 29 hours from 3 years to compulsory school age (Eurostat, 2017). Full-time and part-time childcare for under 3 year olds follows the same definition applied to the age group of 0 to 2 year olds. Eurostat here defines as formal arrangements, four types of childcare: education at pre-school, education at compulsory school, childcare at centre-based services outside school hours and childcare at day-care centres. Data here stems from EU-SILC and is for the year 2008.

Childcare usage on the other hand does not express availability of arrangements for childcare and early education, but the actual enrolment rates. Here, data is included to show the usage of pre-primary and primary education for children aged 3-5 years as a percentage of all children in the age cohort, the usage of formal childcare arrangements for children aged 0-3, and the share of children full-time cared for in formal childcare arrangements for 30 hours or more a week. By including both availability and enrolment rates, the thesis aims to take into account both the political will to offer childcare arrangements, and the will of the individual and the society in question to make use of these offers.

*Childcare expenditure*

While the previous indicators for childcare usage and availability describe how individuals access and use publicly provided childcare, childcare expenditure measures the extent to which governments invest into the provision of childcare. Following the arguments made in section 3.1.1, investments into the childcare sectors are associated with a large public sector (Mandel and Semyonov, 2006). This is the second side of the welfare state paradox – by investing into public services the state indirectly promotes occupational segregation as women tend to be employed in the public sector. Mandel and Semyonov (2006) argue that this has negative implications on pay as female-dominated occupations tend to be lower paid than mixed or male-dominated ones.

In order to assess how much governments spend on childcare services, this thesis uses OECD data on public expenditure on early childhood education and care covers all public spending (in cash or in-kind) towards formal childcare and early education services. This includes day-care services such as crèches, day care centres, and family day care and pre-primary education services such as kindergartens. While this covers generally children from 0 to 5, the OECD takes into account cross-national differences in compulsory age in school entry, and adjusts the age range covered in this indicator accordingly. Public expenditure on early childhood education and care is expressed as a percentage of GDP.

In order to assess the financial investment the government makes into childcare, the thesis also includes indicators for childcare allowances both for 1 child and for 3 children. Here, childcare allowance is measured as a share of monthly net average income for either 1 child or 3 children in the year 2009.

## 4.5 Measuring Labour Market Institutions

Few scholars such as Estevez-Abe (e.g. 2005), England (2005), Morgan (2005), Dieckhoff *et al.* (2015) and others, have analysed the direct impact of labour market institutions on various dimensions of gender labour market inequality. However, what is missing is a cross-national comparative study of how labour market institutions impact vertical segregation, namely women's chances to reach top positions. Based on the presented studies in Chapter 3, the following section introduces the indicators used to measure labour market institution's at a context level. These can be distinguished between indicators aiming to operationalise conflict theory on the one hand, and an approach based on a gendered version of varieties of capitalism on the other hand. All variables and their descriptive statistics are listed in table 4.9.

**Table 4.9 Descriptive statistics for context level variables – labour market institutions**

| Variable | Details and data sources | Obs. level 1 | Obs. level 2 | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|---|---|
| **Trade union density rate** | Net union membership as a proportion of wage and salary earners in employment (ICTWSS) | 11,291 | 28 | 33.82 | 20.49 | 7.71 | 69.26 |
| **Collective bargaining coverage** | Share of employees covered by collective bargaining agreements relative to the overall number of wage and salary-earners (ICTWSS) | 11,291 | 25 | 67.16 | 28.17 | 11.05 | 98 |
| **Women's percentage of trade union members** | Percentage share of females in total membership (ICTWSS) | 9,320 | 24 | 47.18 | 9.41 | 30.5 | 68 |
| **Union density (women)** | Union density rate of females (ICTWSS) | 8,023 | 18 | 35.46 | 22.90 | 7.2 | 73.4 |
| **Skill profiles** | Skill profiles as in vocational training intensity; the share of an age cohort in either secondary or post-secondary vocational training (Unesco, 2016) | 11,291 | 28 | 30.18 | 10.53 | 10.09 | 47.43 |

**Table 4.9 cont.**

| Variable | Details and data sources | Obs. level 1 | Obs. level 2 | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|---|---|
| **Women's skill profiles** | Women's vocational training intensity; the share of an age cohort in either secondary or post-secondary vocational training (Unesco, 2016) | 11,119 | 28 | 27.73 | 10.88 | 6.04 | 45.18 |
| **Unemploy-ment Benefits** | Index includes replacement rate for single and for families, the qualification period needed to qualify for benefit; the duration of benefit entitlement; the waiting days to start receiving benefit after becoming unemployed; and the percentage of the labour force insured for unemployment risk (Comparative Welfare Entitlements Dataset, 2014) | 12,158 | 27 | 10.13 | 5.17 | 3.6 | 32.2 |
| **Employment Protection** | Summative index capturing strictness of regulations on dismissals and the use of permanent contracts ranging from legislation, court rulings to collectively bargained conditions of employment or customary practice (OECD, 2013). | 10,233 | 24 | 2.31 | 0.45 | 1.26 | 4.13 |

***Gendered Varieties of Capitalism approach***

Following the Varieties of Capitalism argument presented in Chapter 3, we expect labour market institutions to serve as institutional complementarities. Thus, we need to include indicators for social protection and skill profiles.

*Employment Protection*

Following the idea of Estevez-Abe, Soskice and Iversen (2001) and of the OECD indicators of employment protection legislation, this thesis uses employment protection based on strictness of employment protection legislation for regular employment, strictness of employment protection legislation for individual and collective dismissals, and strictness of employment protection legislation for temporary employment. The data examines EPL and the costs and procedures of dismissing individual workers or groups on the one hand, and hiring workers on either fixed-term or temporary contracts on the other hand. The three indicators include 21 variables that measure employment protection. The following indicators are included in the EPL index: notification procedures, delay involved before notice can start, length of the notice period at 9 months tenure, length of the notice period at 4 years tenure, length of the notice period at 20 years tenure, severance pay at 9 months tenure, severance pay at 4 years tenure, severance pay at 20 years tenure, definition of justified or unfair dismissal, length of trial period, compensation following unfair dismissal, possibility of reinstatement following unfair dismissal, maximum time to make a claim of unfair dismissal, definition of collective dismissal, additional notification requirements in case of collective dismissals, additional delays involved in case of collective dismissals, other special costs to employers in case of collective dismissals, valid cases for use of fixed-term contracts, maximum number of successive fixed-term contracts, maximum cumulated duration of successive fixed-term contract, types of work for which temporary work agency (TWA) employment is legal, restrictions on the number of renewals of TWA assignments, maximum cumulated duration of TWA assignments

TWA: authorisation or reporting obligations, as well as equal treatment of regular and agency workers at the user firm.

*Unemployment Benefits*

Data measuring the generosity of unemployment benefits comes from the 2014-03 version of the Comparative Welfare Entitlements Dataset. Here, we use the unemployment generosity index consisting of the replacement rate for single parents and for families. The qualification period as in weeks of insurance needed to qualify for benefit; the duration as in weeks of benefit entitlement excluding times of means-tested assistance; the waiting days measured in days one must wait to start receiving benefit after becoming unemployed, and the percentage of the labour force insured for unemployment risk are also utilised. Generous unemployment benefits are considered as functional equivalents to EPL in terms of skill protection (Estevez-Abe *et al.*, 2001). Whereas EPL is considered to protect firm-specific skills, unemployment benefits protect industry specific skills and increase employment security within the industry. As Estevez-Abe *et al.* (2001, p. 28) argue, "the industry in a country with high unemployment and low employment protection becomes functionally equivalent to the firm in a country with low unemployment and high employment protection." By including both EPL and UB, we can therefore check the gendered VoC approach, which argues that by protecting investments into specific skills and long-term working relationships , generous UB and EPL can lead to discrimination against women. Whereas countries with an industry specific skills profile enables workers more flexibility in terms of job opportunities, yet firm-specific skills are limiting the workers' options.

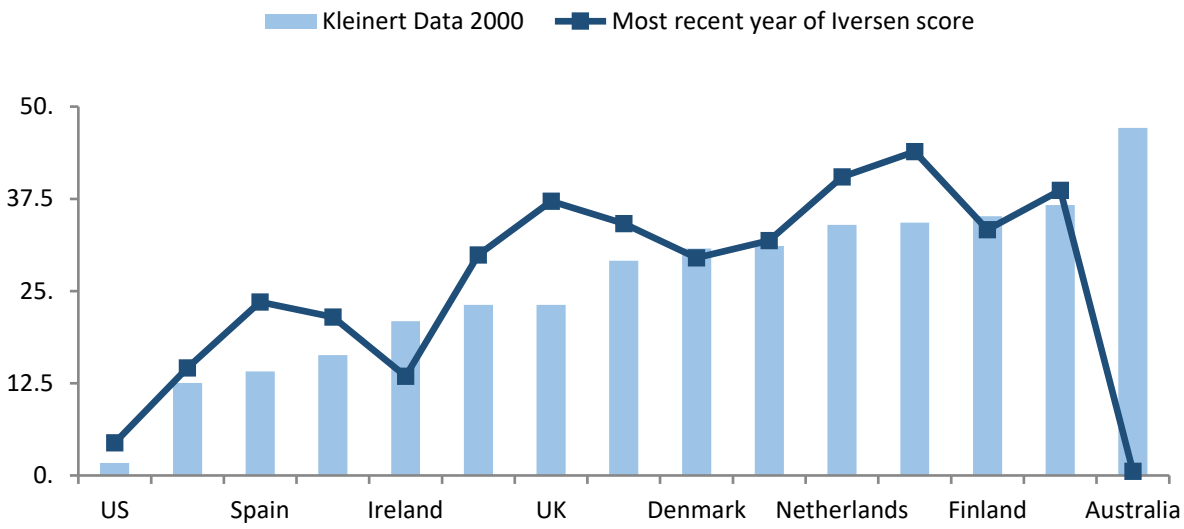
*Skill profiles*

Being aware of the connection between labour market institutions and skill profiles, we need to measure whether economies rely on specific or general skills. The assumption is that in countries with general skill profiles, the need for the protection of skill investments is not as urgent as in countries with specific skills (Estevez-Abe *et al.*, 2001). In CMEs with more specific skills profiles, employers have a higher motivation to support employment-friendly family policies in order to maintain the working relationship with their employees and avoid interruptions. Following Iversen and Soskice (2001), this thesis looks at the intensity of vocational training assuming that "the profile of skills is likely to vary in accord with the structure of a nation's educational system" (Iversen and Soskice, 2001, p. 889). Since the original data is the average of the years 1980 to 1997, the author updated following Cusack, Iversen and Rehm (2005) and Iversen and Soskice (2001). Additionally, Philipp Rehm, who originally calculated skill specificity scores, was contacted via email in order to check whether calculations were made correctly. When scores were calculated, the author also contacted Torben Iversen to get hold of the original dataset used to calculate training intensity using UNESCO data.

The author calculated vocational training activity by the percentage of people in secondary vocational training in relation to all those in secondary school age cohort, plus the number of people in postsecondary vocational training as a percentage to everyone in the postsecondary school age cohort (see data in Appendix B, table B.1). The results also reflect the skill profile definitions made by Estevez-Abe, Iversen and Soskice (2001, p.67). Additionally, the intensity of vocational training and education is also calculated for women only in order to distinguish clearly between skill profiles between genders. While this thesis looks at European countries only and the dataset provided by Iversen includes some non-European OECD countries, the author decided to replicate the vocational training intensity score for the same countries and similar years Iversen did to compare the results. The figure below compares the replicated score, labelled Kleinert Data 2000, with the most recent data that could be taken from Iversen's score

from 1997. The replicated score uses 2000 data as this was the oldest data available at the UNESCO database.

**Figure 4.1 Intensity of Vocational Skill Training – Score Replication**




There are some discrepancies between the replicated score and the original Iversen data.

These might either be due to the selection of data (in the case of Australia) ,or due to significant changes in the VET systems which would be very interesting also regarding to the VoC argument of skill formation. I have attached an excel file with my raw data and a comparison of our measurements (sheet 2). I hope this is of interest for you.

1. **Australia:** Here, the replicated score is higher than Iversen's data. Based on the replicated score, Australia is one of the countries with the highest incidence for vocational training. In this particular case, Iversen's most recent data is from 1992. Thus, Australia has changed substantially from 1992 to 2000 or there are measurement differences.

2. **Austria:** Here, the replicated score and the Iversen data match. Using the average score for vocational training from Soskice and Iversen (2001) however, we see that the summative average of 1980-1997 was much lower at around 20 points. Austria illustrates that vocational skill intensity changes over time due to changes in the VET system and therefore data needs to stay updated.
3. **Ireland:** The replicated score indicates that Ireland might have experienced a positive trend in terms of VET investment between 1997 and 2000. The same might be the case for **France**.

Using an updated version of the data for skill intensity, it is therefore another contribution of this thesis.

***Conflict Theory and labour market dualisation***

According to empirical findings, which seek to examine the conflict between labour and capital, unions crucially shape policy outcomes. However, as discussed in Chapter 2, we know that labour market institutions seem to affect women differently than men. Therefore, the hypothesis is that unions and their collective bargaining power can help us to understand cross-national variation in the gender gap in top positions. In order to test the hypotheses made in Chapter 2, we need to include the following indicators:

*Trade union density rate*

Data on trade union density is from the Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts ICTWSS. It was collected in 34 countries between 1960 and 2012 and covers all EU and OECD members. With regards to the two

theoretical approaches – the gendered Voc and the conflict theory, applying both variables allows us not only to measure the degree of tri-partite dialogue and therefore the level of coordination, but also the strength of unions and their power to protect the workforce. Union density shows how many workers actually benefit from these negotiations.

*Women's percentage of trade union members:*

The analysis includes data on women's percentage of trade union members for the year 2010 from the ICTWSS database. However, there is no recent data available for France (Carley, 2004), which is why we can only use data from 1997 for French membership data. Also, due to the high levels of union fragmentation in France, this score is only representative for one of the five major trade unions, the French Democratic Confederation of Labour and stems from Eurofound's observatories on industrial relations (EIRO). It needs to be noted here, though, that measuring women's percentage of trade union members is not capable of actually measuring dualisation and only aims to capture who is represented by unions.

*Collective bargaining coverage*

Data on collective bargaining coverage stems from ICTWSS as well, and further indicates the share of employees covered by collective (wage) bargaining agreements as a proportion of all wage and salary earners in employment with the right to bargaining. ICTWSS also adjusts the data based on the assumption that some sectors are excluded from the right to bargain. Thus, collective bargaining coverage expresses the extent of coordination between employees and employers.

## 4.6 Selection of countries and reference year

Undertaking cross-national comparative research, several decisions regarding the selection of countries and the year had to be made. Selecting countries as contextual frameworks for this thesis is – besides clearly defined geographical borders, mainly based on two factors: comparability regarding their political institution, administrative and legal factors; and secondly based on pragmatic factors as a result of limited data availability and limited resources. For this thesis, the following 28 European countries are included in the analysis: Austria, Albania, Bulgaria, Belgium, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden and United Kingdom. However, due to a lack of data of macro-level data on labour market institutions and family policies, models discussed in Chapter 4, Chapter 5 and 6 range from analysing 22 to 28 countries. Thus, both the number of countries and the number of individuals is discussed for every model.

European countries have been chosen for the analysis because their political institutions, administrative and legal characteristics are highly comparable. This is also due to their membership in supranational organisations requiring convergence in the listed areas (Hantrais, 1999). Examples are the Council of Europe, the European Union (EU) and the Organisation for Economic Cooperation and Development (OECD). In case of the European Union for example, membership countries have to meet the EU requirements in terms of standards and rules and comply with values defined in the Copenhagen Criteria by the European Council in 1993. In terms of institutional requirements, these criteria's ensure a democratic political and legal system respecting human rights and protecting minorities. Additionally, member states are expected to have a functioning and competitive market economy and to be able to support the integration of a political, economic and monetary union. With these clearly defined criteria, membership in the EU serves as a straightforward and suitable selection criterion for the cases. Besides their political, legal and administrative systems, the EU countries have traditionally also been

compared in terms of their welfare states (see Chapter 2.1. and 2.2.) by scholars such as Esping-Andersen (1990), Korpi (2000), and Orloff (1993) and regarding their political economy (see Hancke *et al.* 2007). The selected countries represent not only the Esping-Andersen's welfare state typology (1990) with liberal, corporatist and social democratic welfare regimes. It also takes the distinction between market types into account with liberal market economies (LME), continental and Scandinavian coordinated market economies (CME). As suggested by Schaefer *et al.* (2011) and Charles and Grusky (2004), the countries also include both advanced post-industrial European economies and rather less advanced economies. Thus, the EU member states serve as an appropriate conceptual framework in order to compare political and social institutions, alongside economic systems.

What is more, selecting EU countries facilitates cross-national comparisons due to the vast amount of data collected on the member states, candidate countries such as Albania, or members of the European Economic Area such as Norway. Both micro- and macro-level data on Europe is accessible for researchers. The decision to choose European countries over OECD countries for example therefore was also made based on the availability of macro-level data on family policies and labour market institutions (see Chapter 3.3. and 3.4.). Since the selection of countries was not random and data in the countries selected cannot be representative for other countries, the results can only be applied to the countries included, not for the wider population.

In terms of the year included in the analysis, this thesis is looking at cross-sectional data for around the year 2010, not longitudinal. The limitations of this approach are discussed in section 3.5. The reason to choose the year 2010 was made due to both pragmatic reasons, but also due to the expansion of family policies in the 2000s (see Ferragina and Seeleib-Kaiser, 2014). Germany, Norway and Ireland for example experienced dramatic changes in their family policies (ibid.). Choosing an earlier year would therefore not take any of these changes into account and would not reflect the current situation of the welfare state sufficiently. The author would have preferred examining data from a more recent year in order to discuss the present situation of

women's labour market position, family policies and labour market institutions. However, data on family policies was not available to the same extent for a more recent year than it was for around the year 2010. This thesis could have also included a longitudinal analysis comparing vertical segregation over years. However, for two reasons the author decided against a longitudinal perspective. As discussed in Chapter three, despite dramatic increases in women's overall employment rates, we find that on average occupational segregation between non-managers and managers/ professional relative to men's remained the same. Secondly, a longitudinal comparison does not seem to offer any additional gain to the analysis, as whilst the change over time seems to be interesting, there does not seem to be substantive change in the cross-national discrepancies in occupational hierarchies between genders despite increasing female employment rates. Thus, a detailed cross-sectional analysis for the year 2010 is preferred over a longitudinal analysis.

However, this thesis also takes into account that changes in the behaviour and practice of social actors potentially lags behind changes in the institutional framework or cultural ideas (See Pfau-Effinger (2012). Thus, we need to assume that despite significant changes in family policies and labour market institutions, women's employment situation's does not change simultaneously. This is even more the case for gendered hierarchies than for employment rates, as the human capital that is required for top positions needs to be accumulated first.

**Time lags**

Time lagged effects in this particular context of women's career progressions and policies or institutions are of course to be considered. This is because women who are currently in top positions or are about to reach a managerial or senior professional position are not necessarily affected by family policies or changes in the labour market. As illustrated in Chapter two of this thesis, family policies have been introduced since the 1990s in the vast majority of developed economies. At the same time, many countries such as Germany, the Netherlands and the UK have substantially changed their family policies from fairly passive, to progressive in the past decade

and are therefore considered as “path-shifters” (Morgan, 2013: 2). Because some of these changes such as the implementation of a right to a place in childcare in Germany have only recently taken place, and effects of these policies on women’s career progression can therefore not be measured yet. The author takes this time-lagged effect into account by using data on family policies and labour market institutions that is older than the data on the dependent variable.

Even though there does not seem to be a general agreement in comparative research on how many years labour market outcomes are lagging behind political and institutional changes, according to Clarke (2016) scholars tend to allow for one (Ruhm, 1998: 301; Pettit and Hook, 2005: 788; Thévenon and Solaz, 2013: 27) or two years (Misra et al, 2011: 147). Consequently, while data for the dependent variable stems from the year 2010, the independent variables on family policies and labour market institutions include data from the year 2008, in order to allow policies and institutional changes time to have an impact on gender labour market outcomes. By approaching time lagged effects in this way, the author takes into account that policies take time to be implemented and to actively change women’s career progressions. At the same time, the author is also aware that career progressions take place over several years. This means that family policies measured in 2008 might not have had any impact on women who are already in top positions. On the other hand, whilst changes in family policies occur and path dependency needs to be questioned, the author mitigates this risk by both taking as many family policies into account as possible and to also apply welfare regime typologies to avoid two aspects: a generalisation of stickiness in terms of family policies and secondly, to overestimate how quickly family policies change. Thus, even if there has been a drastic change in family policies in one country in 2007, this change in unlikely to also have happened in many other countries at the same time. For our dependent variable this means that we still allow family policies at least three years to affect women’s career progression, more likely however more than this. This short amount of time lag does not allow the models to capture to what extent the implementation of family policies has helped shape decisions women made regarding their career paths in the first place however. This needs to be taken into account when analysing the findings.

## 4.7 Method – Multilevel modelling

In contrast to studies understanding social reality as "context free" or fully "context bound" (Hantrais, 1999, p. 94), this thesis aims to treat the context as an explanatory variable that helps to examine social reality by understanding countries as a contextual framework. Using countries or nations as a framework, the researcher faces several limitations. As argued by Hantrais (1999), national borders change and thus do not necessarily reflect cultural or ideological differences within countries. Comparing employment patterns, care and income between women in eastern and western Germany, Pfau-Effinger and Smidt (2011) for example find that differences between eastern and western German women can be largely explained by "differences in the cultural values and models of the family […] and their interaction with institutional and economic factors" (p. 217).

Secondly, with countries being embedded in supranational organisations, any change in the membership structure causes socio-cultural change in the organisation per se. Additionally, the key problem for cross-national comparisons based on countries as a contextual framework is likely to ignore within-country differences. Jobert (1996) highlights the difficulties when comparing the education, training and employment in Germany, France, Italy and the UK, due to diversity within the countries (as cited in Hantrais, 1999), with for example Germany deciding at the federal state-level on education policies and thus having not one, but several education systems.

To summarize, choosing countries as the level of observation is problematic, as cross-national comparisons appear to be unable in taking into account within country diversity. However, the discussed shortcomings can be overcome by using an approach that takes advantages of both macro- and micro-level differences, while still associating cases with

commonly used identities, such as multilevel modelling (MLM). MLM is the method of choice as it takes into account political, legal, socio-cultural and economic systems, but at the same time takes social and cultural diversity of the individuals beyond their nationality into account (Hantrais, 1999).

In general, multilevel analysis examines "relations between variables measured at different levels of the multilevel data structure" (Hox, 2002, p. viii). Multilevel analysis enables us to examine data that is "nested" within each other, therefore violates the independence assumption statistical analyses such as ANOVA and ordinary least-squares (OLS) require (Peugh, 2010, p. 86). However, as Peugh (2010) for example argues, not every nested dataset requires MLM. The key reason for engaging in multilevel modelling is the assumption of high variation at level-2, which is the context-level variable (schools or countries for example). Only if there is enough variation at level-2 or the context level, MLM can be useful. In our example with countries being the level-2 variable and the individuals' job levels being our level-1, we expect high cross-national variation in vertical segregation and not only variation between individuals. MLM allows us to examine not only individual determinants, but also the context factors that impact individual level behaviour (Muijs, 2011). Applying Peugh's (2010) example of MLM for educational data to my research question, the variation at the context level is expressed and calculated by the intraclass correlation (ICC) score which is the proportion of vertical occupational segregation that can be explained at the country level (level-2), and the expected correlation between vertical segregation of two individuals from the same country. Therefore, if the ICC is too low or even zero, the mean of occupational levels of women does not vary much across countries (level-2), and therefore varies only across individuals. In this case, other statistical methods might be more useful. However, for this thesis the ICC is irrelevant as we are not interested in the variation of individuals to reach top position and whether this varies across countries, but more importantly whether the gender gap varies across countries. Thus, while the first question would require random intercept models, the second one requires random slope models as it will be discussed later in this section. For now this means however, that ICC is irrelevant to seeing whether there is a cross-national variance in the extent to which there is a

gender gap in obtaining top positions for workers. What is more important is the significance of the random slope variance, and whether the impact labour market institutions and family policies have on individuals' access to managerial positions is different for women than for men. This will be measured by comparing explained variance in the models and by comparing logged likelihood changes to see whether adding more variables improves the model fit.

As mentioned above, this thesis examines the potential associations between labour market institutions, family policies and women's likelihood to work in top jobs. Thus, in a first step we need to establish our null or empty model of our multilevel model. Because we take into account the nested nature of our data, we need to allow countries to have different means of our dependent variable. The dependent variable is binary – with 1 being the chances to reach a top position and 0 all other positions. Thus, the first model needs to indicate that individuals at the level 1 are nested within countries at level 2. Here, the main drawback of the analysis is the limited number of level-2 country cases and thus the statistical power. This issue is addressed by adding a maximum of two cross-level interaction terms per model.

In order to show which country an individual belongs to, in multilevel models we do not only add the subscript i and j to our dependent variable yij, indicating the value the individual i has in the country j. Furthermore, since we have J countries with nj individuals, the sample size is:

Since this thesis only looks at two levels – the country and the individuals –, we need to establish a two-level model with the residual including two components – the country-level residuals or random effects $u_j$ and the individual-level residuals $e_{ij.}$ This leads to the following model:

In this empty model, y is our dependent variable – the likelihood of an individual i nested within country j to obtain a top positions with $\gamma_{00}$ being the global average. In other words, $\gamma_{00}$ is the overall mean of Y across all countries or the average chances for an individual to reach a top position across all included countries. $u_j$ on the other hand is the random effect component and shows how much in country j the likelihood of an individual to reach a top position varies from the global average $\gamma_{00}$. The average likelihood to reach a top position Y for an individual i nested within country j therefore is the overall mean across all countries and the additional random element, the group-level residual, thus $\gamma_{00} + u_{0j}$. However, in this model we do not allow the likelihood to reach top positions

Starting with the empty model, which serves as a comparison, the analysis starts with random intercept model with explanatory independent variables. In contrast to empty models, these random intercept models aim to examine whether the independent variables discussed in the previous sections have an impact on individuals' likelihood to reach top positions. Because this thesis investigates cross-national variation of the gender gap in top positions, the key explanatory independent variable therefore is gender. Thus, after running the empty models, gender is added to the model and it will be examined whether the gender of an individual i living in a country j increases or decreases the average likelihood for an individual i living in a country j to reach top positions. Here, we therefore allow the intercept to vary across countries depending on gender. In other words, does gender have an impact on individuals' likelihood to reach top positions? What is more, in order to exclude the possibility that the gender impacts individuals' likelihood to reach top positions only because of the individual and job characteristics between genders as discussed in the previous section, the models also include individual-level control variables. These are all summarised by $X_{ij}$ in the equations. The impact individual-level variables have is assumed to be the same across countries and is therefore fixed for these models.

The following equation summarizes these random intercept models with individual control and explanatory variables.

$$Y_{ij} \sim Bino\min al(1,\pi_{ij})$$
$$\log it(\pi_{ij}) = \beta_0 + u_{0j} + \sum_p \beta_p X_{pij}$$
$$u_{0j} \sim N(0,\Omega) : \Omega = \left[\sigma^2_{u0}\right]$$
$$\text{var}(y_{ij} \mid \pi_{ij}) = \pi_{ij}(1-\pi_{ij})/1$$

However, the general assumption in this thesis, is not only that gender impacts career perspectives and women are disadvantaged, even after controlling for various individual-level characteristics. More importantly, this effect is expected to vary across countries. In other words, the assumption here is that the gender gap is significantly smaller or bigger in different European countries. Women's likelihood to reach top positions relative to men's is expected to vary between countries and therefore the impact gender has on access to top positions is not fixed.

For each country, we get the following regression model.

$$Y_{ij} = \beta_{0j} + \beta_{1j} X_{ij} + e_{ij}$$
$$with \quad e_{ij} \sim N(0,\sigma^2_e)$$

The intercept includes the following:

$$\beta_{0j} = \gamma_{00} + u_{0j}$$
$$with \quad u_{0j} \sim N(0,\sigma^2_{u_0})$$

The slope for individual 1 living in country j, is as follows:

$$\beta_{1j} = \gamma_{10} + u_{1j}$$
$$with \quad u_{1j} \sim N(0,\sigma^2_{u_1})$$

Lastly, bringing both models together for all countries, we get the following random slope model:

$$Y_{ij} = \gamma_{00} + \gamma_{10} X_{ij} + \gamma_{01} Z_j + u_{1j} X_{ij} + u_{0j} + \varepsilon_{ij}$$

As indicated by j, we can see that the latter part of the equation is the random element which indicates that the impact individual-level variables have is allowed to vary across countries.

These models can help us understand whether the gender gap varies across countries and which individual-level variables have an impact. In order to be able to address the other research questions however, we need to add independent context-level variables to the equations. To recap, this thesis aims to understand drivers of the gender gap in managerial positions, and further investigates to what extent family policies or labour market institutions have an impact on vertical segregation.

Therefore, we now need to include the intercept variation with Z being our context level variables for country j.

$$Y_{ij} = \gamma_0 + \gamma_1 X_{ij} + \gamma_0 Z_j + u_{1j} X_{ij} + u_{0j} + \varepsilon_{ij}$$

However, in this case Z only describes the impact of a context-level variable on our dependent variable, which is an individual's likelihood to reach a top position. Because this thesis investigates whether family policies and labour market institutions affect women differently than men, we need to add cross-level interaction terms in order to understand how macro-level variables impact the effect gender has on career chances. This is summarised by the following equation with $\gamma_{11} X_{ij} Z_j$ being the cross-level interaction term.

In contrast to random slope models, random intercept models do not allow us to examine whether context variables have influence the varying impact of our key independent variable/gender on our dependent variable across countries.

For the random slope model with cross-level interaction, we therefore have the following model with Z being family policy or labour market institution variables and $\gamma_{01}Z_j$ being the variance of slopes for the independent variables across countries:

$$TopPosition_{ij} = \gamma_{00} + \beta_{1j}Gender_{ij} + \beta_2 Age_{ij} + \beta_3 Age^2{}_{ij}$$
$$+\beta_4 Children_{ij} + \beta_5 Partner_{ij} + \beta_6 Children\,\mathrm{Pr}eschool_{ij} + \beta_7 Parttime_{ij}$$
$$+\beta_8 Migrant_{ij} + \beta_9 Sector_{ij} + \beta_{10} PaidTraining_{ij} + \beta_{11} SmallCompany_{ij}$$
$$+\beta_{12} L\arg eCompany_{ij} + \beta_{13} PublicSector_{ij} + \gamma_{01}Z_j + \gamma_{11}Gender_{ij}Z_j + \tau_{01}Z_j + u_{0j} + e_{ij}$$

## 4.8 Limitations

Multilevel modelling allows this thesis to address the key methodological limitations of previous studies. This is because the models in this thesis enable us to redefine top positions at an individual level avoiding composition effects, and multilevel modelling also allows looking at the association between macro-level variables and the gender gap. However, multilevel modelling assumes causal directions. The models for example assume that family policies affect vertical segregation. The authors thus makes causal inferences that are based on assumptions that are the result of the literature reviewed in Chapter two to five. The models also take confounding factors into account by controlling for them (Goldstein, 2011). Nevertheless, when interpreting results we need to be aware of the fact that causality might not follow the assumptions we made, and thus we cannot say certainly that the independent variables cause a higher or lower gender gap in top positions, but only that there is an association.

In terms of the data used, this thesis allows a cross-national comparison between up to 32 countries and thus enables the researcher to draw conclusions for a wide range of countries. Case studies or qualitative studies on the other hand would allow for a much more detailed and

in-depth analysis. In order to still identify not only whether independent variables affect the gender gap but also which countries are affected by this association, each Chapter plots the random effects of women's relative chances to reach top positions compared to men's with macro-level variables. Nevertheless, qualitative studies using interviews or focus groups would enable the researcher to undertake more dynamic and less restricted research, as this thesis depends on the availability of data and variables and cannot ask "further questions". Therefore, the models cannot take factors into account such as discrimination or attitudes. Surveys such as the International Social Survey Programme (ISSP) could have been merged with the data used, but this would have reduced the number of countries and thus made multilevel modelling not possible.

This leads to another limitation of multilevel modelling and the data used – because some of the variables used are only available for less than 30 countries, lack of statistical significance could be due to the low number of level-2 variables. Thus, the models might not capture significance. On the other hand, the models might exaggerate statistical significance. This is because this thesis is only a cross-sectional study, but has no longitudinal dimension. It does not take change over time into account and therefore whilst in 2010 there might be a statistically significant association between for example, family policies and the gender gap, this association might not hold when looking at earlier data.

Looking at women's chances to reach managerial positions only, we can make different observations based on results illustrated in figure 5.4. First of all, we find that every single country in the sample seems to make it harder for women to reach top positions with a global average of -.39 for highly educated individuals (table 3) and -.39 for the overall workforce (table 5.4). Whereas Poland, Malta, Romania and particularly Bulgaria, Latvia, Albania and Norway were leading regarding highly educated women's chances to reach managerial and senior professional occupations, we cannot say the same for management only. In these eight countries – especially the Eastern European ones such as Romania, Latvia and Albania – women's likelihood to reach managerial positions now ranges between -.33 and -.50. In the similar range, we find Portugal, Cyprus, Lithuania, Hungary, Finland, Denmark, Ireland, Turkey, Estonia, and Spain. The random effects for Luxembourg, Czech Republic, Slovakia and France are around .5 to .58 and are only exceeded by Slovenia, Italy, Germany and Greece.

For the overall workforce, we find women's relative likelihood to reach managerial positions compared to men's ranging from less than -.50 with the highest gender gap in Slovenia, Germany, Greece, Spain, Italy and Turkey. The lowest gender gaps are found in Norway, the UK, Belgium and Sweden. However, even here women are between -.28 and -.18 less likely than men to reach a managerial position. The gender gap in managerial positions varies crucially from the gender gap in senior professional and managerial positions. Most strikingly in Slovenia, where women's access to managerial positions (-.20) is not as negative as for senior professional and managerial positions (-.55), the same is true for Latvia (-.12 compared to -.45), Romania (-.13 compared to -.39) and Albania (0 compared to -.33). In the majority of other countries, the gender gap in managerial positions is even wider than for managerial and senior professional. Most striking here are Germany (-.65 compared to -.53), Greece (-.65 compared to -.52) and Spain (-.66 to -.51), Ireland (-.60 compared to -.42), Luxembourg (-.53 compared to -.40), Cyprus (-.63 compared to -.40), France (-.58 compared to -.40), Czech Republic (-.56 compared to -.38), Finland (-.70 compared to -.30), UK (-.52 compared to -.27), Norway (-.62 compared to -.29) and Belgium (-.46 compared to -.25).

## Chapter 5: Cross-national variation of the gender gap in top positions

This Chapter takes the reader through the multilevel models and highlights the need for individual- and job-level control variables. The research question answered in this Chapter is: To what extent does women's likelihood to be employed in a top position relative to men's vary across countries? In short, indeed, all women on average are less likely to reach top positions compared to men. Additionally, this likelihood varies significantly across countries. Here, the analysis shows two additional aspects: the importance of how we define top positions and also the need to distinguish between educational levels as individual-level factors affect the gender gap of highly educated individuals differently. Another finding of this Chapter is that highly educated women face even greater gender gaps than women from less educated backgrounds.

The previous Chapter summarised the data and methods chosen to answer the research questions raised in Chapter 2 and 3. The literature review has highlighted the following research gaps: First of all, previous research on gender labour market inequalities has focused mainly on women's employment rates, part-time and the gender pay gap. Even though gendered hierarchies are closely linked with the gender pay gap, vertical segregation has been neglected and if researched, then macro-level data was applied or generic definitions of top positions. Thus, this thesis defines top positions in a more distinct way as explained in section 6.2 and uses individual-level data from the European Labour Force Survey. Multi-level modelling – more specifically random intercept model – is applied as individuals are nested within countries and thus a multi-level data structure is given. Research questions two and three aim to understand whether cross-national variation of the gender gap in top positions is affected by family policies or labour market institutions. Because the independent variables are at the national macro-level and the dependent variable is at the individual-level embedded within countries, again multi-level modelling is applied using random slope and cross-level interaction terms. Lastly, random slope models with cross-level interaction terms are being conducted adding both labour market institutions and family policies at the same time in order to test whether both mediate each other.

Therefore, before analysing the impact of any policies or institutions on the dependent variables as defined in Chapter 3, we need to discuss first of all whether women's access to top positions relative to men's actually does vary significantly across countries. What is more, we need to discuss how individual-level factors as defined in the previous Chapter affect the gender gap in professional and/or managerial occupations. The main reason for this is that the definition of top positions varies in several ways from previous papers on vertical segregation such as Schäfer *et al.* (2012), Hakim (1992, 2006), Fagan and Burchell (2002), Fortin and Huberman (2002), Estevez-Abe (2005, 2006), Mandel and Semyonov (2005) and others. In contrast to previous studies discussed in Chapter 2, this thesis uses individual-level data and thus does not apply macro-level indices such as women's share in managerial occupations. This allows the author to control for numerous individual and job characteristics (see section 3.2) such as part-time employment or household compositions. Therefore, the models acknowledge the possibility that observations might be due to composition effects and takes the risks of ecological fallacies into account. Using individual-level data also allows us to question definitions of what counts as a top positions and enables us to exclude or include occupations from this definitions. However, to the author's knowledge there are no other papers using comparable definitions of the gender gap, which is why all assumptions on the impact of individual and job characteristics on women's relative access to top positions compared to men's need to be checked. Lastly, using individual-level data does not only enable the author to redefine the dependent variable itself and control for individual-level characteristics, but also allows the researcher to choose a particular sample, in this case highly educated individuals.

The following Chapter discusses first the descriptive statistics on the gender gap as defined in Chapter 3. Here, the gender gap in top positions amongst highly educated individuals is compared to individuals from all educational levels in order to illustrate the differences between the two samples and to further justify choosing highly educated individuals as the sample size. For this purpose, women's share among professional and/ or managerial positions is presented first, using individual level data but without controlling for individual and job level characteristics. Again, data here is presented for highly educated individuals and the overall

population. Because one of the key contributions of this thesis is to use individual and context level data, a multilevel analysis is conducted for both samples and both definitions of top positions. This again is to illustrate the differences between the two samples, but also to show step by step – and by adding key explanatory variables – how much more insight individual level data can give us on the gender gap. For this, the empty model is compared to a random intercept model using gender as the key independent variable, then a random intercept model adding all control variables and lastly, a random slope model is conducted to show cross-national variation in the gender gap. Then, to show exactly how countries differ and vary, the fixed effects are discussed by country.

In a last step, the random effects for each country are presented in order to highlight in a multilevel model how much countries differ from the global average and how the variance component for the random slope varies. An analysis of the results links the research questions back to the descriptive findings and is lastly followed by a short conclusion.

## 5.1 Background and Research Questions

The dependent variable in this thesis is the gender gap in top positions. Besides methodological reasons, the main reason for focusing on vertical segregation and particularly the gender gap in top positions is that "vertical segregation is the key issue from a policy perspective" with gendered hierarchies being the key cause for pay differentials (Hakim, 1992, p.132). Therefore, the overall research question of this Chapter is:

**To what extent does women's likelihood to be employed in a top position relative to men's vary across countries?**

Following the theoretical and empirical discussions of Chapter 2, the general assumption is that **H1.1** Women generally are less likely to reach top positions even after controlling for individual and job level characteristics. What is more, **H1.2** argues that the impact gender has on reaching top positions varies significantly across countries. In other words, the gender gap in top positions varies significantly across countries.

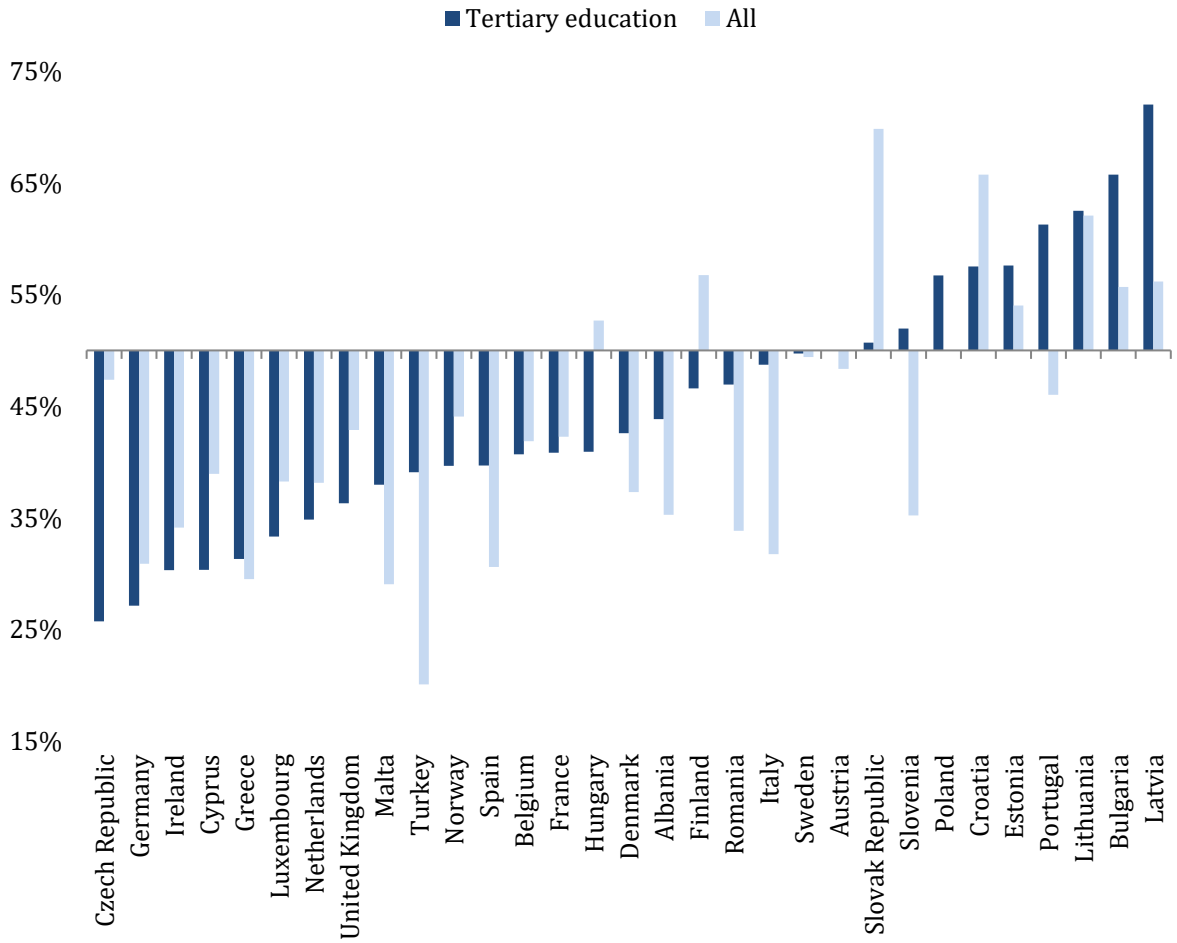
However, the third hypothesis **H1.3** argues that cross-national variation of the gender gap in to positions is different for highly educated women than the general female workforce, even after controlling for educational levels. This assumption is another key contribution of this thesis. This is based on two assumptions. The first one is that from a descriptive point of view, highly educated women's employment patterns as discussed in Chapter 2 vary drastically from women with lower levels of education. While highly educated women's employment rates for example have always been high, less educated women's employment rates have increased dramatically over the past decades. However, both groups are subject to the same policies and institutions in a country, which is why we can assume that highly educated women react differently to policies than women with lower levels of education. Secondly, scholarly work reviewed in Chapter 2 that examines gendered hierarchies (see Schäfer *et al.*, 2012) using individual level data, finds that education levels significantly increase women's chances to reach top positions. Thus, the question arises whether controlling for educational levels is sufficient as the nature of top positions requires a high level of skills and holding educational levels constant might not allow us to understand the direct impact of other individual and later on context level variables on the group that is most likely to reach top positions – highly educated women.

Thus, there is a need to clearly distinguish between the two samples. This is done in the following analysis by comparing how individual level variables affect the gender gap both for highly educated individuals and the general workforce.

## 5.2 Descriptive statistics

To begin the discussion of the descriptive statistics, we need to understand how crucially individual and job level characteristics impact women's access to top positions. Figures 1 and 2 show women's share in professional and/or managerial occupations across 31 European countries. Data is from 2010 and stems from the European Working Conditions Survey and has only been weighted, but not controlled for various individual-level factors.

**Figure 5.1 Women's share in managerial and professional occupations, across 31 European countries, 2010**



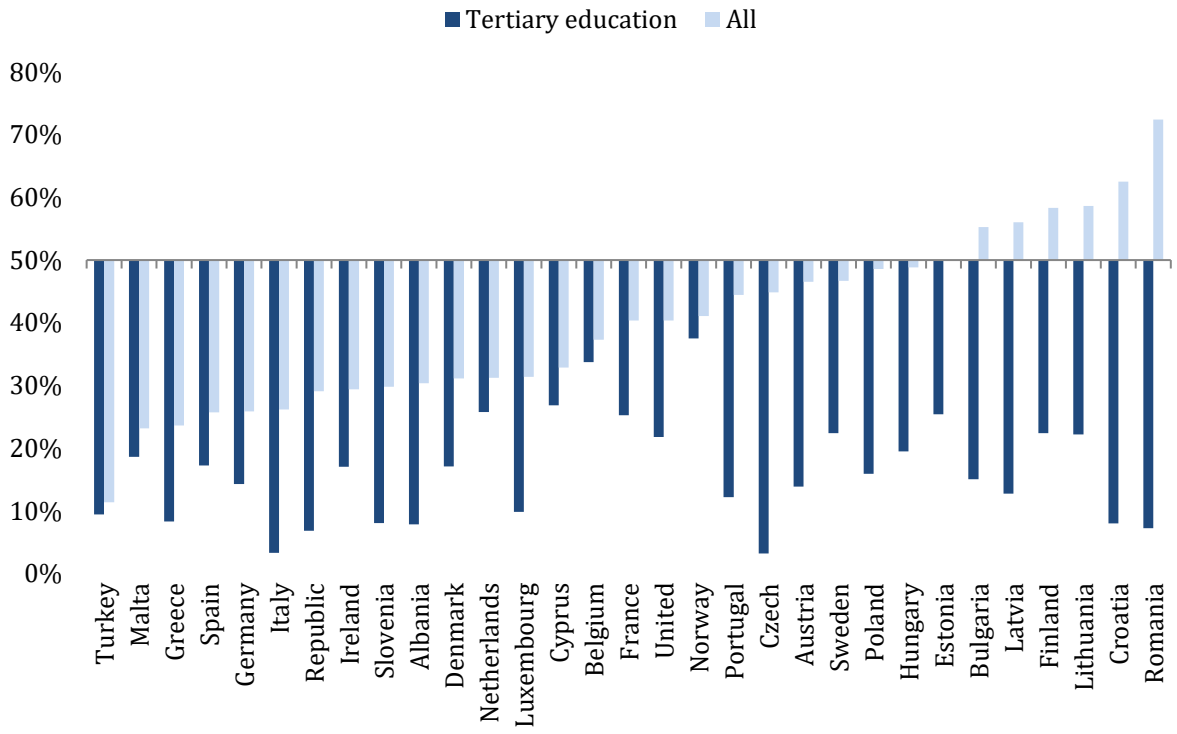

Source: European Working Conditions Survey (2010)

As figure 5.1 shows, across 31 European countries in 2010, in 9 countries – less than a third – women are overrepresented in managerial and highly professional occupations as defined in Chapter 3.2. If we look at the distribution of female managers and professionals across countries in greater detail, we can distinguish between countries with a relatively even share of male and female workers in top positions. These are countries where more than 40 percent of managers and professionals are female, but less than 60. Relatively gender-egalitarian – a ratio between 52 and 40 percent – are the Scandinavian countries Norway, Finland, Denmark and Sweden; Spain, France, the Central European states Hungary, Austria; Albania; and the Western European counties Belgium; and the Eastern European countries Slovak Republic, Romania and Slovenia. Particularly in Central Europe and the Eastern European countries, women seem to be overrepresented in managerial and professional occupations with a relatively high share of women in top positions in Poland, Latvia, Bulgaria, Estonia, Lithuania and Croatia. Portugal as the only Mediterranean country stands out with over 61 percent of top positions held by women in 2010.

On the other side of the spectrum, we find particularly low rates of female managers and senior professionals in the Mediterranean states Greece, Italy, Turkey, Malta and Cyprus. Western European countries such as Germany, Luxembourg, Ireland and Denmark show comparably low rates of women in top positions. The Netherlands and France are not lagging as far behind as their Western European neighbours, but show relatively high levels of vertical segregation as well. Thus, we can say that vertical segregation across Western and Southern Europe does not seem to follow any clear pattern. While we find that all Baltic and some Central European countries seem to have more women than men in top positions, Scandinavian countries with the exception of Denmark seem to have low level of vertical segregation with women and men being equally represented in top positions. On average, women in Western and Southern European countries with the exception of Portugal, are highly underrepresented with exceptionally low rates of less than a third of female managers and senior professionals in Greece, Italy, Germany and Czech Republic.

What is more, we find that including the overall population creates a very different picture with all Eastern and Central European countries having more than 50 percent of women in senior professional and managerial positions, but all Mediterranean and Western European economies having less than 50 % of top positions filled with female workers. The only Scandinavian country with more than 50 percent of women in top positions is Finland and Denmark for example only has 37 percent of top positions filled with women.

**Figure 5.2 Women's share in managerial occupations, across 31 European countries, 2010**




Source: European Working Conditions Survey (2010)

If we narrow the definition of top positions down to managerial occupations only, we find that there is not a single country with more highly educated women in top positions than men (see figure 5.2). Only in Norway and Belgium, more than a third of all managers are women. In Cyprus, the Netherlands, Estonia, France, Sweden, Finland, Lithuania, the UK, Hungary and Malta roughly a fifth of all managers are women. In Luxembourg, Portugal, Latvia, Austria, Germany, Bulgaria, Poland, Ireland, Denmark and Spain between 10 and 17 percent of all managers are

women. We find less than 1 in 10 managers to be female in Czech Republic, Italy, Slovakia, Slovenia, Albania, Romania, Greece, Croatia and Turkey. Thus, it already becomes apparent that the gender gap does not seem to follow any clear patterns.

For the overall workforce, we find highly contrasting results with Romania for example having 72 percent of managers female and Croatia 63 percent. In Lithuania, Finland, Latvia, Bulgaria, Estonia, Hungary, Poland, Sweden, Austria, Czech Republic and Portugal between 44 and 59 percent of all managers are female. Between 29 and 41 percent of all managers are female in Norway, UK, France, Belgium, Cyprus, Luxembourg, Netherlands, Denmark, Albania, Slovenia, Ireland and Slovakia. Turkey, Malta, Greece, Spain, Germany and Italy have the lowest share of women in managerial positions when examining the overall workforce.

These results are surprising, as it seems that the gender gap in top positions is much more striking and negative when only looking at highly educated individuals. The assumption would have been the other way around with education and human capital being one of the key qualifications for managerial positions. However, it seems that education does not seem to close the gender gap, but even widens it.

As stated previously, the presented data ignores individual characteristics that might have a significant impact on workers' likelihood to progress in their careers. As argued by Baxter and Wright (2000), controlling for individual and job attributes can either decrease or increase the gender gap in top positions and thus impact vertical segregation. If for example women in Baltic countries have a common attribute that distinguishes them from men – for example higher levels of qualifications – then not holding this attribute constant, leads to a distortion and does not reflect the actual level of discrimination happening. Additionally, we need to find a way of comparing the cross-national variation in women's likelihood to reach top positions taking the hierarchical structure of the data used into account.

Table 5.1 illustrates the results of a multilevel analysis for the smaller sample – individuals with tertiary education. The empty model 1-1, first column, shows how high an individual's likelihood to reach a managerial or senior professional occupation is on average and how much this likelihood varies across countries. Generally, we can say that in 2010 individuals were less likely to reach managerial and senior professional positions than other positions as indicated by the statistically significant negative coefficient of -.77. What is more, looking at the ICC we find that across countries the likelihood of reaching a top position varies significantly. However, of all variance only two percent lies at the country level. For the purpose of this thesis, this low ICC however does not matter, as we are not interested in significant variance of the individuals' chances to reach the top, but in the gender gap and thus only the gender coefficient and random slope models are of interest.

The random intercept model, second column, now includes the key independent individual-level variable, which is gender. We can see that as observed in figure 5.1 and 5.2, women on average, across our 31 countries, have statistically significantly lower chances to reach managerial and senior professional occupations. Adding gender as the key individual-level variable to explain cross-national level variation in workers' likelihood to reach top positions, consequently leads to an even less variance explained at the country level. Nevertheless, the model seems to be a better fit as indicated by the change in log likelihood of 122.02 from -6593.87 to -6471.85.

Since one of the methodological contributions of this analysis is to take into account not only the nested data structure, but also numerous individual and job attributes, we need to control for age, migration, part-time work, the presence of (preschool) children, living with a partner, company size, public sector and training experience based on previous studies of occupational segregation and sectors (see also, Mandel and Shalev, 2009; Burchell *et al.*, 2015; Dolado *et al.*, 2002, 2003, Maume, 1999; Schäfer *et al.*, 2012).

In a last step, fourth column of table 5.1, the model allows the impact gender has on employees' chances to reach managerial and senior professional positions to vary across countries. This means that the model takes into account that female workers are not disadvantaged or advantaged to the same extent in every country that is included in the models. The random slope model shows that this assumption is correct as the variance of the impact gender has on employee's chances to reach top positions is statistically significant – as we can see from the statistically significant variance of the variable female across our level 2 - countries. Thus, women's chances to reach top positions relative to men's are significantly lower on average, but also vary statistically significantly across countries as shown in the log likelihood but also significance of the random slopes variance component.

**Table 5.1 Multilevel Analysis of managerial and senior professional occupations, tertiary education**

| Management and Senior professionals (tertiary) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Empty model 5-1-1** | | **Random intercept 5-1-2** | | **Random Intercept with individual level variables 5-1-3** | | **Random slope with individual level variables 5-1-4** | |
| | coefficient | s.e. | coefficient | s.e. | coefficient | s.e. | coefficient | s.e. |
| **Female** | | | -0.67*** | 0.04 | -0.41*** | 0.05 | -0.37*** | 0.08 |
| **Constant** | -0.77*** | 0.06 | -0.42*** | 0.06 | -.94 ** | 0.34 | -1.00*** | 0.33 |
| | | | | | | | | |
| **Variance female** | | | | | | | 0.11* | 0.05 |
| **Variance country level** | 0.08*** | 0.02 | 0.09** | 0.03 | 0.14*** | 0.04 | 0.10*** | 0.03 |
| **Variance individual level** | 3.29 | | | | | | | |
| **ICC/ Explained variance country level** | 0.02 | | -0.13 | | -0.56 | | -0.07 | |
| **Loglikelihood** | -6593.87 | | -6471.85 | | -5898.28 | | -5889.07 | |
| **Change in loglikelihood** | | | 122.02 | | 573.57 | | 9.21 | |

Note: *** = p <0.001, ** = p < 0.01, * = p < 0.05; N=level 2=31, level 1=10,908

Table 5.2 now presents the same models but for the bigger sample size – the overall workforce. This is done in order to provide further evidence to the idea that education levels crucially impact the position of men and women in the labour market and that the two samples should be treated separately in the later analysis. Here, we see again that the overall chance of

an individual to reach a managerial and senior professional position is negative and thus it is harder and less likely to obtain top positions compared to others. Four percent of the variance here is at the country level, which is more than for highly educated individuals. In addition to that, we again see in the next random intercept model that gender plays a significant role. It lowers chances to reach a top position by -.39, which is however not as negative as in figure 1 for highly educated individuals (the coefficient here was -.67). Thus, even though gender is significantly negative, the association is weaker, which confirms the observation that the gender gap for highly educated women is even larger.

However, when we add a number of control level variables, including education level, to the model, gender has basically the same negative impact on access to top positions for both samples of around -.41 to -.42. We can see that adding control variables significantly improves the model and helps explain three percent more of the variance at the country level. Lastly, when allowing the impact gender has to vary across countries, we find again that the model significantly improves and what is more the cross-national variance of the gender gap is also significant. This means that like in table 5.1 for highly educated individuals, the impact of gender is not only negative, but it varies across countries. In other words, for the women in the included 31 countries it matters significantly in which context and country they live, as gender does not seem to have the same impact on access to top positions across Europe. In other words, the gender gap in the likelihood of obtaining top position varies across countries. However, we can also see that the coefficient for the random slope variance of gender is smaller for the overall workforce with .06* than for highly educated individuals with .11* entailing that the gender gap variance may be larger if we only examine higher educated workforce.

**Table 5.2 Multilevel Analysis of managerial and senior professional occupations, all educational levels**

| Management and Senior professionals (all) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Empty model 5-2-1** | | **Random intercept 5-2-2** | | **Random Intercept with individual level variables 5-2-3** | | **Random slope with individual level variables 5-2-4** | |
| | coefficient | s.e. | coefficient | s.e. | coefficient | s.e. | coefficient | s.e. |
| **Female** | | | -0.39*** | 0.03 | -0.42*** | 0.04 | -0.40*** | 0.06 |
| **Constant** | -1.83*** | 0.06 | -1.65*** | 0.06 | -2.14*** | 0.24 | -2.16*** | 0.24 |
| | | | | | | | | |
| **Variance female** | | | | | | | 0.06* | 0.03 |
| **Variance country level** | 0.11*** | 0.03 | 0.11*** | 0.03 | 0.11*** | 0.03 | 0.09*** | 0.03 |
| **Variance individual level** | 3.29 | | | | | | | |
| **ICC/ Explained variance country level** | 0.04 | | 0.02 | | 0.03 | | 0.18 | |
| **Loglikelihood** | -13871.24 | | -13794.96 | | -10855.46 | | -10847.58 | |
| **Change in loglikelihood** | | | 76.28 | | 3015.77 | | 3023.66 | |

Note: *** = p <0.001, ** = p < 0.01, * = p < 0.05; N=level 2=31, level 1=35,021

Focusing again on highly educated individuals as in table 5.1, in table 5.3 we find similar results when comparing women's chances to reach managerial positions only. However, findings are not as significant as for senior professional and managerial positions combined. Again, the empty model 5-3-1 as illustrated in table 5.3 shows significantly lower chances for all employees to reach a managerial positions than other occupations. Additionally, we find a significant variation across countries, but only three percent of all variance lies at the country level. The variance at the country level for managerial jobs is slightly higher than for senior professional and managerial jobs. According to the random intercept model, we find that for women it is statistically significantly even harder to reach managerial positions than managerial and senior professional jobs with a coefficient of -.73 (model 5-3-2, table 5.3) compared to -.67 in model 5-

1-2 in table 5.1. In the random slope model, we see that the impact gender has on the likelihood to reach a managerial position varies across countries, although the variance component is statistically significant only at a 0.10 level. Allowing the slope to vary, when comparing the log likelihood the model is improved by 3.12 but again only at a 10% significance rate.

**Table 5.3 Multilevel Analysis of managerial occupations, tertiary education**

| **Management (tertiary)** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Empty model 5-3-1** | | **Random intercept 5-3-2** | | **Random Intercept with individual level variables 5-3-3** | | **Random slope 5-3-4** | |
| | coefficient | s.e. | coefficient | s.e. | coefficient | s.e. | coefficient | s.e. |
| **Female** | | | -0.73*** | 0.07 | -0.37*** | 0.08 | -0.39*** | 0.10 |
| **Constant** | -2.42*** | 0.07 | -2.06*** | 0.07 | -3.78*** | 0.57 | -3.79*** | 0.57 |
| | | | | | | | | |
| **Variance female** | | | | | | | 0.10€ | 0.06 |
| **Variance country level** | 0.09** | 0.03 | 0.08** | 0.03 | 0.11** | 0.04 | 0.10* | 0.04 |
| **Variance individual level** | 3.29 | | | | | | | |
| **ICC/ Explained variance country level** | 0.03 | | 0.06 | | -0.18 | | 0.03 | |
| **Loglikelihood** | -3228.74 | | -3172.82 | | -2858.87 | | -2855.75 | |
| **Change in loglikelihood** | | | 55.92 | | 313.95 | | 3.12 | |

Note: *** = p <0.001, ** = p < 0.01, * = p < 0.05; N=level 2=31, level 1=10,908

Examining again the overall and not just tertiary educated workforce, we find similar but different results in Table 5.4. According to the empty model, it is harder to reach managerial positions than other occupations as indicated by the strongly negative coefficient. Five percent lies at the country level, which is more variance at the country level than for highly educated individuals. Gender again has a significantly negative effect with -.58*** which is slightly weaker than for the previous sample. However, again, after adding control level variables again controlling for educational levels, the impact of gender on managerial positions is basically the same for both sample sizes meaning that indeed women are less likely to reach the top, no matter which sample we choose. However, in contrast to table 5.3, the impact gender has on access to top position does not vary significantly across countries. This means that when examining the overall workforce and despite controlling for education, the gender gap does not vary across countries, meaning that women find the same obstacles in every country. In contrast to this, we find that when looking at highly educated individuals only, the gender gap varies significantly across countries.

**Table 5.4 Multilevel Analysis of managerial occupations, all educations**

| Management | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Empty model 5-4-1** | | **Random intercept 5-4-2** | | **Random Intercept with individual level variables 5-4-3** | | **Random slope with individual level variables 5-4-4** | |
| | coefficient | s.e. | coefficient | s.e. | coefficient | s.e. | coefficient | s.e. |
| **Female** | | | -0.58*** | 0.05 | -0.38*** | 0.05 | -0.39*** | 0.06 |
| **Constant** | -2.86*** | 0.08 | -2.60*** | 0.08 | -3.04*** | 0.35 | -3.04*** | 0.35 |
| | | | | | | | | |
| **Variance female** | | | | | | | 0.03 | 0.03 |
| **Variance country level** | 0.18*** | 0.05 | 0.16*** | 0.05 | 0.21*** | 0.06 | 0.20*** | 0.06 |
| **Variance individual level** | 3.29 | | | | | | | |
| **ICC/ Explained variance country level** | 0.05 | | 0.11 | | -0.12 | | -0.07 | |
| **Loglikelihood** | -7709.08 | | -7633.50 | | -6284.07 | | -6283.18 | |
| **Change in loglikelihood** | | | 75.58 | | 1425.01 | | 0.89 | |

Note: *** = p <0.001, ** = p < 0.01, * = p < 0.05; N=level 2=31, level 1= 35,021

Looking more closely at the individual and job attributes that are controlled for in the random intercept and random slope models, we can see that most of the assumptions made in Chapter 3 are true. Table 5.5 lists all control variables both for the likelihood to reach managerial and table 5.6 to reach managerial and senior professional occupations. First of all we find that, for both dependent variables, sectors seem to crucially impact individuals' likelihood to reach top positions. For managerial jobs for example, we find that working in any of the listed industries

seems to lower chances to reach top positions with education having the strongest negative impact, followed by the health sector, construction, the transport sector, the industry, other services and financial services and lastly by public administration. This is the case both for the overall workforce and tertiary educated individuals.

However, comparing the coefficients for managerial positions with the wider definition of managerial and senior professional jobs, the results change slightly. For highly educated individuals, only education and the transport sector seem to significantly decrease individuals' likelihood to reach top positions, whereas other services and health significantly improve chances. Working in the public sector generally seems to negatively impact chances both to reach managerial and/or senior professional positions. For the overall workforce however, we find that working in the industry, construction and financial sector – all highly male dominated – decreases individuals' access to managerial and senior professional positions.

Additionally, the company size affects both sample differently. For highly educated individuals aiming for managerial positions the size of the company does not seem to matter. However, for highly educated employees reaching managerial and senior professional levels, being employed at a large company has a significantly positive impact on reaching more senior top positions. For the overall workforce we can see that no matter which dependent variable we apply, individuals generally benefit from working at a large company, whereas working for a small company seems to significantly decrease their chances to reach a more senior position.

As expected, part-time employment in any case hinders individuals from reaching top positions. What is more, for the overall workforce, paid training shows no significant effect in either models, while for highly educated individuals it increases chances to reach managerial positions (see table 5.5). Therefore, we can say that training seems to matter more for the very top positions and highly educated individuals. Against expectations, migration background has no significant impact in any of the models.

Another interesting finding is that the presence of children or being in a relationship have no impact on tertiary educated individuals. However, if we look at the overall workforce, we can see that having a partner significantly increases chances to reach top positions (see table 5.5 and 5.6). While for the overall workforce having children decreases their chances to have a managerial and senior professional position (table 6), we find that having a child at preschool age significantly increases chances to reach a managerial position (table 5.5). For highly educated individuals, the youngest child being preschool age apparently has a significantly positive impact on individuals to reach managerial and senior professional jobs, while this impact is not significant for managerial positions only.

In general and for all models, age has a significantly positive impact on employees' chances to reach top positions. As expected, part-time employment seems to hinder individuals from reaching top positions in general.

To summarize, the majority of the selected control variables seem to have a statistically significant effect on either both or at least one of the outcome variables. Especially sectors, part-time employment and age seem to significantly influence an individuals' likelihood to reach a top position. Thus, we need to control for these individual and job attributes in order to see to what extent gender has an impact on employees' likelihoods to reach the top. Additionally, we can expect that after controlling for the listed variables, cross-national variation in vertical segregation is likely to look different than in figure 1 and 2 after having controlled for individual attributes. Lastly, we can already see that individual-level factors affect highly educated employees differently than the overall workforce. This difference is most striking for children in the household and partner. What is more, public sector employment seems to negatively affect the overall workforce, but not highly educated individuals. With regards especially to Chapter 5 in which the association between family policies and the gender gap is discussed, these

differences are worth keeping in mind as they provide another justification why we need to clearly distinguish between education levels.

**Table 5.5 Random intercept and random slope multilevel models, managers**

| | Managers (tertiary) | | | | Managers (all) | | | |
|---|---|---|---|---|---|---|---|---|
| | Random intercept with individual level variables | | Random slope | | Random intercept with individual level variables | | Random slope | |
| | coefficient | s.e. | coefficient | s.e. | coefficient | s.e. | coefficient | s.e. |
| Age | 0.13*** | 0.03 | 0.14*** | 0.03 | 0.09*** | 0.02 | 0.09*** | 0.02 |
| Age2 | 0.00*** | 0.00 | 0.00*** | 0.00 | 0.00*** | 0.00 | 0.00*** | 0.00 |
| Having children | -0.03 | 0.10 | -0.04 | 0.10 | -0.02 | 0.07 | -0.03 | 0.07 |
| Having a partner | 0.14 | 0.09 | 0.13 | 0.09 | 0.16* | 0.06 | 0.16* | 0.06 |
| Youngest child in preschool | 0.13 | 0.12 | 0.13 | 0.12 | 0.14€ | 0.09 | 0.15€ | 0.09 |
| Part-time employed | -0.59*** | 0.12 | -0.61*** | 0.12 | -0.92*** | 0.08 | -0.93*** | 0.08 |
| Migrant | -0.03 | 0.10 | -0.03 | 0.10 | -0.03 | 0.08 | -0.03 | 0.08 |
| Industry sector | -1.08*** | 0.13 | -1.09*** | 0.13 | -1.53*** | 0.09 | -1.53*** | 0.09 |
| Construction | -1.69*** | 0.23 | -1.70*** | 0.23 | -2.74*** | 0.18 | -2.74*** | 0.18 |
| Transport sector | -1.68*** | 0.26 | -1.68*** | 0.26 | -2.14*** | 0.18 | -2.14*** | 0.18 |
| Financial Services | -0.83*** | 0.14 | -0.83*** | 0.14 | -0.83*** | 0.11 | -0.83*** | 0.11 |
| Public Administration | -0.65*** | 0.15 | -0.66*** | 0.15 | -0.52*** | 0.11 | -0.52*** | 0.11 |
| Education | -2.58*** | 0.20 | -2.60*** | 0.20 | -2.25*** | 0.16 | -2.25*** | 0.16 |
| Health Sector | -1.86*** | 0.16 | -1.88*** | 0.16 | -1.99*** | 0.13 | -2.00*** | 0.13 |
| Other Services | -0.86*** | 0.11 | -0.87*** | 0.11 | -0.90*** | 0.07 | -0.90*** | 0.07 |
| Paid training | 0.19* | 0.07 | 0.18** | 0.07 | 0.06 | 5.93 | 0.06 | 5.92 |
| Small Company | 0.01 | 0.09 | 0.01 | 0.09 | -0.22** | 0.08 | -0.22** | 0.08 |
| Large Company | 0.15 | 0.11 | 0.16 | 0.11 | 0.26** | 0.09 | 0.26** | 0.09 |
| Public sector | -0.21* | 0.10 | -0.20* | 0.10 | -0.04 | 0.08 | -0.05 | 0.08 |
| Higher Education | x | x | x | x | 0.92*** | 0.06 | 0.92*** | 0.06 |
| Employment status | -0.74*** | 0.10 | -0.74*** | .10 | -1.73*** | 0.06 | -1.73*** | 0.06 |
| Female | -0.37*** | 0.08 | -0.43*** | 0.10 | -0.38*** | 0.05 | -0.39*** | 0.06 |
| Constant | -4.64*** | 0.56 | -4.64*** | 0.56 | -3.04*** | 0.35 | -3.04*** | 0.35 |

Note: *** = p <0.001, ** = p < 0.01, * = p < 0.05; N=level 2=31, level 1=10,908(tertiary)/ level 1=35,021 (all)

**Table 5.6 Random intercept and random slope multilevel models, senior professionals and managers**

| | Managers and Senior professionals (tertiary) | | | | Managers and Senior professionals (all) | | | |
|---|---|---|---|---|---|---|---|---|
| | Random intercept with individual level variables | | Random slope | | Random intercept with individual level variables | | Random slope | |
| | coefficient | s.e. | coefficient | s.e. | coefficient | s.e. | coefficient | s.e. |
| Age | 0.06*** | 0.02 | 0.06*** | 0.02 | 0.05*** | 0.01 | 0.05*** | 0.01 |
| Age2 | 0.00** | 0.00 | 0.00** | 0.00 | 0.00** | 0.00 | 0.00** | 0.00 |
| Having children | -0.14 | 0.07 | -0.14 | 0.07 | -0.10* | 0.05 | -0.10* | 0.05 |
| Having a partner | 0.10 | 0.05 | 0.10 | 0.05 | 0.12** | 0.04 | 0.11** | 0.04 |
| Youngest child in preschool | 0.20** | 0.08 | 0.22** | 0.08 | 0.18** | 0.06 | 0.19*** | 0.06 |
| Part-time employed | -0.55*** | 0.06 | -0.54*** | 0.07 | -0.75*** | 0.05 | -0.73*** | 0.05 |
| Migrant | 0.04 | 0.07 | 0.05 | 0.07 | -0.02 | 0.05 | -0.02 | 0.05 |
| Industry sector | -0.11 | 0.09 | -0.10 | 0.09 | -0.79*** | 0.06 | -0.78*** | 0.06 |
| Construction | -0.15 | 0.13 | -0.15 | 0.13 | -1.35*** | 0.10 | -1.34*** | 0.10 |
| Transport sector | -0.84*** | 0.16 | -0.82*** | 0.16 | -1.48*** | 0.12 | -1.48* | 0.12 |
| Financial Services | 0.02 | 0.10 | 0.02 | 0.10 | -0.21* | 0.08 | -0.21* | 0.08 |
| Public Administration | 0.26 | 0.11 | 0.27 | 0.11 | 0.03 | 0.08 | 0.03 | 0.08 |
| Education | -1.13*** | 0.11 | -1.15*** | 0.11 | -1.40*** | 0.09 | -1.41*** | 0.09 |
| Health Sector | 0.31*** | 0.09 | 0.33*** | 0.09 | -0.24** | 0.07 | -0.22** | 0.07 |
| Other Services | 0.62*** | 0.08 | 0.63*** | 0.08 | 0.11* | 0.05 | 0.12* | 0.05 |
| Paid training | 0.05 | 3.71 | 0.05 | 3.67 | 0.04 | 8.97 | 0.04 | 8.94 |
| Small Company | -0.06 | 0.06 | -0.06 | 0.06 | -0.21*** | 0.05 | -0.20*** | 0.05 |
| Large Company | 0.38*** | 0.07 | 0.38*** | 0.07 | 0.38*** | 0.06 | 0.39*** | 0.06 |
| Public sector | -0.44*** | 0.06 | -0.43*** | 0.06 | -0.23*** | 0.05 | -0.23*** | 0.05 |
| Higher Education | x | x | x | x | 2.05*** | 0.04 | 2.05*** | 0.04 |
| Employment status | -0.76*** | .07 | -0.76*** | .07 | -1.35*** | 0.05 | -1.35*** | 0.05 |
| Female | -0.45*** | 0.05 | -0.40*** | 0.08 | -0.42*** | 0.04 | -0.40*** | 0.06 |
| Constant | -1.78*** | 0.32 | -1.83*** | 0.32 | -2.14*** | 0.24 | -2.16*** | 0.24 |

Note: *** = p <0.001, ** = p < 0.01, * = p < 0.05; N=level 2=31, level 1=10,908(tertiary)/ level 1=35,021 (all)

What is more, with multilevel modelling we can also take the nested structure of our data into account and examine not only whether women on average are less likely to reach top positions, but more importantly how the effect gender has on career perspective varies across countries whilst controlling for individual and job attributes.

**Random effect models**

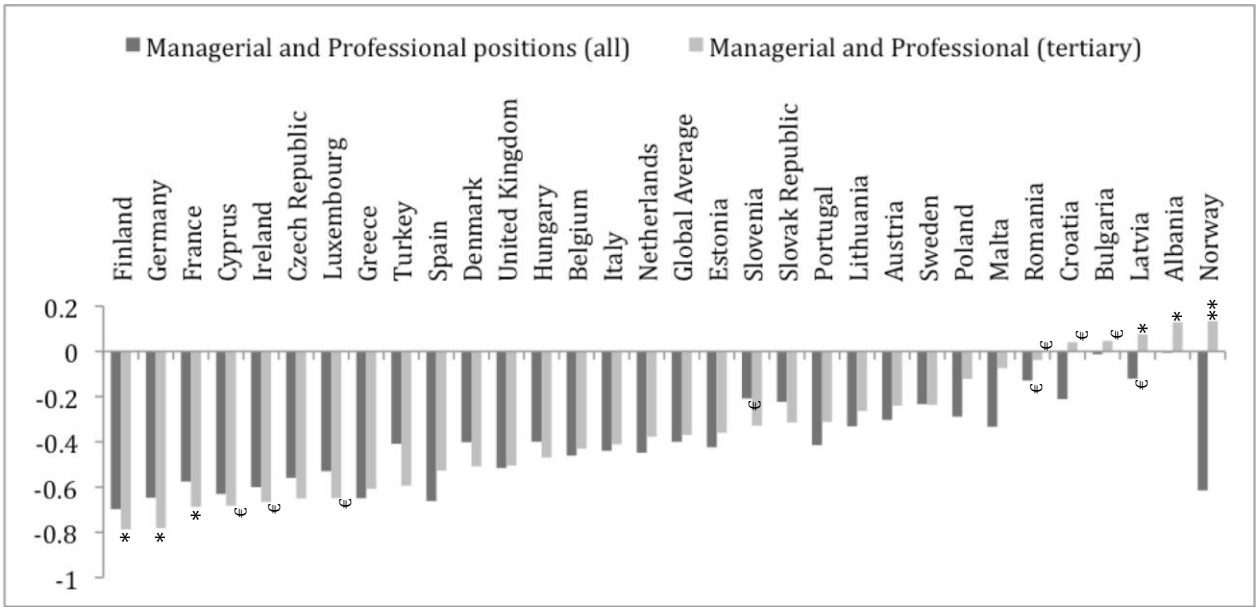
According to the random slope models in table 5.3 and 5.4, we can see that the gender gap in senior professional and/ or managerial positions for highly educated individuals varies significantly between countries, and for the overall workforce when looking at access to managerial and senior professional positions. In other words, women's chances to reach top positions are significantly dependent on the country we examine. However, which countries drive these significant variations?

Figure 5.3 illustrates each country's random effects for the wider definition of top positions – senior professional and managerial jobs both for highly educated women and the overall female workforce. The global average for the gender gap for highly educated individuals is -.37 (see table 1). Thus, we can say that on average men are 1.4 times more likely to reach senior professional and managerial positions compared to women with coefficients ranging from -.79* in Finland and -.78* in Germany (2.2 times more likely) to .10* (0.90 odds for women) in Albania and .10** in Norway. For the overall workforce, the global average is -.40 (see table 2) with countries ranging from -.70 in Finland and -.66 in Spain to -.01 in Bulgaria and 0 in Albania. Here * or € indicates that the values are statistically different from the mean.

We can see that amongst 31 European countries only in Croatia, Bulgaria, Latvia, Albania and Norway highly educated women seem to be more likely than men to have a managerial or

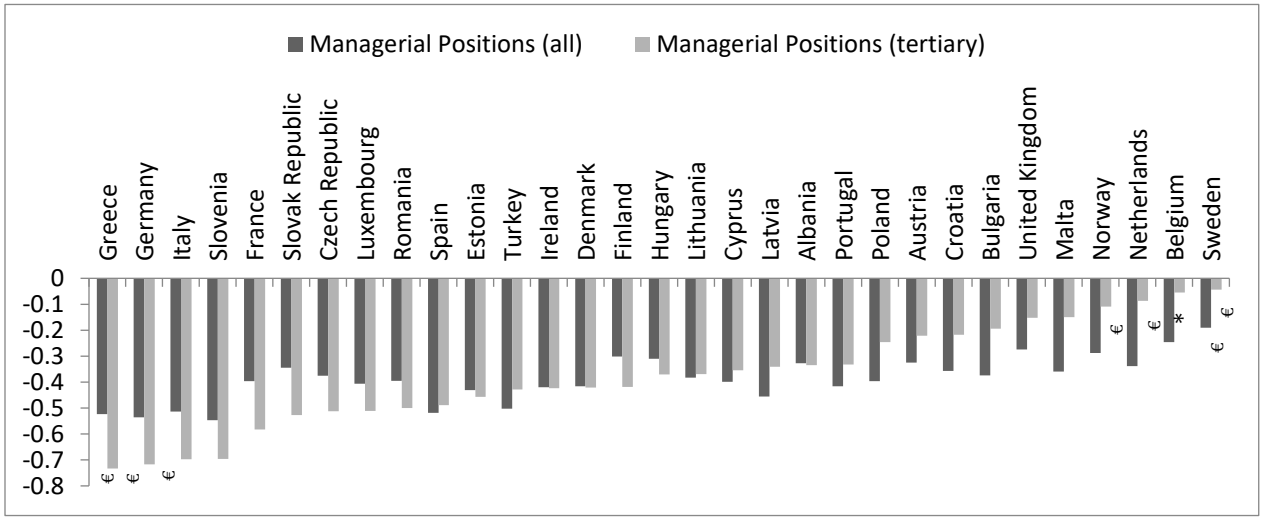
senior professional job, while for the overall female workforce there is not a single country where women are overrepresented in those jobs. We can also see how much every country varies from the global average of -.37 (tertiary educated sample) and -.40 (all educational levels). Only Poland, Malta, Romania, Croatia, Bulgaria, Latvia and Norway are clearly above the average for highly educated individuals. We also find Sweden, Austria, Lithuania, Portugal, Slovakia, Slovenia and Estonia above the average. Most striking are Slovenia and Slovakia which are doing much better than the global average and again Norway whose gender gap is much higher than the global average. However, while the extent of the gender gap varies, the overall tendency of countries in regards to how they differ from the average is similar to the smaller sample size.

**Figure 5.3 Random effects – Women's likelihood to reach managerial and senior professional positions**




Notes: ***= p<.001, **= p<.01, *= p<.05, €=p<.10. These values are statistically different from the global mean.

**Figure 5.4 Random effects – Women's likelihood to reach managerial positions, educational levels**




***= p<.001, **= p<.01, *= p<.05, €=p<.10. These values are statistically different from the global mean.

As a measure of robustness check, fixed effect models were conducted. Fixed effects models presented in table 5.7 illustrate whether women's likelihood to reach top positions varies significantly from the coefficient in Germany. Thus, with Germany being the reference group we are looking at ordinary logistic regressions, not taking the nested data structure into account. However, since at a later stage the aim of this analysis is to investigate the impact of national level variables on individual level data, both for methodological reasons and for a better overview, multilevel models are preferred over logistic regression. But in order to find out whether the random effects as described above are significant, Table 5.7 lists the results of the fixed effects models using Germany as the reference group and thus illustrates this cross-national variation of women's chances to reach top positions. In other words, the table shows how much in each country, women's likelihood to reach top positions varies from chances in Germany. Germany was chosen as the reference group as according to figure 1 and 2 women in Germany are highly underrepresented in top positions without controlling for individual-level factors. These control variables however are included in the fixed effects model in table 5.7.

Looking at the first two columns that use the smaller sample of individuals with tertiary education only, we see that in Germany, tertiary educated women are 3.4 times less likely (-1.22 units) likely than men to reach managerial positions; and men are 2.5 times more likely to reach managerial and senior professional jobs. Only in Italy and Greece women seem to be even less likely to reach managerial and/or senior professional positions. However, these coefficients are not statistically significantly different from Germany. Nevertheless, we find that in Belgium, Latvia, Lithuania, Malta, Netherlands, Austria Poland, Portugal, Sweden, United Kingdom, Croatia, Norway and Albania women are significantly more likely to reach a managerial position compared to Germany. However, with the average/ constant being -3.52, it needs to be noted that even in Croatia and Austria with coefficients >2 women are less likely than men to reach management. The same is true for managerial and senior professional positions. Here, women's likelihood to reach top positions is statistically different from Germany in Bulgaria, Belgium, Latvia, Lithuania, Malta, Portugal, Poland, Austria, Romania, Slovenia, Sweden, Croatia, Turkey and Albania. With the overall average being -1.45, we can see that in many countries the additional burden for women to reach top positions is only marginal. In Bulgaria, Latvia, Malta, Austria, Romania, Turkey and Albania for example, the country coefficients are >1 and thus nearly compensate for the negative overall average.

Moving on to column three and four that list the results for the overall workforce and not just the tertiary educated sample, we find different results. First of all, the impact of gender on access to top positions in Germany is less strong with only -.80 for managers and -.74 for senior professionals and managers. What is more, there are fewer countries significantly different from Germany – i.e. less variation across countries in the gender gap in obtaining top positions. Whereas highly educated women in Latvia and Lithuania, Malta and the Netherlands, Poland and Portugal face a significantly different gender gap in managerial positions compared to Germany, we do not find any significant variation for the overall female workforce. Consequently, the gender gap in managerial positions seems to be much more homogeneous, more dependent on individual-level factors and less dependent on the country context for the overall workforce

compared to highly educated women who seem to be much more dependent on the country context.

When comparing women's access to managerial and senior professional positions to the previous models, we find that in the Netherlands and again Slovak Republic women face significantly lower gender gaps when examining the overall workforce. However, in Belgium, Malta, Poland, Portugal and Turkey there are no significant differences to be found for the wider sample, even though in the previous model we see that highly educated women's access to top positions relative to men's is significantly higher and thus the gender gap smaller. The observation that the gender gap in top positions seems to vary more significantly for highly educated women than for the overall female workforce suggests that either the models fail to incorporate and control for certain individual level variables or that highly educated women simply are more dependent on the context. In other words, women in every country and for all samples are less likely to reach senior professional and/ or managerial positions than men. We can see this from the results of the multilevel models in table 1 to 4. However, as indicated both by the random slope models presented in tables 1 to 4 and the fixed effects models in table 7, the scope of the gender gap in senior professional and/or managerial positions varies significantly for highly educated women. Consequently, context level factors are expected to significantly impact the gender gap for highly educated individuals. However, when examining the overall workforce, there is less variation of the gender gap and for managerial and senior professional positions no significant variation at all at the country level. These two observations – the difference between the two samples and the importance of context versus individual-level factors – again highlight the need for multilevel modelling. It is not only important to examine whether gender has a significant impact on individuals' likelihood to reach top positions, but more importantly whether women's relative likelihood to reach managerial positions varies across countries. In other words, we can see that women across 31 countries are not only less likely on average to reach the top, but that the context matters and chances to reach the top vary depending on the context, more specifically the country individuals live in.

**Table 5.7 Fixed effects model - Germany as reference group**

| | | Management (tertiary) | Managers and senior professionals (tertiary) | Management (all) | Managers and senior professionals (all) |
|---|---|---|---|---|---|
| 1.female | | -1.22*** | -0.91*** | -0.80*** | -0.74*** |
| **Interaction female#countries** | | | | | |
| 1#Bulgaria | | 1.67 | 1.25** | 0.49 | 1.05*** |
| 1#Czech Republic | | 0.57 | -0.18 | 0.66 | 0.01 |
| 1#Denmark | | 0.59 | 0.23 | 0.27 | 0.29 |
| 1#Belgium | | 1.32** | 0.51€ | 0.69* | 0.29 |
| 1#Estonia | | 0.42 | 0.51 | 0.17 | 0.29 |
| 1#Greece | | -0.35 | 0.25 | -0.15 | -0.05 |
| 1#Spain | | 0.58 | 0.38 | -0.31 | -0.11 |
| 1#France | | 0.53 | 0.21 | 0.43 | 0.17 |
| 1#Ireland | | 0.63 | 0.02 | 0.24 | -0.05 |
| 1#Italy | | -0.62 | 0.45 | -0.10 | 0.30 |
| 1#Cyprus | | 0.94 | 0.05 | 0.38 | -0.05 |
| 1# Latvia | | 1.42* | 1.16** | 0.07 | 0.75** |
| 1#Lithuania | | 1.00€ | 0.70* | 0.61 | 0.51€ |
| 1#Luxembourg | | 0.53 | 0.06 | 0.34 | 0.09 |
| 1#Hungary | | 0.94 | 0.38 | 0.84 | 0.42 |
| 1#Malta | | 1.58** | 1.05** | 0.48 | 0.42 |
| 1#Netherlands | | 1.39** | 0.49 | 0.53 | 0.19* |
| 1#Austria | | 2.00* | 1.20* | 0.74€ | 0.62* |
| 1#Poland | | 1.59* | 0.86* | 0.52 | 0.56 |
| 1#Portugal | | 1.37€ | 0.88€ | 0.29 | 0.33 |
| 1#Romania | | 0.24 | 1.09** | 0.31 | 0.82** |
| 1#Slovenia | | 0.01 | 0.69* | -0.24 | 0.70** |
| 1# Slovak Republic | | 0.23 | 0.55 | 0.82€ | 0.79* |
| 1#Finland | | 0.83 | -0.07 | 0.97* | -0.15 |
| 1#Sweden | | 1.43** | 0.62* | 0.95** | 0.51* |
| 1#United Kingdom | | 1.06* | 0.33 | 0.67* | 0.14 |
| 1#Croatia | | 2.43* | 0.77€ | 1.24* | 0.77* |
| 1#Turkey | | 0.61 | 1.30*** | 0.04 | 0.30 |
| 1#Norway | | 1.08* | 0.16 | 0.59€ | -0.06 |
| 1#Albania | | 1.50€ | 1.37*** | 0.69€ | 1.01*** |
| Constant | | -3.52*** | -1.45*** | -2.81*** | -2.42*** |

Note: *** = p <0.001, ** = p < 0.01, * = p < 0.05; N=level 2=31, level 1=10,908(tertiary)/ level 1=35,021 (all)

## 5.3 Discussion

As discussed in Chapter 2, women are disadvantaged in the labour market; for example in terms of employment rates, pay and hours worked. However, women's underrepresentation in managerial positions and thus occupational vertical segregation seems to be "the key issue from a policy perspective" (Hakim, 1992, p.132) as it is the main driver for wage differentials in the labour markets. However, only few studies have examined vertical segregation or the glass ceiling from a detailed comparative perspective using individual-level data. Consequently, before examining the association between macro-level variables and vertical segregation, the first hypothesis of this Chapter needs to be addressed. Is there a glass ceiling – or in other words: Are women generally less likely to reach top positions and more specifically, does vertical segregation also exists for highly educated women while holding individual and job characteristics constant?

The findings clearly suggest this. The glass ceiling exists, as there seems to be "a transparent barrier that kept women from rising above a certain level in corporations… It applies to women as a group who are kept from advancing higher because they are women" (Morrison *et al.* 1987, p. 13, as cited in Baxter and Wright, 2000, p.276). Looking back to Chapter 2, we find that based on macro-level data and following a general definition of management, only 33 percent of all managers were women in 2015 in comparison to 30 percent in 2010 on EU-27 average (see figure 2.8). While the definition of top positions here lacks precision and does not reflect status, for the purpose of this dissertation not simply managerial positions seem relevant, but rather employment relations and conditions. Thus, both immediate rewards in terms of the salary and long-term or prospective benefits such as career opportunities are relevant (see Chapter 3). Following a more specific definition of top position, we find in a first step that indeed women are less likely to reach top positions than men – both senior professional and/ or managerial positions. However, in contrast to the clear observation that women are

underrepresented in managerial positions following the Eurostat/ ILO definition, we find that in one third of the countries women are actually overrepresented in managerial and highly senior professional occupations as defined in Chapter 3.2. However, these findings change dramatically when controlling for individual-level and job factors such as sectors, part-time employment and age. In other words, part-time employment has a significantly negative impact on an individual's likelihood to reach a top position.

Thus, we could assume that because women are more likely to be working part-time, holding part-time employment constant should decrease vertical segregation as differences can be explained by full-time versus part-time. These findings support Baxter and Wright (2000) who argue that vertical segregation increases for part-time employment due to the "organizational costs for promoting part-time managers" (Baxter and Wright, 2000, p. 283). Age on the other hand has a significantly positive impact and thus corresponds with the idea of the accumulation of human capital over time. Experience and with it human capital is likely to increase over time and affects employees' likelihood to be in a higher positions (see Holst *et al.* , 2010 as cited in Schäfer *et al.*, 2012).

Sectors can play a role due to hierarchical structures that can either allow for more managerial positions or less. The key control variable however is gender and based on our models we see that gender significantly impacts an individual's likelihood to reach a top position. In other words, having controlled for various individual and job characteristics, we find that highly educated women are significantly less likely to reach a senior professional and/ or managerial position. Additionally, we can say that individual levels such as age matter significantly and vertical segregation actually becomes more striking and extreme when controlling for these factors. In other words, holding relevant factors constant, we still see that women are disadvantaged.

The second hypothesis **H1.2** claims that women's likelihood to reach top positions is not only generally lower, but also that the impact of gender and thus the gender gap varies significantly across countries. This hypothesis can be verified based on the random slope models, the fixed effects and random effect models as discussed above. While the random slope models provide the evidence that the context – in this case the country – impacts a woman's likelihood to reach a top position, the random effects also show how this impact varies across countries. However, results do not follow any clear patterns. As discussed in Chapter 2.1, corporatist Western European and Scandinavian countries have high levels of tertiary educated women in the labour market. Looking at pay differentials, we find that Western and some Eastern European countries show relatively high pay gaps, Nordic countries average levels and Mediterranean relatively low to medium levels. Regarding horizontal segregation, there were no clear patterns visible with Baltic and corporatist countries showing high rates of women in female-dominated occupations and Central and Eastern European countries relatively low levels. Focusing on vertical segregation only, Mandel and Semyonov (2005, 2006) and Pettit and Hook (2009), claim that vertical segregation does not seem to be lowest in Scandinavian countries despite high female employment rates and gender egalitarian policies in these countries. On the contrary, women's access to managerial positions seems to be lower in social democratic countries than in liberal regimes (Mandel and Semyonov, 2006). Using individual-level data, Fagan and Burchell (2002) come to similar results, but also are unable to identify clear patterns, as especially corporatist European countries do not generally follow the same trend.

Examining the random effects per country for women's likelihood to reach managerial and senior professional positions, we find some evidence for Mandel and Semyonov (2005, 2006), but also more details than Fagan and Burchell (2002) as the country sample also includes Eastern European countries. With the exception of Hungary and the Czech Republic, women in every formerly socialist country are more likely to reach to positions than the global average. Additionally, four of the five countries allowing women more than men to reach the top are formerly socialist. Focusing on Scandinavian countries, Norway performs particularly well and Sweden at least better than the average. However, in Denmark and Finland women are less likely

to reach top positions – both compared to the global average and per se. Corporatist and liberal countries seem to disadvantage women the most, with Austria being the only country above the average. Thus, while these findings support Mandel and Semyonov's (2005, 2006) claim that Scandinavian countries are not always the leaders in terms of gender equality, they at the same time do not support the idea of liberal countries facilitating women's access to top positions.

This becomes even more striking when looking at women's likelihood to reach managerial positions only. Here, we find not a single country increasing women's chances to reach top positions relative to men. The cross-national variation of gender does not follow any patterns. However, with regard to the hypothesis, we see a vast range of variation with Germany and Greece being on the most negative and Belgium and Sweden on the least negative end of the spectrum. Thus, we can say that women's chances to reach top positions vary significantly between countries. However, the distribution of this variation and the range depends dramatically on the sample, which leads to the third hypothesis.

The third hypothesis H1.3 claims that the gender gap is different among highly educated individuals than for the overall workforce. The assumption here is that again context matters and highly educated women respond differently to policies and institutions. As argued by Mandel and Shalev (2009), we need to distinguish between class and education in order to understand which context is advantageous for women and which one is not. The findings discussed in the previous section agree with this claim. Firstly, we can see that individual-level factors impact individuals in the samples differently. While for example having children and a partner significantly affect the likelihood of an individual to reach a top position if we only control for education, there is not significant effect if we narrow the sample fully down to highly educated individuals only. Thus, if for highly educated men and women, having children and partners does not affect their likelihood to have a top position, but it significantly impacts chances of individuals with lower levels of qualification, with regard to the later research questions, we need to narrow the sample down to highly educated individuals only. What is more we see that, according to the random

slope models, not only does education matter when it comes to our control variables; the impact of the independent explanatory variable – gender – also varies significantly between the two samples. While we find significant cross-national variation of the gender gap among highly educated individuals as discussed above, we only see a smaller or even insignificant gender gap among the overall workforce. This consequently reflects that, while for highly educated women's access to top positions certain countries are less detrimental than others and consequently the context matters, the same countries might be far more or even less detrimental for the overall workforce. For managerial and senior professional occupations, we find that in Norway for example the gender gap amongst highly educated women is much smaller than the average and actually women are more likely than men to have a top position. For the overall female workforce however, the gender gap in Norway is much higher than the global average. In contrast to this, in Denmark and Finland we find a much wider gender gap among highly educated employees compared to the overall workforce. We find similar results for access to managerial positions. In Norway and Sweden, the gender gap amongst highly educated women is much lower than for the overall female workforce, the opposite is the case for Finland.

These findings show that a gender gap for the overall workforce is meaningless, as it does not take into account how much education matters. What seems to work for highly educated women does not help the overall female workforce. And we see that when only looking at tertiary educated women the gender gap increases and becomes more significant. Treating women from different educational backgrounds as if they belonged to a homogenous group would therefore lead to misinterpretations and would not allow examination of the causes for cross-national variation of the gender gap because there is not just one gender gap.

What is more, these results show that particularly the countries causing the welfare state paradox, central to the following Chapter, show crucially different gender gaps for the two samples. With Norway and Sweden showing a higher gender gap amongst the general workforce, but particularly Finland the opposite, the Welfare State Paradox that is based on the overall

workforce and only controls for education needs to be revisited using highly educated individuals as the sample. The significance of the sample, but also the overall data leads to another important observation of this Chapter: The extent of the gender gap crucially depends on how we define top positions. Here, using individual-level data with more specific definitions of vertical segregation allows a more accurate picture of the gender gap. Hakim (1992) argues that this is due to problems with occupational classifications and the level of aggregation in the data. Estevez-Abe (2005) also uses macro-level data and suggests examining the share of women as corporate managers in order to fully capture the impact of institutions on segregation. However, indices based on aggregated data fail to represent the heterogeneity of the society and cannot capture segregation, which is why I argue that we need to instead apply individual level data.

And indeed, the findings so far show that extent of vertical segregation depends crucially on the definition of the dependent variable. Vertical segregation as measured in women's share in managerial occupations at the macro-level seems to be weakest in Eastern European welfare states and Sweden. However, we cannot say that the Scandinavian countries are doing particularly well and the corporatist countries are not. It seems that welfare regime theory is not the most useful concept to understand cross-nation variation. Again, these findings and also the data used follow Mandel and Semyonov (2005, 2006) and Estevez-Abe (2005).

However, if we start redefining vertical segregation the results change considerably. Managerial occupation now only includes occupations of the "higher salariat" (see Chapter 3.1) and excludes for example service managers. Secondly, following the definition of the higher salariat, we can also count senior professionals as top occupations and thus widen the definition of top positions. Lastly, only individuals with higher education are included in the sample. Before controlling for individual and job characteristics, we find surprisingly low levels of vertical segregation with women in a third of the countries being overrepresented in top positions. Adding control level variables however delivers more accurate and contrasting results. For managerial positions only, women in every country are underrepresented in top positions. In

other words, vertical segregation exists in all countries, but is the least negative in Sweden and Belgium.

Following the wider definition of vertical segregation, we can say that generally in Mediterranean, continental corporatist and Denmark and Finland as representatives of the Nordic countries women have to lowest chances to reach senior professional and managerial positions. On the other hand, Eastern European countries are more positive than the average for women's career perspectives.

To summarize, we can say that not only the distribution around the global average depends on how we define top positions, but also the likelihood to reach these positions per se. Women's chances to reach management positions are even lower than reaching senior professional and managerial jobs. Moreover, the impact of gender does not seem to vary as significantly as for the wider definition of top positions (senior professionals and managers). This observation also reflects the findings of the random slope variance being more significant for the wider definition than for managerial positions only.

## 5.4 Conclusion

The key finding of this Chapter is that the gender gap is not only more significant for highly educated women, but also larger than for the general female workforce. In other words, if we concentrate on a sample with high levels of education, it seems that gender plays an even larger role.

Thus, we can say that in 2010 on European average women were less likely to reach both managerial and/ or senior professional positions. Even though coefficients differ slightly, the

impact gender has on our dependent variable is almost the same for both the narrow and the wider definition of top positions. Additionally, we find that the impact gender has on vertical segregation varies significantly across countries. However, it is more statistically significant for senior professional and managerial positions than for managerial positions only, which may be due to the power of the overall model and the reduced sample size of the more narrow definition. Most importantly, the gender gap is bigger for highly educated women in comparison to less educated women. These findings highlight the first contribution of this thesis. Even though the majority of research assumes women to be a homogenous group and only controls for education, this thesis tests the validity of this assumption for the gender gap amongst highly educated individuals. The question that remains is what can explain for the cross-national variance in these gender gaps in obtaining top positions. This is the topic of the following Chapters.

## Chapter 6: The welfare state paradox and vertical segregation

As shown in the previous Chapter, women are statistically less likely to reach top positions, namely managerial and senior professional positions. In addition, the author found that the likelihood varies significantly across the countries examined in this thesis. The next step in this thesis is then to answer why such cross-national variance exists. This Chapter finds that assumptions are not true that are based on the overall workforce when we look at individual-level data, highly educated individuals only and also include a much wider range of family policies separately and not in a composite indicator. Maternity leave actually has no impact on the gender gap amongst highly educated individuals. Well-paid leave even seems to reduce the gender gap in managerial positions. The Chapter supports the claim made by Mandel and Shalev (2009) and Dorado *et al.* (2002) to be critical of the effect of policies on gender inequalities. It also shows that family policy indices and typologies do not capture the association between family policies and the gender gap and thus shows the limitations of these aggregate ways of measuring policies.

As explained in Chapter 2, the question remains why – despite progressive family policies – Northern welfare states still appear to have comparably high levels of occupational gender segregation (Estevez-Abe, 2005, p. 153). Mandel and Semyonov describe this phenomenon as the welfare state paradox by arguing that the "same welfare state activities that promote one dimension of gender equality appear to inhibit another dimension" (2006, p. 1942). In other words, family policies reinforce both gendered hierarchies within the labour market and the emergence of female- and male-typical jobs. Additionally, family policies interact with the socioeconomic position of women and affect highly skilled women differently than low skilled women (Mandel, 2012). While more generous welfare states demonstrably help women to enter the labour market, they at the same time appear to hinder women from reaching powerful positions (Mandel and Semyonov, 2006). However the apparent negative impact of family policies has been contested by various scholars. Korpi, Ferrarini and Englund (2013) for example question the welfare state paradox. They find no significant effect of family policies on highly

educated women's employment rates and argue that in countries with progressive dual-career policies, the chances for women obtaining a high position in the private labour market is higher than elsewhere. Keeping these contradictory empirical results in mind, this Chapter aims to answer the question: Do family policies truly decrease women's prospects of achieving top positions by affecting highly educated women's relative likelihood to have top positions differently than men's?

This Chapter contributes to the recent debate on the described relationship between family policies and occupational gender segregation in three ways. Firstly, by looking at purely vertical segregation at the individual level. The author argues that vertical segregation – differences in levels of hierarchical position in the labour market – serves as a better proxy to measure gender inequalities. Firstly because, in contrast to employment rates vertical segregation cannot be explained by prevailing welfare regime typologies and has been widely neglected by labour market researchers in favour of the pay gap. However secondly, it is the main factor causing wage inequalities. Vertical segregation in this Chapter is looked at by comparing women's likelihood to be in managerial and senior professional occupations relative to men's.

As a second contribution, the sample is limited to individuals with tertiary education only. This Chapter aims to investigate the impact of family policies specifically only highly educated women and not on the overall workforce. This enables us to avoid potential dilution effects by researching the possibility that a decline in top positions for women is due to the overall increase of the female workforce – especially in less lucrative jobs.

As a third contribution, this Chapter analyses a wide range of family policy variables. In contrast to Mandel and Semyonov (2006), this analysis additionally introduces more indicators to measure family policies, including a wide range of policies drawn from Multilinks (2011) and the OECD database. Individual level data stems from the European Working Conditions Survey

2010. With women's and men's share in managerial and senior professional positions varying across 24 European countries in 2010, this Chapter applies multi-level analysis to identify what hinders all workers, but particularly women, from reaching top positions by controlling for education and other individual-level variables.

## 6.1 Background and Research Questions

The key contribution of this Chapter is to examine whether family policies can help to explain cross-national variation of the gender gap in top positions. Therefore, theoretical connections and empirical findings that have been discussed in Chapter 3 need to be tested in order to investigate whether first of all, results can be applied to highly educated women's access to top positions relative to men's as well using individual-level data and a wide range of family policy indicators. As established in section 2.6, the overall research question for this Chapter is:

**How do family policies at a national level affect women's likelihood to achieve top positions at the individual level relative to men's?**

7 Research hypotheses have been established in order to fully understand how family policies impact the gender gap in top positions:

**H2.1** is based on the idea that generous maternity leave makes employers more reluctant to hire women as it discourages women from returning to work shortly after childbirth. For the gender gap in top positions this means that women in countries with generous maternity leaves are less likely to reach top positions as they are discouraged from returning to work after childbirth quickly due to financial incentives. This in return means for employers that a female worker poses the risk of longer career interruptions than a male colleague. Thus, we can expect

that because first of all, women on generous maternity leaves are missing out on experience and training, which reduces their human capital and therefore lowers their chances to compete with men for top positions. Secondly, women in countries with generous maternity leaves are also more likely to face motherhood penalties and are less likely to be hired for positions from the start that could in the future help them to reach top positions.

**H2.2** assumes that generous paternity leave is linked with lower gender gaps in top positions. This is because paternity leave in contrast to maternity leave indicates that men are more involved in family responsibilities and thus the traditional division of labour between the spouses is softened. With men taking up more responsibilities, women are more likely to reconcile work and family and thus more likely to reach top positions.

**H2.3** focuses on the link between parental leave and the gender gap. Because parental leave is still taken up mainly by women, generous parental leave is expected to widen the gender gap in the same way as maternity leave. Employers are more reluctant to hire women.

**H2.4** assumes that short, but well-paid leave is regarded as a tool to help parents to take time of work but return quickly. Thus, employers in countries with short well-paid leaves are more likely to hire women than in countries with long unpaid leaves as the latter discourage women to return to work quickly. On the other hand, long well-paid leaves discourage women from returning quicker after childbirth and therefore pose a risk to employers. Thus, long well-paid leave can be expected to increase the gender gap.

**H2.5** argues that extensive publicly funded childcare hinders women from reaching top positions as it correlates with large public sector. Women are overrepresented in public sectors anyway and thus underrepresented in private sectors. Consequently, this segregation between public and private sector employment leads to fewer women in the private sector and thus women having relatively lower chances of reaching managerial positions than men. According to Mandel and Semyonov (2006), the negative impact of childcare on vertical segregation is due

to the strong emphasis of the state on caretaking in the concerned countries which not only encourages women to take time off, but also to move into occupations that are more mother-friendly, allowing them increased flexibility. As expenditure on childcare can be associated with high coverage of childcare, we can expect high levels of expenditure to also increase the gender gap.

**H2.6** focuses on the impact financial incentives have on the division of labour. Both childcare allowances and tax allowances and deductions aim to support care at home and thus are likely to protect the traditional division of labour between the spouses. Consequently, we can expect the gender gap to be higher in countries with generous allowances.

According to **H2.7**, in countries with policies supporting the traditional division of labour between spouses, women are less likely to access top positions. In familiarised countries, dependencies between family members are strengthened by reducing economic and social consequences of providing care.

## 6.2 Descriptive statistics

To begin with the descriptive part of this Chapter, we need to pay attention to the varying sample sizes that are due to data limitation (see tables 6.1 and 6.2, bottom columns). For Albania and Turkey, there is no data available on childcare enrolment of children over 3 years old up the compulsory school age (table 6.1, model 6-1-2 and 6.2, model 6-2-1). Thus, the sample here is reduced to 29 countries and 10372 individuals. Additionally, there is no data available on maternity leave and childcare enrolment rates of children under three year old for Turkey, Albania and Croatia. At level 2 the models are based on 28 countries, at level 1 on 10210 individuals (table 6.1, model 6-1-1 and 6.2, model 6-2-1). These three countries in addition to Cyprus also do not seem to provide data on paternity and parental leave. Here, level 2 uses 27 countries and level 1 9882 individuals (table 6.1, model 6-1-3 and 6.2, model 6-2-3). What is

more, data on expenditure for childcare is not available for Bulgaria, Cyprus, Latvia, Lithuania, Malta, Romania, Albania, Croatia and Turkey. Consequently, the sample is reduced to 22 countries and 8541 individuals. With only 16 countries and 7108 individuals the sample is too low for a reliable model, especially considering that later on random slope models with interaction terms are run.

**Table 6.1 Random slope models for different N for managerial and senior professional positions due to varying level 1 and level 2 data**

| | **Model 6-1-1** | | **Model 6-1-2** | | **Model 6-1-3** | | **Model 6-1-4** | |
|---|---|---|---|---|---|---|---|---|
| **Model to compare for** | **Maternity Leave and Childcare** | | **Childcare enrolment** | | **Paternity and Parental leave** | | **Expenditure on Childcare** | |
| | B | s.e. | B | s.e. | B | s.e. | B | s.e. |
| Female | -0.44*** | 0.08 | -0.44*** | 0.07 | -0.43*** | 0.08 | -0.57*** | 0.06 |
| Constant | -1.00** | 0.35 | -0.98** | 0.35 | -1.00** | 0.35 | -1.18** | 0.40 |
| | | | | | | | | |
| Variance female | 0.08* | 0.04 | 0.08* | 0.04 | 0.07€ | 0.04 | 0.01 | 0.02 |
| Variance country | 0.09** | 0.03 | 0.10** | 0.03 | 0.09** | 0.03 | 0.12** | 0.04 |
| Variance individual level | $\pi^2/3$ | | | | | | | |
| Loglikelihood | -5509.5166 | | -5615.6559 | | -5337.0832 | | -4551.2901 | |
| Level 1 (individuals) | 10210 | | 10372 | | 9882 | | 8541 | |
| Level 2 (countries) | 28 | | 29 | | 27 | | 22 | |

Models control for variables such as Age, Age2, Having children , Having a partner, Youngest child in preschool, Part-time employed, Migrant, Industry sector, Construction Transport sector, Financial Services, Public Administration, Education, Health Sector, Other Services, Paid training, Small Company, Large Company, Public sector, Employment status Full models in Appendix. *** = p <0.001, ** = p < 0.01, * = p < 0.05, € =p<0.

**Table 6.2 Random slope models for different N for managerial positions due to varying level 1 and level 2 data**

| | **Model 6-2-1** | | **Model 6-2-2** | | **Model 6-2-3** | | **Model 6-2-4** | |
|---|---|---|---|---|---|---|---|---|
| **Model to compare for** | **Maternity Leave and Childcare** | | **Childcare enrolment** | | **Paternity and Parental leave** | | **Expenditure on Childcare** | |
| | B | s.e. | B | s.e. | B | s.e. | B | s.e. |
| Female | -0.41*** | 0.11 | -0.40*** | 0.11 | -0.43*** | 0.11 | -0.50*** | 0.13 |
| Constant | -3.66*** | 0.59 | -3.68*** | 0.59 | -3.70*** | 0.60 | -4.20*** | 0.67 |
| | | | | | | | | |
| Variance female | 0.11 | 0.07 | 0.10 | 0.07 | 0.12 | 0.08 | 0.14 | 0.09 |
| Variance country | 0.08* | 0.04 | 0.10* | 0.04 | 0.08* | 0.04 | 0.09* | 0.05 |
| Variance individual level | $\pi^2/3$ | | | | | | | |
| Log likelihood | -2733.1873 | | | | -2329.4026 | | -2329.4026 | |
| Level 1 (individuals) | 10210 | | 10372 | | 9882 | | 8541 | |
| Level 2 (countries) | 28 | | 29 | | 27 | | 22 | |

Models control for variables such as Age, Age2, Having children , Having a partner, Youngest child in preschool, Part-time employed, Migrant, Industry sector, Construction Transport sector, Financial Services, Public Administration, Education, Health Sector, Other Services, Paid training, Small Company, Large Company, Public sector, Employment status. Full models in Appendix. *** = p <0.001, ** = p < 0.01, * = p < 0.05

Random slope models are run with cross-level interaction terms in order to examine the impact of family policies on vertical segregation. In order to see whether these cross-level interaction terms improve the models and significantly reduce the variance at the individual and country level, we need to compare variance of the more advanced models with regular random slope models without cross-level interaction. Because the sample size however varies for the different context level variables, we cannot compare these models with the ones established in Chapter 3. Thus, the models in table 6.1 and 6.2 illustrate random slope models without cross-level interaction terms for the different samples. Table 6.1 shows the results of the likelihood to reach a managerial and senior professional positions, table 6.2 shows the same for managerial positions only. The key observation here is that we find that women's likelihood to reach top positions relative to men's is significantly different across different countries under investigation if we include a larger group of countries such as Eastern European and Baltic countries. Data on expenditure on childcare is only available for Western European countries including Scandinavia, Western and Mediterranean countries, but excluding Eastern and Central European countries. We find no significant variation across countries of varying access to managerial and senior professional positions in the models with only 22 country cases. According to table 6.2, there is no significant variation across countries in women's relative likelihood compared to that of men to reach managerial position, regardless of the different country cases under investigation. In contrast to this, we found with more country cases as discussed in Chapter 4, table 4.1 model 4-1-4 and 4.3, model 4-3-4 significant variation of the gender gap across countries.

### 6.2.1 Cross-level interaction terms

Adding one context level variable at a time, we first examine whether family policies separately have a significant impact on vertical segregation (Table 6.3-6.4). These observations are based on the insignificant main effect and the insignificant cross-level interaction term, which indicates whether there is an additional effect on women's career chances relative to men's.

**Table 6.3 The impact of context factors in explaining the cross-national variance in women's relative likelihood to obtain a managerial and senior professional position**

| | Leaves | | | | | | |
|---|---|---|---|---|---|---|---|
| **Models** | **6-3-1** | **6-3-2** | **6-3-3** | **6-3-4** | **6-3-5** | **6-3-6** | **6-3-7** |
| **Model to compare for** | **Maternity Leave (duration)** | **Effective maternity leave** | **Paternity leave duration** | **Effective paternity leave** | **Net Parental leave** | **Effective parental leave** | **Well-paid leave** |
| Main effect (Macro Factor) | 0.03 | -0.01 | -0.06 | -0.05 | 0.00 | 0.04 | 0.05 |
| female | -0.44*** | -0.44*** | -0.43*** | -0.43*** | -0.43*** | -0.43*** | -0.46*** |
| **Macro factor*female** | **0.04** | **0.09** | **0.04** | **0.06** | **-0.07** | **-0.01** | **0.10** |
| Variance female level | 0.08€ | 0.07€ | 0.07€ | 0.07€ | 0.07€ | 0.07€ | 0.06€ |
| Variance country | 0.09** | 0.09** | 0.09** | 0.09** | 0.09** | 0.09** | 0.09** |
| Exp. Var. random slope: female (from model 3) | 2.96% | 11.94% | 0.48% | 1.19% | 6.54% | 0.20% | 20.23% |
| Exp. Var. level 2 (from model 3) | 0.94% | -0.52% | 1.97% | 1.55% | -0.55% | 0.96% | 3.30% |
| Log likelihood | -5509.22 | -5508.59 | -5336.69 | -5336.64 | -5336.65 | -5336.95 | -5507.70 |
| Level 2 N | 10210 | 10210 | 9882 | 9882 | 9882 | 9882 | 10210 |
| Level 1 N | 28 | 28 | 27 | 27 | 27 | 27 | 28 |

Models control for variables such as Age, Age2, Having children , Having a partner, Youngest child in preschool, Part-time employed, Migrant, Industry sector, Construction Transport sector, Financial Services, Public Administration, Education, Health Sector, Other Services, Paid training, Small Company, Large Company, Public sector, Employment status Full models in Appendix.*** = p <0.001, ** = p < 0.01, * = p < 0.05

**Table 6.3 continued: The impact of context factors in explaining the cross-national variance in women's relative likelihood to obtain a managerial and senior professional position**

| | Childcare policies | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Models** | **6-3-8** | **6-3-9** | **6-3-10** | **6-3-11** | **6-3-12** | **6-3-13** | **6-3-14** | **6-3-15** | **6-3-16** |
| | **Childcare usage under 3 year old** | **Full-time childcare usage under 3 year old** | **Childcare allowance for 1 Child** | **Childcare allowance for 3 Children** | **Family Taxation Subsidies** | **full-time childcare enrolment for 3- before school** | **part-time childcare enrolment for 3- before school** | **no formal childcare enrolment for 3- before school** | **Expenditure on childcare** |
| Main effect (Macro Factor) | 0.06 | 0.06 | 0.09 | -0.03 | -0.15** | 0.02 | -0.09 | 0.12€ | 0.14* |
| female | -0.44*** | -0.44*** | -0.44*** | -0.44*** | -0.41*** | -0.44*** | -0.45*** | -0.46*** | -0.56*** |
| **Macro factor*female** | **-0.11** | **-0.07** | **0.00** | **0.01** | **0.13€** | **0.01** | **-0.12€** | **0.17**** | **-0.04** |
| Variance female level | 0.07€ | 0.08€ | 0.08* | 0.08* | 0.08* | 0.08* | 0.05€ | 0.04 | 0.02 |
| Variance country | 0.09** | 0.09** | 0.09** | 0.09** | 0.07** | 0.10** | 0.08** | 0.08** | 0.10** |
| Exp. Var. random slope: female (from model 3) | 2.82% | -1.45% | -0.45% | -0.88% | 0.26% | 30.44% | 45.28% | -19.48% | 2.82% |
| Exp. Var. level 2 (from model 3) | 2.91% | 7.85% | 1.00% | 18.03% | 0.36% | 11.25% | 17.72% | 15.31% | 2.91% |
| Log likelihood | -5508.74 | -5508.64 | -5509.43 | -5505.81 | -5615.58 | -5612.03 | -5609.57 | -5609.57 | -4549.55 |
| Level 2 N | 10210 | 10210 | 10210 | 10210 | 10372 | 10372 | 10372 | 10372 | 8541 |
| Level 1 N | 28 | 28 | 28 | 28 | 29 | 29 | 29 | 29 | 22 |

Models control for variables such as Age, Age2, Having children , Having a partner, Youngest child in preschool, Part-time employed, Migrant, Industry sector, Construction Transport sector, Financial Services, Public Administration, Education, Health Sector, Other Services, Paid training, Small Company, Large Company, Public sector, Employment status Full models in Appendix.*** = p <0.001, ** = p < 0.01, * = p < 0.05

**Table 6.4 The impact of context factors in explaining the cross-national variance in women's relative likelihood to obtain a managerial position**

| | Leaves | | | | | | |
|---|---|---|---|---|---|---|---|
| **Models** | **6-4-1** | **6-4-2** | **6-4-3** | **6-4-4** | **6-4-5** | **6-4-6** | **6-4-7** |
| **Model to compare for** | **Maternity Leave (duration)** | **Effective maternity leave** | **Paternity leave duration** | **Effective paternity leave** | **Net Parental leave** | **Effective parental leave** | **Wellpaid leave** |
| Main effect (Macro Factor) | -0.03 | -0.10 | 0.01 | -0.04 | 0.00 | 0.06 | 0.05 |
| female | -0.41*** | -0.41*** | -0.43*** | -0.43*** | -0.43*** | -0.42*** | -0.41*** |
| **Macro factor*female** | **0.01** | **-0.04** | **-0.10** | **0.02** | **-0.09** | **-0.12** | **-0.07** |
| Variance female level | 0.11 | 0.11 | 0.11 | 0.12 | 0.11 | 0.11 | 0.11 |
| Variance country | 0.08* | 0.07* | 0.08* | 0.08* | 0.08* | 0.08* | 0.08* |
| Exp. Var. random slope: female (from model 3) | -0.83% | 2.43% | 9.98% | -1.30% | 11.01% | 12.80% | 4.06% |
| Exp. Var. level 2 (from model 3) | 0.38% | 13.02% | -0.45% | 4.30% | -0.53% | 1.26% | 1.15% |
| Log likelihood | -2733.08 | -2731.79 | -2644.81 | -2645.13 | -2644.88 | -2644.49 | -2732.87 |
| Level 2 N | 10210 | 10210 | 9882 | 9882 | 9882 | 9882 | 10210 |
| Level 1 N | 28 | 28 | 27 | 27 | 27 | 27 | 28 |

Models control for variables such as Age, Age2, Having children , Having a partner, Youngest child in preschool, Part-time employed, Migrant, Industry sector, Construction Transport sector, Financial Services, Public Administration, Education, Health Sector, Other Services, Paid training, Small Company, Large Company, Public sector, Employment status Full models in Appendix.*** = p <0.001, ** = p < 0.01, * = p < 0.05

**Table 6.4 continued: The impact of context factors in explaining the cross-national variance in women's relative likelihood to obtain a managerial position**

| | Childcare policies | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Models** | **6-4-8** | **6-4-9** | **6-4-10** | **6-4-11** | **6-4-12** | **6-4-13** | **6-4-14** | **6-4-15** | **6-4-16** |
| **Model to compare for** | **Childcare usage under 3 year old** | **Full-time childcare usage under 3 year old** | **Childcare allowance for 1 Child** | **Childcare allowance for 3 Children** | **Family Taxation Subsidies** | **full-time childcare enrolment for 3- before school** | **part-time childcare enrolment for 3- before school** | **no formal childcare enrolment for 3- before school** | **Expenditure on childcare** |
| Main effect (Macro Factor) | 0.15* | 0.11€ | 0.10 | 0.01 | -0.05 | 0.04 | 0.08 | **-0.24**** | 0.17* |
| female | -0.41*** | -0.41*** | -0.41*** | -0.42*** | -0.42*** | -0.40*** | -0.39*** | -0.38*** | -0.51*** |
| Macro factor*female | 0.03 | -0.05 | -0.04 | -0.08 | -0.03 | -0.05 | -0.01 | 0.14 | 0.13 |
| Variance female level | 0.11 | 0.12 | 0.11 | 0.11 | 0.11 | 0.11 | 0.10 | 0.12€ | 0.12 |
| Variance country | 0.06* | 0.07* | 0.07* | 0.08* | 0.08* | 0.10* | 0.09* | 0.08* | 0.06€ |
| Exp. Var. random slope: female (from model 3) | 3.35% | -3.22% | -0.46% | 5.76% | 4.57% | -1.82% | -0.08% | -15.37% | 19.39% |
| Exp. Var. level 2 (from model 3) | 26.21% | 11.37% | 6.72% | -1.45% | 4.83% | 0.42% | 3.85% | 17.73% | 39.68% |
| Log likelihood | -2730.14 | -2731.83 | -2732.34 | -2732.89 | -2732.71 | -2756.21 | -2755.80 | -2752.78 | -2324.85 |
| Level 2 N | 10210 | 10210 | 10210 | 10210 | 10210 | 10372 | 10372 | 10372 | 8541 |
| Level 1 N | 28 | 28 | 28 | 28 | 28 | 29 | 29 | 29 | 22 |

Models control for variables such as Age, Age2, Having children , Having a partner, Youngest child in preschool, Part-time employed, Migrant, Industry sector, Construction Transport sector, Financial Services, Public Administration, Education, Health Sector, Other Services, Paid training, Small Company, Large Company, Public sector, Employment status Full models in Appendix.*** = p <0.001, ** = p < 0.01, * = p < 0.05

As we can see from table 6.3 and 6.4 none of the leave variables examined in this paper seems to significantly explain the cross-national variation of gender gap in access to top positions across Europe. What is more, none of the family policy variables examined in this thesis seems to explain the cross-national variation in women's access to managerial positions across Europe.

On the other hand, some childcare policies are associated with cross-national variations of gender gap in occupational hierarchies – more specifically women's relatively likelihood of reaching managerial and senior professional positions. Model 2-16 in table 6.3 shows that part-time childcare usage for older children is negatively associated with women's access to managerial and senior professional positions relative to men's. In other words, the larger the share of older children enrolled in part-time childcare the higher the gender gap. However, we do not see the same association in table 6.4 for managerial positions only (model 6-4-14). What is more, model 6-3-15 in table 6.3 – again managerial and senior professional occupations – we find that the higher the share of older children not enrolled in any form of formal childcare, the lower the gender gap.

Adding an interaction term of female*Part-time childcare enrolment to the model, explains 30.44% of the variance of the impact of gender on occupational hierarchies. Enrolment in no formal childcare for three to school age at all explains an even higher variance of 45.28%. Ironically, we can even see that in countries with high rates of preschool children, more specifically three to school age, helps women's relative chances to reach top positions. In other words, countries where there is a high proportion of children between three and school age in informal childcare the gender gap in achieving high positions are smaller. On the other hand, high rates of preschool children in part-time formal childcare arrangements significantly lower women's career prospects.

However childcare policies do not seem to have any significant effect in explaining the cross-national variance of women's relative likelihood of reaching managerial positions.

Childcare allowance regulations (models 6-3-10 and 6-4-11 in table 6.3 and 6.4) on the other hand do not help explain vertical segregation and are not clearly correlated with vertical segregation or occupational hierarchies in general. As shown in model 6-3-12 in table 6.3, countries that provide tax subsidies or deductions for childcare and thus support the male breadwinner model significantly increase women's relative chances to reach managerial and senior professional positions.

### 6.2.2 Robustness tests – Adding two cross-level interaction terms at a time

Before interpreting what the results from table 6.3 and 6.4 mean for this thesis, we need to make sure that the results are robust and observable even if other context-level variables are added. Because of the limited number of countries included in the analysis, models can only add two cross-level interaction terms at a time. Pairing each family policies variable with each other leaves us with 105 models for each dependent variable and 240 models in total. Each variable listed in the horizontal column A is paired with each variable listed in the vertical rows B. The cells then highlight whether any of the two variables has an impact on the gender gap in top positions or not. A bold letter indicates the stronger effect. This section shows that well-paid leave once controlled for childcare allowance seems to help women; family taxation seems to be stable regardless of what is included in the model. Lastly, part-time childcare and no formal childcare enrolment remain stable as well.

Table 6.5 presents the results for the broader dependent variable – senior professional and managerial positions – while table 6.6 shows results for managerial positions only. For a better overview and because we are only interested in the impact of family policies on the gender gap, only significant results for the interaction term are illustrated. Results on the association between family policies and individuals' access to top positions can be found in the Appendix.

**Table 6.5 Cross-level interactions for senior professional and managerial positions[3]**

| A / B | Maternity Leave (length) | Effec. maternity leave | Paternity leave duration | Effec. paternity leave | Net Parental leave | Effec. parental leave | Well-paid leave | Childcare usage under 3 | Full-time childcare usage under 3 | Allowance for 1 Child | Allowance for 3 Children | Family Taxation Subsidy | Full-time childcare over 3 years | part-time childcare over 3 years | no formal childcare over 3 years |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Effective maternity leave** | + | | | | | | | | | | | | | | |
| **Paternity leave duration** | + | + | | | | | | | | | | | | | |
| **Effective paternity leave** | + | + | + | | | | | | | | | | | | |
| **Net Parental leave** | + | + | + | + | | | | | | | | | | | |
| **Effective parental leave** | + | + | + | + | **+** | | | | | | | | | | |
| **Well-paid leave** | + | + | + | + | B#(+)* | **B#(+)**** A#(-)* | | | | | | | | | |
| **Childcare usage under 3 year old** | + | + | B#(-)€ | B#(-)* | B#(-)* | B#(-)€ | + | | | | | | | | |
| **Full-time childcare usage under 3 year old** | + | + | + | **B#(-)€** | **+** | **+** | **+** | + | | | | | | | |

[3] Notes: Entries are results from 105 separate multilevel models, in which contextual variables are introduced in pairs (having controlled for the individual level characteristics)A (represents when the variable in column A is significant) B (represents when the variable in column A is significant), n.s. represents when both variables are insignificant. The letters in bold represents the stronger predictor in the model.
*** = p <0.001, ** = p < 0.01, * = p < 0.05, € = p < 0.10

**Table 6.5 (continued) Cross-level interactions for senior professional and managerial positions[3]**

| A / B | Maternity Leave (length) | Effec. maternity leave | Paternity leave duration | Effec. paternity leave | Net Parental leave | Effec. parental leave | Well-paid leave | Childcare usage under 3 | Full-time childcare usage under 3 | Allowance for 1 Child | Allowance for 3 Children | Family Taxation Subsidy | Full-time childcare over 3 years | part-time childcare over 3 years | no formal childcare over 3 years |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Childcare allowance for 1 Child** | + | + | + | + | + | + | A#(+)€ | + | + | | | | | | |
| **Childcare allowance for 3 Children** | + | + | + | + | + | + | A#(+)€ | + | + | + | | | | | |
| **Family Taxation Subsidies** | B#(+)€ | + | + | + | B#(+)€ | + | B #(+)€ | B#(+)€ | B #(+)€ | B #(+)€ | B #(+)€ | | | | |
| **full-time childcare enrolment for 3-before school** | + | + | + | + | + | + | + | + | + | + | + | A#(+)€ | | | |
| **part-time childcare enrolment for 3-before school** | B#(-)€ | + | B#(-)€ | + | B#(-)* | B#(-)* | + | + | A#(-)€<br>B#(-)* | B#(-)€ | B#(-)€ | A#(+)* | A#(-)€ /<br>B#(-)** | | |
| **no formal childcare enrolment for 3-before school** | B#(+)* | B#(+)* | B#(+)* | B#(+)* | A#(-)*<br>B#(+)** | B#(+)* | B#(+)* | + | B#(+)* | B#(+)* | B#(+)* | A#(+)* | B#(+)** | B#(+)€ | |
| **Expenditure childcare** | | | | | | | | | | | | A#(+)* | | | |

## Table 6.6 Cross-level interactions for managerial positions[4]

| A / B | Maternity Leave (length) | Effec. maternity leave | Paternity leave duration | Effec. paternity leave | Net Parental leave | Effec. parental leave | Well-paid leave | Childcare usage under 3 | Full-time childcare usage under 3 | Allowance for 1 Child | Allowance for 3 Children | Family Taxation Subsidy | Full-time childcare over 3 years | part-time childcare over 3 years | no formal childcare over 3 years |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Maternity Leave (duration)** | | | | | | | | | | | | | | | |
| **Effective maternity leave** | + | | | | | | | | | | | | | | |
| **Paternity leave duration** | + | + | | | | | | | | | | | | | |
| **Effective paternity leave** | + | + | + | | | | | | | | | | | | |
| **Net Parental leave** | + | + | + | + | | | | | | | | | | | |
| **Effective parental leave** | + | + | + | + | + | | | | | | | | | | |
| **Wellpaid leave** | + | + | + | + | + | + | | | | | | | | | |
| **Childcare usage under 3 year old** | + | + | + | + | + | + | + | | | | | | | | |
| **Full-time childcare usage under 3 year old** | + | + | + | + | + | + | + | + | | | | | | | |

[4] Notes: Entries are results from 105 separate multilevel models, in which contextual variables are introduced in pairs (having controlled for the individual level characteristics)A (represents when the variable in column A is significant) B (represents when the variable in column B is significant), n.s. represents when both variables are insignificant. The letters in bold represents the stronger predictor in the model.
*** = p <0.001, ** = p < 0.01, * = p < 0.05, € = p < 0.10

**Table 6.6 (continued) Cross-level interactions for managerial positions[4]**

| A / B | Maternity Leave (length) | Effec. maternity leave | Paternity leave duration | Effec. paternity leave | Net Parental leave | Effec. parental leave | Well-paid leave | Childcare usage under 3 | Full-time childcare usage under 3 | Allowance for 1 Child | Allowance for 3 Children | Family Taxation Subsidy | Full-time childcare over 3 years | part-time childcare over 3 years | no formal childcare over 3 years |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Childcare allowance for 1 Child** | + | + | + | + | + | + | + | + | + | | | | | | |
| **Childcare allowance for 3 Children** | + | + | + | + | + | + | + | + | + | + | | | | | |
| **Family Taxation Subsidies** | + | + | + | + | + | + | + | + | + | + | + | | | | |
| **full-time childcare enrolment for 3-before school** | + | + | + | + | + | + | + | + | + | + | + | + | | | |
| **part-time childcare enrolment for 3-before school** | + | + | + | + | + | + | + | + | + | + | + | + | + | | |
| **no formal childcare enrolment for 3-before school** | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| **Expenditure childcare** | + | + | + | + | + | A#(-)€ | + | + | A#(-)€ /**B#(+)*** | + | + | + | + | + | + |

Looking at leave policies first, we see that the gender gap in senior professional and managerial positions is no bigger or smaller in countries with generous maternity leaves. The gender gap between women and men's representation in top positions is not affected the time mothers can take off work for childbirth and raising. Women's chances to reach top positions relative to men's and thus narrow the gender gap does not seem to be affected by generous paternity leave. We only find that in countries with generous effective weeks of paternity leave individuals seem to be affected negatively. However, this negative effect is cancelled out by high rates of full-time childcare usage for children under 3 years (table 6).

Another policy that is only significant in a single model is effective parental leave. If net parental leave and informal childcare are added to the same model, then parental leave significantly impacts the gender gap by widening it. However, because informal childcare at the same time decreases vertical segregation and this coefficient is stronger, net parental leave in the end has no impact other than moderating the effect of informal childcare. In other words, because the positive effect of high rates of children enrolled in no formal childcare at all helps reduce the gender gap in managerial and senior professional positions, this negative effect is cancelled out.

We can see the same effect when simultaneously adding effective parental leave and well-paid leave to the model. Here, we see that although generous parental leave seems to hinder women from reaching top positions relative to men, well-paid leave compensates for this and actually significantly narrows the gender gap in managerial and senior professional positions down. For managerial positions only, we see no effect of parental leave at all on either the gender gap or varying levels of access to managerial positions across countries with one exception. When controlling for high levels of expenditure on childcare, we see that effective parental leave significantly widens the gender gap. In other words, if we look at countries with similar levels of expenditure on childcare, we see that effective parental leave worsens women's access to managerial positions and thus widens the gender gap. This needs to be kept in mind for the later analysis, as we know that parental leave is mainly taken up by women and therefore serves an additional indicator for maternity leave.

Well-paid leave on the other hand seems to be positively associated with women's representation in senior professional and managerial positions. According to table 5, in countries with similar levels of parental leave and childcare allowances, we find that the gender gap in managerial and senior professional occupations is smaller if well-paid leave is long. To recap: well-paid leave is defined as when maternity and parental leave is compensated for with an income replacement through benefits of 60 percent or more. This positive effect of well-paid leave seems to be moderated and strengthened by parental leave and childcare allowances. However, this effect is only significant for senior professional and managerial positions, but not for top management.

To summarize, while parental leave tends to negatively affect women's chances to reach top positions and widens the gender gap, we find the opposite for well-paid leave that summarizes how well paid both maternity and parental are combined.

Moving on to childcare, even when other family policies are taken into account, the findings hold true in that in countries with high usage rates of childcare for children under 3 years old the gender gap is wider. This is the case for both full-time and general childcare. We can see that when comparing countries with similar levels of paternity leave and parental leave, high level of childcare enrolment for young children seem to hinder particularly women from reaching managerial and senior professional positions. Interestingly, it is also enrolment in full-time childcare that seems to widen the gender gap. Countries with high usage levels for full-time childcare for under 3 year olds and high levels of part-time enrolment for older children (3 to preschool age), seem to particularly make it harder for women to access managerial and senior professional positions and thus widen the gender gap.

We cannot find this association for managerial positions only. However, here it seems that generally employees reach managerial positions more easily in countries with high levels of childcare usage – both full-time and part-time. This does not help us though to explain cross-national variation in the gender gap for managerial positions.

For older children – 3 year to preschool age – we find that access to cross-national variation in women's access to managerial positions (table 6) is not associated at all with childcare for this age group. We only find that rates of no formal childcare seem to negatively affect individuals' chances to reach managerial positions. In other words, both male and female workers seem to be less likely to reach managerial positions in countries with high levels of no formal childcare in contrast to countries with low level of no formal childcare.

With regard to the main research focus – vertical segregation and women's access to top positions in relation to men's – the results for managerial and senior professional positions seem more interesting and significant. Table 5 shows that in countries with high levels of part-time enrolment in childcare for preschool children the gender gap is significantly wider. Women are less likely to be represented in managerial and senior professional positions if children are on average only enrolled in part-time childcare. Surprisingly, we find no strong evidence for a positive or negative effect of full-time enrolment. Most interestingly, it seems that the gender gap is smaller in countries with high rates of preschool children enrolled in no formal childcare at all. In other words, where children are on average not enrolled in childcare facilities but are cared for by informal arrangements, women seem to be more likely to reach managerial and senior professional occupations and thus vertical segregation decreases.

Lastly, we need to examine monetary policies such as childcare allowance and tax subsidies. Here, we find that tax credits or deductions seems to significantly decrease the gender gap by helping women to reach senior professional and managerial positions. This effect is only positive for women's access to top positions as we see that in general, individuals are less likely to reach managerial and senior professional positions in countries with tax subsidies. However, when interpreting these results, it needs to be noted that the variable for tax subsidies is a summative score for both tax subsidies and tax deductions and only 7 out of 29 countries offer neither deduction nor subsidies (Cyprus, Finland, Ireland, Latvia, Luxembourg, Norway, and Sweden) and only Austria offers both. The remaining 21 countries all have the same value for this variable.

The gender gap in senior professional and/ or managerial positions does not seem to be affected at all by the generosity of childcare allowances. There is no significant impact of childcare allowances for 1 or 3 children neither on the gender gap in managerial nor the gender gap in senior professional and managerial positions. What is more, only if we compare countries with similar levels childcare allowances for one child, we see that these have a positive effect on all individuals, but high levels of childcare allowances for three children have a similar but negative effect.

Lastly, while in countries with high levels of childcare expenditure individuals are more likely to reach top positions than in countries with limited expenditure in this area, we cannot find any significant association between expenditure on childcare and vertical segregation. Women are not more or less likely to be represented in top positions in countries with low levels of spending than in countries with high levels. Thus, expenditure on childcare does not help us to understand cross-national variation in vertical segregation.

To summarize, we find that especially the negative impact of parental leave on vertical segregation is to be noted and the positive impact of well-paid leave. What is more, it seems that no formal childcare is better for women than formal childcare arrangements.

## 6.3 Discussion

As discussed in Chapter 4, although women's share of managerial and senior professional occupations has increased in many European countries, their gender – among other individual factors such as public sector employment and having children – has been shown significantly to hinder women from reaching top positions in the countries included in this analysis. This Chapter shows that women's likelihood to reach top positions does not only vary among individuals, but can be explained to a small extent by national level factors, e.g. family policies. In the following analysis, the second research question is addressed in order

to see how family policies at a national level affect women's likelihood to achieve top positions at the individual level relative to men's. In other words, do family policies affect the gender gap in top positions?

This analysis contributes to the field of family policies and vertical segregation in three ways. First of all, observations made for the association between family policies and women's share in managerial positions at the macro-level needs to be reassessed using individual-level data and more specific definitions of top positions. Secondly, in contrast to previous scholarly work, this analysis examines the impact of a wide range of family policies on vertical segregation including various leave policies, childcare coverage and monetary policies. As a third contribution, this analysis also tests whether family policy typologies manage to capture the impact of single family policies on the gender gap.

### 6.3.1 Leave policies

The first hypothesis **H2.1** assumes that generous maternity leaves make employers more reluctant to hire women as it discourages women from returning to work shortly after childbirth. Examining the data we find no strong evidence for the negative impact of maternity leave on the gender gap. The length of maternity does not seem to further increase discrimination against highly educated women in the labour market from the perspective of the employer. Furthermore, long maternity leaves do not seem to affect experience and human capital of highly educated women as much as assumed by previous scholars (e.g. Polachek, 1981) for the general female workforce. This might be due to the fact that highly educated women return to work more quickly after childbirth in Europe, as observed by Prozato (2009). Thus, women with tertiary degrees do not seem to be affected by maternity leave policies as their career interruptions are shorter and the effect on their human capital in terms of experience and training is smaller.

Moving on from maternity leave, the next hypothesis **H2.2** claims that generous paternity leave indicates that men are more involved in family responsibilities and thus the traditional division of labour between the spouses is softened. Women are more likely to reconcile work and family and thus more likely to reach top positions. In contrast to parental leave, which can be taken up by women as well, paternity leave indicates the time only fathers can take off. In the long run, paternity leave can therefore encourage men to participate more in raising children. Thus, paternity leave can help to create more balance within the family between the spouses and can potentially decrease inequalities in the labour market (OECD, 2001). However, as argued by Anker (1997), the availability of paternity leave does not necessarily result in high rates of take-up. Paternity leave – even in Scandinavian countries – is by far not taken by every father (Estevez-Abe, 2005; Moss and Deven, 1999; Evans, 2002). This potentially is the reason for the unclear association between paternity leave and the gender gap in managerial positions. Generous paternity leaves at the macro level do not seem to help highly educated women to reach top positions more easily. Consequently, the hypothesis that the gender gap is smaller in countries with long paternity leaves cannot be verified.

**Parental leave** on the other hand is only theoretically available to both spouses but even in Scandinavian countries taken up mostly by women (Evans, 2002), thus we expect that employers are less likely to hire women in countries with long parental leaves due to expected career interruptions and thus the loss in manpower (Estevez-Abe, 2005). The findings of this thesis find limited supporting evidence for this hypothesis. For women in managerial positions only, effective parental leave seems to significantly increase the gender gap if we compare countries with similar levels of expenditure on childcare services. In all other models, parental leave remains insignificant in explaining the cross-national variance in the gender gap in top positions.

Lastly, we need to look at whether not only effective weeks of leaves matter, but whether we can consider leaves as well paid in general, independently from how long they are. **H2.3** states that short, but well-paid leave is regarded as a tool to help parents to take

time off work but return quickly. Thus, employers in countries with short well-paid leaves are more likely to hire women than in countries with long unpaid leaves as the latter discourage women to invest return to work quickly (e.g. Akgunduz and Plantenga, 2013; Han *et al.et al.*, 2009). Chung (2017) suspects a curve-linear relationship in that both no maternity leave and too generous maternity leave are detrimental for women, but a certain level of well-paid leave beneficial as it allows women to invest into their careers and have a family.

While well-paid leave does not seem to affect the gender gap for managerial positions, well-paid leave helps to decrease the gender gap in senior professional and managerial positions if we compare countries with similar levels of parental leave. Thus, the positive impact of well-paid leave on highly educated women's access to top positions contradicts Estevez-Abe's (2005) assumption that leave in general decreases the demand for female workers. On the contrary, it seems that highly educated women find it easier to reach top positions in countries with well-paid leaves than in countries with low replacement rates. Because well-paid leave by definition describes the length of leave (maternity and parental) with an income replacement through benefits of 60 percent or more, it seems to encourage highly educated women to reconcile paid work and family responsibilities. At the same time, well-paid leave seems to make employers less reluctant to hire women. Thus, the hypothesis that it is not long well-paid leave, but rather short well-paid leave that decreases the gender gap is true.

### 6.3.2 Childcare policies

Moving on from leave policies to the provision of childcare services, we need to test **H2.4** which expects that extensive publicly funded childcare hinders women from reaching top positions as it correlates with large public sector. Thus, we can expect high levels of expenditure to also increase the gender gap. The assumption here is that there is a correlation between extensive publicly funded childcare and women's underrepresentation in private sectors and thus more vertical segregation. Mandel and Semyonov (2006) argue that the

negative impact of childcare on vertical segregation is due to the strong emphasis of the state on caretaking in the concerned countries which does not only encourage women to take time off, but also to move into occupations that are more mother friendly, allowing them flexibility. As expenditure on childcare can be associated with high coverage of childcare, we can expect high levels of expenditure to also increase the gender gap. However the models presented control for public sector employment and thus exclude the mitigating effect of public sector employment. For future research, the author therefore suggests running all models without controlling for public sector and instead adding public sector employment as a macro-level variable to the model. The role of the public sector per se is not however the main research focus of this thesis.

According to table 6.3 and 6.4, the gender gap is not different in countries with high levels of expenditure on childcare services if we control for public sector employment. On the one hand, these findings confirm Mandel and Semyonov's (2006) hypothesis that not expenditure in childcare per se leads to a discrimination of women in top positions, but that public expenditure on childcare correlates with a different variable which then leads to a higher gender gap. On the other hand, the findings do not confirm that public sector employment is detrimental for women's access to managerial positions. Public sector employment does not significantly impact either of the dependent variables (see Chapter 4).

Going further into detail, we need to test whether specific childcare policies increase or decrease the gender gap (see hypothesis 2.6), acknowledging that expenditure in childcare is a broad measurement of childcare intensity in a country. Publicly funded childcare potentially helps on the one hand to free the individual from the burden of family responsibilities (Lohmann and Zagel, 2015) and on the other to ensure equal access to childcare facilities. However, based on the findings of Mandel and Semyonov (2006) the assumption here is that women are actually less likely to access managerial positions if childcare coverage is high, and thus the focus of the government on childcare leads to bigger public sectors and thereby creates a preference among women for employment in the public sector rather than in the private one. While we already discussed that public sector

employment does not seem to correlate with the gender gap in managerial positions, we find highly interesting results for the association between childcare and the gender gap. As discussed, full-time childcare usage does not affect highly educated women's access to senior professional and managerial positions. However, high levels of part-time childcare widen the gender gap. These findings are not surprising as the many of top positions require employees to work full-time. This is because as discussed in Chapter 4, part-time employment indeed is negatively associated with access to managerial positions and thus it can be expected that part-time childcare is not sufficient to allow the individual to work full-time. These findings correspond to what van der Lippe *et al.* (2006) call "combination pressure". The authors find that in countries with high rates of full-time childcare coverage such as Sweden and Denmark, but also in countries with high part-time childcare coverage such as the UK the pressure to combine paid work and family responsibilities is particularly high. Thus, it seems that not the existence of a large public sector seems to explain why more childcare seems to be detrimental for women, but more importantly the pressure to combine both the family and work. Particularly part-time childcare does not seem to allow women to reconsolidate family and paid work, especially not in managerial and senior professional positions. What is more, full-time childcare does not seem to significantly impact women's position in the labour market either. Based on van der Lippe et al (2006), this further supports the idea that extensive childcare does not necessarily lead to more gender equality in the labour market.

The most interesting finding however is that the gender gap in managerial and senior professional positions seems to be significantly lower in countries where high rates of preschool children are not enrolled in any type of formal childcare. This clearly contradicts the assumptions made, but seems logical when considering that the sample for this analysis consists of highly educated women and their access to top positions. Low rate of formal childcare and gender equality are not excluding, but actually reinforcing each other. As argued by Pfau-Effinger (2005), not only formal childcare has been modernised to help women combine paid work and care. But informal care has undergone a drastic change as well. Additionally, informal care such as domestic care providers or the use of private childcare centres is becoming more common especially among middle-class women and two-career households (Tronto, 2002). Qualitative research undertaken by Gregson and Lowe (1994) for

example shows that in the UK dual career households where both partners are working waged domestic workers are changing the division of labour at home and thus help spouses gain more flexibility. However, the apparent lack of formal childcare does not cause higher levels of gender equality overall, as this particular sample of women can be expected to be financially able to pay for informal care arrangements and thus benefit from a system that does not focus on formal childcare.

**H2.5** assumes that both childcare allowances and tax allowances and deductions aim to support care at home and thus are likely to protect the traditional division of labour between the spouses. Consequently, we can expect the gender gap to be higher in countries with generous allowances. Initially, it was assumed that childcare allowances increase the likelihood of domestic care and the dependency of children on their parents. Because in the majority of cases, it is women undertaking childcare responsibilities, it can be assumed that if countries financially reward home care, they support the traditional division of labour between the spouses and thus decrease women's incentive to work. However, it seems that this assumption, which is based mainly on research on the overall female workforce, is not true for highly educated women. The generosity of childcare allowance does not affect the gender gap. This links with the previous observations that childcare policies affect highly educated women differently than the overall female workforce. Assuming that highly educated women have the financial resources to invest into childcare anyway and are also highly likely to have relatively high salaries, childcare allowances are not a financial incentive for them to stay at home to look after the children. On the contrary, family taxation subsidies for example even significantly decrease the gender gap. However, here it needs to be highlighted that the measurement for taxation subsidies is the combination of two binary variables and thus only allows countries to have the value 0, 0.5 or 1. Only a few countries offer neither tax deductions nor credits – Cyprus, Finland, Ireland, Latvia, Luxembourg, Norway, and Sweden – and only Austria offers both. The remaining 21 countries all have the same value for this variable. Nevertheless, we can see that it is presumably familiarising policies such as tax subsidies that are suspected to increase women's dependency on the male breadwinner which affect highly educated women differently and actually seem to help them

reconcile work and family. The assumption that childcare allowances and tax allowances and deductions widen the gender gap therefore cannot be verified.

## 6.4 Conclusion

The overall research question of this Chapter is how family policies affect the gender gap in managerial positions and in managerial and senior professional positions. Based on the findings, four main conclusions can be drawn. First of all, the results show that assumptions made by previous scholars on women's access to top positions and family policies are not necessarily true if looking at highly educated women only. Whereas it seems that according to previous research, leave policies for example hinder women from entering the labour market and thus are detrimental for gender equality, maternity leave actually has no impact on highly educated women to reach top positions. Well-paid leave even seems to decrease the gender gap in managerial positions. Thus, when examining the impact of family policies on any dimension of gender equality, we need to clearly distinguish between different educational levels of women. Therefore, this Chapter supports the claim made by Mandel and Shalev (2009) and Dorado *et al.* (2002) that occupational segregation follows different patterns for highly educated women than for women with lower levels of education.

The second conclusion to be made based on this Chapter is that the welfare state paradox hypothesis can be confirmed to some extent for highly educated women using individual-level data. Generous childcare policies do not help women to access top positions, but actually widen the gender gap. With childcare policies being a substantial part of progressive welfare states, we can therefore say that highly educated women aiming to reach top positions are not better off in de-famfamiliarised countries. The opposite is actually found with conservative policies such as tax deductions and credit and child allowances decreasing the gender gap. Thus, while it may as well be that women generally benefit from childcare policies and paternity leave, but are discouraged from pursuing a career in the formal labour market if financial incentives encourage them to stay at home and undertake childcare, this is not the case for highly educated women and vertical segregation. The glass ceiling is weaker

in countries that financially support home childcare. However, here it needs to be noted that informal childcare does not mean care is provided by one of the parents. More likely for the sample of highly educated women aiming for top positions, the positive impact of informal care on vertical segregation might be explained by flexible domestic care arrangements that particularly middle class women have access to. Thus, we can conclude that the women find it easier to access managerial positions, if childcare is organised informally and these arrangements are supported financially. Mandel and Semyonov's (2005) claim that the negative impact of childcare coverage on vertical segregation is due to the size of the public sector however cannot be verified.

Lastly, this Chapter also shows that the majority of family policies seem to have no impact on the gender gap in managerial/ managerial and senior professional jobs. Among 16 separate indicators for family policies, only a few policies seemed to have a significant impact on women's access to top positions relative to men's. Thus, we can conclude that if countries want to increase the share of women in managerial positions, different policies need to be introduced that help women to reconcile job and family responsibilities without at the same time making them less employable. In other words, this study also shows that the welfare state paradox needs to be reconsidered given that majority of family policies examined here. Although family policies do not help higher educated women reach top positions, they do not hinder their position either.

## Chapter 7: The effect of labour market institutions on vertical segregation

The previous Chapter suggests that family policies do not do a good job in explaining the cross-national variation of the gender gap in top positions. This Chapter now turns to labour market institutions to see whether they can help explain the likelihood for women to achieve top positions at the individual level, relative to men. The results show that in countries with strict EPL, a focus on specific skills and a large unionised female workforce, women have better access to managerial and senior professional occupations. Thus, the main contribution of this Chapter is that, unlike what has been argued by previous scholars such as Estevez-Abe (2005), there is evidence that more regulated and rigid labour markets actually seem to help highly educated women to reach the top.

As established in Chapter 3, scholars have examined the association between welfare states, their family policies and labour market inequalities. However, vertical segregation - in other words, women's underrepresentation in top positions - has not been researched to a large extent. To overcome the methodological, but also conceptual, limitations of previous studies, Chapter 6 conducted an extensive analysis of numerous family policies, family policy typologies and the gender gap using individual-level data for highly educated individuals only, using more specific definitions of top positions. However, as established at the end of Chapter 6, family policies are limited in their explanation of the cross-national variance in the gender gap in top positions. Thus, the question remains: What else, other than family policies, is causing the cross-national variation of the gender gap discussed in Chapter 5? This Chapter aims to investigate whether labour market institutions, as defined in Chapter 3 and 4, can help to explain this puzzle. To do so, the Chapter is structured in the following way:

First of all, the theoretical and empirical background is summarised briefly, based on what has already been established in Chapter 4. Here, the research question and hypotheses are introduced. Next, the results of a multilevel analysis will be discussed using random slope cross-level interaction models. The models are conducted in two stages, initially with only one random slope interaction term added to the model, and then two interaction terms at a time.

The descriptive part of this Chapter is followed by an analysis of the results in order to link the findings with the research hypotheses. In the short summary and conclusion, this Chapter then highlights the contributions made and the outlook for the following Chapter.

## 7.1 Background and research questions

Following the findings of the previous Chapters, the question remains why women's chances of reaching top positions vary across countries. Chapter 6 concludes that Mandel and Semyonov's argument that the "same welfare state activities that promote one dimension of gender equality appear to inhibit another dimension" (2006, p. 1942) is true to some extent. Countries with progressive childcare policies seem to show comparably higher levels of vertical gender segregation. However, it seems that the majority of family policies have no direct impact at all, and even childcare only affects the gender gap marginally. To solve the remaining puzzle of cross-national variations in occupational segregation, a few scholars (e.g., Estevez-Abe, 2005; England, 2005; Dieckhoff *et al.*, 2015) have linked labour market institutions to occupational gender segregation. This Chapter aims to contribute to this field of research in three ways.

First of all, by analysing the association between labour market institutions and individual-level data with a more distinct definition of the gender gap in top positions. As a second contribution, this Chapter contributes to the recent debate on the association between labour market institutions and vertical segregation by combining a wide range of labour market institutions that represent two opposing streams in the literature, and allowing variables to potentially complement each other.

Thirdly, this Chapter contributes to the recent debate on labour market institutions and the gender gap by conducting an analysis of labour market institutions and gender inequalities using a wider range of countries, including data from up to 30 European countries and more updated and recent datasets.

As established in Chapter 4, the overall research question of this Chapter is:

**How do labour market institutions affect women's likelihood to reach top positions relative to men's?**

In order to answer this question, we now need to summarize the hypotheses that centre on unions and collective bargaining as noted in Chapter 4. Some scholars (Schaefer *et al.*, 2001) for example, argue that strong unions generally are beneficial for the overall workforce and help decrease vertical segregation by decreasing overall inequalities. Thus, the first hypothesis is:

**H3.1** The gender gap is expected to be lower in countries where unions are strong and collective bargaining coverage is high.

However, there is another stream in the literature that distinguishes more carefully between unions' strength and who they actually represent. Palier and Thelen (2010), for example, argue that coordinated market economies are a highly heterogeneous group due to dualisations of their labour markets. They state that CMEs with their relatively strong unions and centralized bargaining systems have undergone a change in recent years. In order to adjust to a "more competitive international economic context" (ibid, p. 139), CMEs have experienced a dualisation of their workforce, by protecting the core highly skilled workers and therefore failing to cover all citizens in terms of employment protection or work contracts. What is more, in these CMEs the outsider group is gendered, in that women are overrepresented. Häusermann and Schwander (2010) argue that atypical employment is gendered in many countries, and that especially in continental Europe, these new types of employment are the norm rather than the exception for women (Esping-Andersen 1999). This may be especially true due to the normative positions of some of these CME countries as conservative welfare states, where male breadwinners have traditionally earned the family wage and women's labour market participation was considered secondary. Therefore, we

can expect that class-related differences in corporatist countries with a dualised labour market are more evident than in CMEs with a less fragmented workforce. Looking at this argument from a different perspective therefore means that:

**H3.2** The gender gap is expected to be higher in countries where unions are strong but only represent a small share of the workforce. In other words, the gender gap is expected to be different in countries with high union density and collective bargaining coverage.

However, because strong unions representing only the core workforce seem to be detrimental for the outsider workforce, by further increasing labour market inequalities. If unions are strong – as indicated by collective bargaining coverage – but do not represent women's interests, we can expect the gender gap to be higher. Therefore, we can also expect that if collective bargaining coverage is high, or rather, unions are strong and centralised, but women are not part of unions negotiating these agreements, we expect a negative impact on women's access to top positions relative to men's as the interests of the core male workforce are prioritised. In other words, women's union density and collective bargaining coverage affect the gender gap.

Moving on to the second part of the literature linking labour market institutions with occupational segregation, the next hypothesis is based on Estevez-Abe's (2005) argument that women are discriminated against in countries with a high intensity of vocational training and education, due to the locus of training, the atrophy rate and the portability of skills (see Chapter 2.3.2). Thus, the fourth hypothesis is:

**H3.3:** In countries with firm specific skill profiles the gender gap in top positions the gender gap is expected to be higher because women are less likely than men to invest in firm specific skills.

At the same time, because of data used in previous studies on skill profiles and gender (Estevez-Abe *et al.*, 2001, Estevez-Abe, 2005) we need to also question the assumption that women and men invest in skills differently. In other words, what happens if there is a relatively high share of women with specific skills? If women are highly specialised as well, then the stratifying effect of skill specificity should disappear and women should be just as likely to reach top positions, if we follow the human capital argument. Thus, the fifth hypothesis is:

**H3.4:** In countries with strict employment protection legislation or specific skill profiles, the gender gap in managerial positions can be expected to be higher than in less regulated countries with general skills.

As indicated already, specific skills and EPL are institutional complementarities in that EPL protects skill investments. While this might encourage women to enter the labour market in the first place, it seems to hinder women (especially those who are highly educated) from reaching top positions. Because in LMEs social protection is more limited and the labour market is more deregulated than in CMEs, this causes employment insecurity, which then is specifically a burden for workers with lower skills. In CMEs, these workers are more sheltered (Mandel and Shalev, 2009) due to stronger social protection, which on the other hand penalizes women in higher skilled jobs who do not have the need for social protection. Soskice (2005, p. 175) summarizes this dilemma: “If you’re a highly educated woman, you want to work in an LME; if you’re a working-class man, you want to work in a CME.”

Therefore, we expect that for our sample of highly educated individuals, the gender gap is higher in CMEs than in LMEs.

Generous unemployment benefits however – as a second indicator for social protection – lower the risk of investments in specific skills and encourage employees to invest in more portable sector specific skills. We can therefore expect that in countries with

generous unemployment benefits, women are more likely to invest in sector specific skills that will then increase women's likelihood of obtaining top positions.

Thus, hypothesis **H3.7** is that the gender gap in countries with generous unemployment benefits is smaller.

To address these hypotheses, the Chapter now continues by describing the results of the random slopes models with cross-level interaction terms. In other words, we examine the impact of labour market institutions on vertical segregation. Random slope models are run for both the wider definition of vertical segregation – senior professional and managerial jobs – and managerial jobs only. Due to data availability, the number of countries and individuals included varies. In a second step, two cross-level interaction terms for each labour market institutions are added at the same time to the model in order to test how robust the results are and to take into account the potential correlation of the eight macro-level variables.

After describing the results, the findings are analysed, beginning with a discussion of the first variables that aim to operationalise conflict theories, followed by an analysis of the arguments focusing on political economies. In a last step, both theories are brought together in order to identify how institutions overlap and act as complementarities.

## 7.2 Baseline models

This section examines the impact of labour market institutions on women's access to senior professional and/or managerial positions. As discussed in section 3.4, eight macro-level variables have been identified. Four of these – collective bargaining coverage, trade union density, women's union membership rates and women's union density rates – aim to capture the theoretical assumptions made above on how interest representation and organisation of workers in unions can impact the gender gap (see Dieckhoff *et al.*, 2015; Schäfer *et al.*, 2012)

and how a dualisation of the labour market (Palier and Thelen, 2010) potentially increases vertical segregation.

The remaining four variables – skill profiles for the overall workforce and women in particular, employment protection legislation, unemployment benefit generosity – aim to test the findings of scholars gendering the Varieties of Capitalism approach, such as Estevez-Abe (2005, 2007, 2009), Estevez-Abe *et al.* (2001), Mandel and Shalev (2009) and Hall (2007). Variables aim to investigate whether national skill profiles alone or in combination with employment protection and unemployment benefit generosity solidify the glass ceiling for highly educated women, using updated and individual-level data.

All variables are added to the random slope model separately first. In a second step, two cross-level interaction terms at a time are introduced to the random slope models in order to test for moderation effects. This allows us to test whether collective bargaining in combination with (women's) union density has an impact on the gender gap.

Here, it needs to be highlighted that data is not available for all 31 countries for each context-level variable. In order to still be able to compare the model fit of the cross-level interaction random slope models with the model fit of the random slope models without context-level variables, the latter ones need to be rerun for the varying sample sizes. Table 7.1 and table 7.2 list the results of the random slope models for these different sample sizes. While in the previous Chapter the key focus is on analysing the variation in the likelihood of women reaching top positions, this Chapter focuses on the impact of labour market institutions on vertical segregation. Thus, even though individual and job characteristics are controlled for, the detailed coefficients are attached in the appendices and therefore not discussed at this point. Additionally, the random slope models without macro-level variables are only discussed briefly. More importantly, random slope models are provided here in order to compare these with cross-level interaction models and see whether adding macro level variables improves our models.

Table 7.1 and 7.2 show the results for the varying samples both for access to managerial and senior professional occupations and access to managerial positions only. As discussed in the previous Chapter, the original sample has 31 countries at level 2 and 10,902 individuals at level 1. Countries included are: Albania, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak, Slovenia, Spain, Sweden, Turkey and the United Kingdom. Data for unemployment benefit generosity for around the year 2010 is only available for 30 countries and thus Albania is excluded. Furthermore, data on collective bargaining coverage, trade union density and employment protection legislation is not available for Albania, Croatia and Turkey, and data for women's skill profiles cannot be found for Turkey, Albania and Luxembourg, but is available for the remaining 28 countries. EPL data is missing for Albania, Bulgaria, Cyprus, Malta, Romania, Croatia and Turkey, and data for women's union membership is missing for Albania, Croatia, Cyprus, France, Greece, Romania and Turkey. For women's union density, only 18 countries are included due to data missing from Albania, Bulgaria, Estonia, Italy, Latvia, Lithuania, Luxembourg, Malta, Croatia, Cyprus, France, Greece, Romania, Slovenia and Turkey. Thus, models including women's union density should be interpreted with particular caution due to the very low number of *N* at level 2.

The main difference for the outcome of senior professional and managerial positions, in comparison to the bigger sample size as discussed in the previous Chapter 8, is that it seems that with smaller sample sizes, the variance of gender becomes less significant. In other words, the impact of gender on individuals' access to managerial and senior professional occupation is clearly significant for sample sizes of 28 and 30 countries at the level 2 (see models 7-1-4, 7-1-5, 7-1-6). However, as indicated in the previous Chapter the selection of countries matters as well, as model 7-1-1 shows significant variance at level 1 for a significance level of <.1 for 24 countries in contrast to model 7-1-3 despite the same number of countries included and more individuals at level 1. This seems to be due to Bulgaria, which is included in model 7-1-1, but not in model 7-1-4. Bulgaria has shown to allow women better access to managerial and senior professional positions as discussed previously.

For managerial positions (see table 7.2), we find the same amount of N at level 2 and 1 as in table 7.1. However, in contrast to the initial model with 31 countries, we find no significant variation at the individual level. Thus, the impact of gender does not seem to vary for access to managerial positions. Nevertheless, since for the bigger sample size there was a significant variation and secondly, this Chapter examines the impact of macro-level factors on women's access to top positions, both definitions of top position are included. However, the main focus is on senior professional and managerial positions.

**Table 7.1 Random slope models for different N for managerial and senior professional positions due to varying level 1 and level 2 data**

| | **Model 7-1-1** | | **Model 7-1-2** | | **Model 7-1-3** | | **Model 7-1-4** | | **Model 7-1-5** | | **Model 7-1-6** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Union membership (women)** | | **Union density (women)** | | **EPL** | | **Collective Bargaining, Trade union density, skill profiles** | | **Unemployment benefits** | | **Skill profiles (women)** | |
| | B | s.e. | B | s.e. | B | s.e. | B | s.e. | B | s.e. | B | s.e. |
| Female | -0.42*** | 0.08 | -0.58*** | 0.07 | -0.51*** | 0.07 | -0.44*** | 0.08 | -0.42*** | 0.08 | -0.42*** | 0.08 |
| Constant | -0.77* | 0.38 | -1.38** | 0.44 | -0.97** | 0.37 | -1.00** | 0.35 | -0.98** | 0.35 | -0.98** | 0.35 |
| Variance female | 0.07€ | 0.04 | 0.02 | 0.03 | 0.04 | 0.03 | 0.08* | 0.04 | 0.08* | 0.04 | 0.08* | 0.04 |
| Variance country | 0.08** | 0.03 | 0.13** | 0.05 | 0.11** | 0.04 | 0.09** | 0.03 | 0.10** | 0.03 | 0.10** | 0.03 |
| Variance individual level | $\pi^2/3$ | | | | | | | | | | | |
| Loglikelihood | -4607.6492 | | -3863.6703 | | -4970.5012 | | -5509.5166 | | -5783.5438 | | -5418.547 | |
| Level 1 (individuals) | 8400 | | 7271 | | 9253 | | 10210 | | 10728 | | 10029 | |
| Level 2 (countries) | 24 | | 18 | | 24 | | 28 | | 30 | | 28 | |

Models control for variables such as Age, Age2, Having children , Having a partner, Youngest child in preschool, Part-time employed, Migrant, Industry sector, Construction Transport sector, Financial Services, Public Administration, Education, Health Sector, Other Services, Paid training, Small Company, Large Company, Public sector, Employment status Full models in Appendix.*** = p <0.001, ** = p < 0.01, * = p < 0.05

**Table 7.2 Random slope models for different N for managerial positions due to varying level 1 and level 2 data**

| | **Model 7-2-1** | | **Model 7-2-2** | | **Model 7-2-3** | | **Model 7-2-4** | | **Model 7-2-5** | | **Model 7-2-6** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Union membership (women)** | | **Union density (women)** | | **EPL** | | **Collective Bargaining, Trade union density, skill profiles** | | **Unemployment benefits** | | **Skill profiles (women)** | |
| | B | s.e. | B | s.e. | B | s.e. | B | s.e. | B | s.e. | B | s.e. |
| Female | -0.34** | 0.11 | -0.39** | 0.13 | -0.47*** | 0.12 | -0.41*** | 0.11 | -0.41*** | 0.10 | -0.40*** | 0.11 |
| Constant | -3.75*** | 0.64 | -4.87*** | 0.73 | -3.90*** | 0.63 | -3.66*** | 0.59 | -3.83*** | 0.58 | -3.91*** | 0.60 |
| | | | | | | | | | | | | |
| Variance female | 0.09 | 0.07 | 0.11 | 0.08 | 0.12 | 0.08 | 0.11 | 0.07 | 0.10 | 0.07 | 0.11 | 0.07 |
| Variance country | 0.09* | 0.04 | 0.10€ | 0.05 | 0.09* | 0.04 | 0.08* | 0.04 | 0.09* | 0.04 | 0.10* | 0.04 |
| Variance individual level | $\pi^2/3$ | | | | | | | | | | | |
| Loglikelihood | -2294.8315 | | -2032.9094 | | -2481.303 | | -2733.1873 | | -2823.3638 | | -2678.0725 | |
| Level 1 (individuals) | 8400 | | 7271 | | 9253 | | 10210 | | 10728 | | 10029 | |
| Level 2 (countries) | 24 | | 18 | | 24 | | 28 | | 30 | | 28 | |

Models control for variables such as Age, Age2, Having children , Having a partner, Youngest child in preschool, Part-time employed, Migrant, Industry sector, Construction Transport sector, Financial Services, Public Administration, Education, Health Sector, Other Services, Paid training, Small Company, Large Company, Public sector, Employment status Full models in Appendix. *** = p <0.001, ** = p < 0.01, * = p < 0.05

### 7.2.1 Random slope models

The analysis of the association between labour market institutions and access to top positions begins with adding macro-level variables separately to the random slope model. Variables operationalizing conflict theory are added first (see table 7.3, models 7-3-1 to 7-3-4). None of the investigated variables have a significant direct impact.

The first variable examined is union density. This variable expresses the share of the workforce that has a union membership and thus indicates how representative unions are for the overall workforce. Applying multilevel modelling, model 7-3-1 in table 7.3 shows the results for adding trade union density as an explanatory macro-level variable to explain access to senior professional and managerial positions. The main effect is not significant, which means that according to the data individuals do not reach top positions more or less easily depending on how representative trade unions are. More importantly for the research question however, representative trade unions also do not seem to affect the gender gap in managerial and senior professional positions, as the non-significant value for the additional impact of our macro-level variable on women shows (Macro factor*female).

Because union density is used as an indicator for representation of the workforce, we need to have a closer look at who exactly is a member of trade unions. The data on women's union density shows the proportion of the female workforce that are a member of unions. It therefore does not show whether women are represented by unions more or less than men, but generally how large a share of the female workforce is unionised. Data on women's union density was only available for 18 countries, therefore we must be careful with interpretations. But we can see from model 732-2 in table 7.3 and 7-4-2- in table 7.4 that a large unionised female workforce has no direct impact on the gender gap. According to the models, there is no additional gain of a large unionised female workforce for female workers in particular. The variance of gender (female) is non-significant and therefore we cannot say that adding women's union density to the model helps explain cross-national variance of women's access to managerial positions.

Moving on to the next variable, the models now show whether there is a significant impact of the share of women among trade union members affects the gender gap. The

variable shows how many women in relation to men are members of a union, thus the higher the score, the better women are represented in comparison to men. However, the random slope models with cross-level interaction (see table 7.3, model 7-3-3 and table 7.4, model 7-4-3) terms do not support these observations.

Going beyond union membership, collective bargaining coverage aims to capture not how representative unions are, but how many employees are covered by agreements made and therefore how influential unions are. In other words, high levels of collective bargaining coverage indicate strong corporatism and unions. According to model 7-3-4 in table 7.3 and model 7-4-4 in table 7.4, collective bargaining coverage does not seem to have any statistically significant influence on the gender gap in senior professional and/or managerial positions.

To summarize, we find no evidence for the direct impact of trade unions and collective bargaining on the gender gap.

Models 7-3-5 to 7-3-8 in table 7.3 and 7-4-5 to 7-4-8 in table 7.4 list the results of adding labour market institutions to the random slope model that operationalise the gendered VoC arguments. Is vertical segregation the result of institutions that lead to a gender bias in skill investments by increasing employment protection and unemployment benefits? Modes 7-3-5 and 7-4-5 examine whether skill profiles can help explain cross-national variation of the gender gap by adding the cross-level interaction term to the random slope model. The higher the score for skill profiles, the more specialised a workforce is.

Based on model 7-3-5 (table 7.3), we see that a more specialised workforce does not seem to have any impact on the gender gap, nor does it affect the overall workforce. The same is true if we only consider how specialised the female workforce is (model 7-3-6). A highly specialised female workforce does not seem to affect workers', or specifically women's, chances of reaching the top.

Closely connected with skill profiles are unemployment benefits. Generous unemployment benefits aim to protect skill investments in times of unemployment, and therefore should facilitate the development of industry-specific skills, which are not as gender biased as firm-specific skills. Thus, the gender gap in countries with more flexible specialised skills can be expected to be lower. Based on the models, we find no evidence for a significant impact of unemployment benefit generosity and the gender gap either in managerial and senior professional positions or in managerial positions only (see table 7.3, model 7-3-7 and 7.4, model 7-4-7).

Unlike unemployment benefits, employment protection legislation on the other hand demonstrates how easy it is to lay workers off and thus it can be expected that with higher employment protection, employers are less likely to hire a woman due to expected career interruptions. The multilevel models 7-3-8 in table 7.3 and 7-4-8 in table 7.4 provide no supporting evidence for the impact of EPL on the gender gap.

To summarize, none of the variables representing the skill investment arguments seem to directly decrease or increase women's chances of reaching a top position.

**Table 7.3 The impact of context factors in explaining the cross-national variance in women's relative likelihood to obtain managerial and senior professional positions**

| | Conflict Theory | | | | Gendered VoC Theory | | | |
|---|---|---|---|---|---|---|---|---|
| **Models** | **7-3-1** | **7-3-2** | **7-3-3** | **7-3-4** | **7-3-5** | **7-3-6** | **7-3-7** | **7-3-8** |
| | **Trade union density rate** | **Union density (women)** | **Women's percentage of trade union members** | **Collective bargaining** | **Skill profiles** | **Women's skill profiles** | **Unemployment Benefits** | **Employment Protection** |
| Main effect (Macro Factor) | 0.10 | 0.18* | 0.13* | -0.11 | -0.01 | 0.00 | -0.03 | -0.07 |
| female | -0.43*** | -0.57*** | -0.44*** | -0.45*** | -0.44*** | -0.41*** | -0.40*** | -0.50*** |
| **Macro factor*female** | **-0.08** | **-0.03** | **0.03** | **-0.05** | **0.07** | **0.06** | **0.10** | **0.09** |
| Variance female level | 0.08* | 0.03 | 0.06 | 0.07€ | 0.07€ | 0.07€ | 0.08* | 0.04 |
| Variance country | 0.08** | 0.09* | 0.06* | 0.08** | 0.09** | 0.10** | 0.09** | 0.11** |
| Exp. Var. random slope: female (from model 3) | 0.00% | -50.00% | 14.29% | 12.50% | 12.50% | 4.78% | 14.09% | 0.00% |
| Exp. Var. level 2 (from model 3) | 11.11% | 30.77% | 25.00% | 11.11% | 0.00% | 0.13% | -0.14% | 0.00% |
| Log likelihood | -5508.01 | -3861.45 | -4604.93 | -5507.68 | -5509.14 | -5418.1912 | -5782.4803 | -4969.56 |
| Level 2 N | 10210 | 7271 | 8400 | 10210 | 10210 | 10029 | 10728 | 9253 |
| Level 1 N | 28 | 18 | 24 | 28 | 28 | 28 | 30 | 24 |

Each column represents a separate model, where one context variable is included as a main effect on employment insecurity, as well as an interaction term with permanent contract. All models include the individual level variables as in model 3. All level 2 variables are centred and standardized. *** = p <0.001, ** = p < 0.01, * = p < 0.05, € = p < 0.10

**Table 7.4 The impact of context factors in explaining the cross-national variance in women's relative likelihood to obtain managerial positions**

| | Conflict Theory | | | | Gendered VoC Theory | | | |
|---|---|---|---|---|---|---|---|---|
| **Models** | **7-4-1** | **7-4-2** | **7-4-3** | **7-4-4** | **7-4-5** | **7-4-6** | **7-4-7** | **7-4-8** |
| | **Trade union density rate** | **Union density (women)** | **Women's percentage of trade union members** | **Collective bargaining coverage** | **Skill profiles** | **Women's skill profiles** | **Unemployment Benefits** | **Employment Protection** |
| Main effect (Macro factor) | 0.09 | 0.13 | 0.02 | 0.04 | -0.06 | -0.10 | -0.11 | -0.14$^{€}$ |
| Female | -0.41*** | -0.42*** | -0.34** | -0.41*** | -0.40*** | 0.11*** | -0.40*** | -0.46*** |
| **Macro factor*female** | **0.12** | **0.13** | **-0.03** | **-0.02** | **0.09** | **0.11** | **-0.05** | **-0.02** |
| Variance female | 0.08 | 0.07 | 0.09 | 0.12 | 0.10 | 0.08 | 0.10 | 0.12 |
| Variance country level | 0.07* | 0.08$^{€}$ | 0.09* | 0.08* | 0.08* | 0.10** | 0.07* | 0.08* |
| Exp. Var. random slope: female (from model 3) | 27.27% | 36.36% | 0.00% | -9.09% | 9.09% | 21.44% | 6.74% | 0.00% |
| Exp. Var. level 2 (from model 3) | 12.50% | 20.00% | 0.00% | 0.00% | 0.00% | -1.27% | 20.49% | 11.11% |
| Log likelihood | -2730.80 | -2030.29 | -2294.79 | -2733.07 | -2732.65 | -2677.09 | -2821.45 | -2479.52 |
| Level 2 N | 10210 | 7271 | 8400 | 10210 | 10210 | 10029 | 10728 | 9253 |
| Level 1 N | 28 | 18 | 24 | 28 | 28 | 28 | 30 | 24 |

Each column represents a separate model, where one context variable is included as a main effect on employment insecurity, as well as an interaction term with permanent contract. All models include the individual level variables as in model 3. All level 2 variables are centred and standardized. *** = p <0.001, ** = p < 0.01, * = p < 0.05, $^{€}$ = p < 0.10.

### 7.2.2 Adding two variables at a time

One of the key assumption of Varieties of Capitalism (Hall and Soskice, 2004), and therefore also of the gendered version of VoC, is that labour market institutions are complementarities and highly interconnected. Thus, we need to take into account that variables might not individually affect the gender gap, but in combination. However, because of limited data availability, some models only have 18 countries at level 2. In order to still gain meaningful results, we therefore cannot add more than 2 cross-level interaction terms at a time. Trade union density, women's membership and women's trade union membership are highly correlated to one another. The same is true for skill profiles, women's skill profiles; and employment protection legislation and unemployment benefits. Consequently, the models might show significance where there is none or might actually not take into account moderation effects. In order to control for this, context variables are included in the model two at a time. This allows us to test hypothesis H3.2, H3.3 and H3.5. H3.2 argues that the gender gap is affected by a combination of high union density and collective bargaining coverage. Hypothesis 3.3 is about how the combination of women's union density and collective bargaining coverage may affect the gender gap, and H3.5 looks at the combination of strict employment protection legislation and specific skill profiles.

Results for managerial and senior professional occupations can be seen in table 7.5 and for managerial positions only in table 7.6. Here, the tables illustrate for 28 models which variables have a significant impact on the gender gap. For simplicity, the tables only indicate significant cross-level interaction terms. In other words, only when a variable has a significant impact on the gender gap is its direction included in the table (for results on the main effect, see the Appendix E).

Following the structure of the previous Chapters, we examine the impact of variables expressing the "conflict theory" first; namely union density, collective bargaining coverage, women's membership rate in unions over men's and the share of women in unions in relation to the overall female workforce. While there are several significant main effects (see

Appendix E), there is not a single significant combination of two variables at a time that has an impact on the gender gap. Neither the gender gap in managerial nor in managerial and senior professional positions seems to be affected at all by collective bargaining coverage or any of the union density variables.

Moving to the Gendered VoC variables, we see that with the exception of EPL, we now see significant results. Even though the hypothesis is that specific skill profiles seem to solidify the glass ceiling, the models find no support for this (table 7.3 and table 7.4, models 2-8). On the contrary, countries with specific skill profiles – or in other words a highly educated and qualified workforce – seem to decrease the gender gap in managerial and in managerial and senior professional occupations. This is the case for managerial positions when we compare countries with similar levels of employment protection legislation (table 7.6). This impact is significant both when the overall workforce is highly specialised, and also if we look at how specialised women in particular are. For the gender gap in senior professional and managerial positions, we find that if both women and the overall workforce are highly specialised, the gender gap is smaller.

What is more, we see that unemployment benefit generosity seems to significantly increase women's access to managerial and senior professional jobs if we compare countries with the same level of EPL.

Lastly, we need to see whether "conflict" and "Gendered VoC" variables combined have an impact on the gender gap. If we compare countries with similar levels of collective bargaining coverage, EPL significantly decreases the gender gap. What is more, when added at the same time, we find that EPL and women's share in trade unions seem to significantly decrease the gender gap in managerial and senior professional positions. Moreover, we see that when added at the same time, a unionised female workforce decreases the gender gap while a highly specialised workforce generally helps individuals to access top positions.

Narrowing the definition of top positions down to only managerial positions (table 6.6), we see the same effect. A highly unionised female workforce decreases the gender gap, while at the same time a highly specialised (female) workforce seems to help all individuals to reach top positions more easily.

To summarize, when adding just one macro-level variable at a time, we find no evidence in favour or against the Gendered VoC part of the literature or the conflict theories. There does not seem to be a direct effect of any of the labour market institutions on the gender gap. However, when adding two cross-level interaction terms at a time, we find that the effect of (women's) skill specificity is moderated by a unionised female workforce and EPL. What is more, the EPL becomes significantly positive when moderated by women's membership rates in trade unions. Unemployment benefit generosity becomes significantly positive when moderated by EPL.

**Table 7.5 Cross-level interaction for access to managerial and senior professional jobs**

| A / B | Trade union density rate | Collective bargaining coverage | Women's percentage of trade union members | Union density (women) | Skill profiles | Women's skill profiles | Unemployment Benefits |
|---|---|---|---|---|---|---|---|
| **Collective bargaining coverage** | n.s. | | | | | | |
| **Women's percentage of trade union members** | n.s. | n.s. | | | | | |
| **Union density (women)** | n.s. | n.s. | n.s. | | | | |
| **Skill profiles** | n.s. | n.s. | n.s. | B(+)$^{€}$ | | | |
| **Women's skill profiles** | n.s. | n.s. | n.s. | n.s. | **A(+)$^{€}$** /B(-)$^{€}$ | | |
| **Unemployment Benefits** | n.s. | n.s. | n.s. | n.s. | B(+)€ | n.s. | |
| **Employment Protection** | n.s. | B (+)$^{€}$ | **A(+)*** / B #(+)€ | n.s. | n.s. | n.s. | A(+)$^{€}$ |

Notes: Entries are results from 28 separate multilevel models, in which contextual variables are introduced in pairs (having controlled for the individual level characteristics)A (represents when the variable in column A is significant) B (represents when the variable in column B is significant), n.s. represents when both variables are insignificant. The letters in bold represents the stronger predictor in the model.
*** = p <0.001, ** = p < 0.01, * = p < 0.05, $^{€}$ = p < 0.10

**Table 7.6 Cross-level interaction for access to managerial jobs**

| A → / B | Trade union density rate | Collective bargaining coverage | Women's percentage of trade union members | Union density (women) | Skill profiles | Women's skill profiles | Unemployment Benefits |
|---|---|---|---|---|---|---|---|
| **Collective bargaining coverage** | n.s. | | | | | | |
| **Women's percentage of trade union members** | n.s. | n.s. | | | | | |
| **Union density (women)** | n.s. | n.s. | n.s. | | | | |
| **Skill profiles** | n.s. | n.s. | n.s. | A(+)$^{€}$ / B#(+)** | | | |
| **Women's skill profiles** | n.s. | n.s. | n.s. | A (+) $^{€}$ / **B# (+)**** | n.s. | | |
| **Unemployment Benefits** | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. | |
| **Employment Protection** | n.s. | n.s. | n.s. | n.s. | A#(+)$^{€}$ | A#(+)* | n.s. |

Notes: Entries are results from 28 separate multilevel models, in which contextual variables are introduced in pairs (having controlled for the individual level characteristics)A (represents when the variable in column A is significant) B (represents when the variable in column B is significant), n.s.represents when both variables are insignificant. The letters in bold represent the stronger predictor in the model.

*** = p <0.001, ** = p < 0.01, * = p < 0.05, $^{€}$ = p < 0.10

## 7.3 Discussion

Only a few theoretical assumptions were supported by the models. This section aims to analyse the findings. We see that hypothesis H3.1 cannot be supported as union density alone does not affect the gender gap. H3.2 and H3.3, which assume a combined effect of collective bargaining coverage and (women's) union density cannot be verified either. Even though H3.4 – the effect of skill profiles on the gender gap – cannot be fully verified as it is not skill profiles alone that seem to be associated with the gender gap, there is however evidence for the indirect effect of skills specificity as the effect s moderated by women's membership rates in trade unions and EPL. What is more, the EPL becomes significantly positive when moderated by women's membership rates in trade unions. Unemployment benefit generosity becomes significantly positive when moderated by EPL, which confirms H3.5 partly. There is an association between skills and EPL, but a positive rather than the expected negative one. The following section aims to analyse these findings by linking them back with the literature.

### 7.3.1 Conflict theory

The first hypothesis H3.1 for this Chapter claims that the gender gap is expected to be lower in countries where unions are strong. In other words, the collective bargaining coverage is expected to have a positive impact on the gender gap. However, we see that women's relative chances to reach the top compared to men's are not affected directly by collective bargaining coverage. This might be due to the fact that highly skilled workers are generally less likely to be covered by collective bargaining agreements (Fitzenberger *et al.*, 2013), and whilst we find collective bargaining coverage to raise the level of wages and improve the conditions for low and medium skilled workers (Dieckhoff et al, 2015, Calmfors and Drifil, 1988), highly skilled workers are neglected.

What is more, hypothesis H3.2 looks at how not only collective bargaining coverage, but also union density and who actually is organised in unions matters. The authors expected that the gender gap would be higher in countries where unions are strong but only represent a small share of the workforce. In other words, union density is low, but collective bargaining coverage is high. The idea here is that strong unions help to distribute occupational hierarchy more evenly (Schäfer *et al.*, 2012) and thus help women, who tend to be located in the lower tail of the working population in terms of income and position (Mandel and Semyonov, 2005). Dieckhoff *et al.* (2015) argue that women particularly also benefit from high collective bargaining coverage in addition to this as full-time permanent employment for women increases. With more women in full-time employment, we should therefore expect the human capital to become more evenly distributed between genders, which in the long run assists women in reaching managerial and senior professional positions. However, the models discussed above show mixed evidence for this claim. Unions representing a large share of the overall workforce do not seem to directly impact the gender gap – neither directly or indirectly. These findings support Schäfer *et al.* (2012) who find the impact of trade unions on individuals' likelihood of being in a high-status occupation insignificant. This can be due to the assumption that highly educated employees are less likely to be union members and thus they do not depend on union power to improve their career progression as much as less educated workers (Goerke and Pannenberg, 1998; Schnabel, 2002). Highly educated employees have "a lesser need for collective voice" due to greater individual bargaining power (Schnabel, 2002, p. 18). Thus, the mixed results of union density's impact on men's and women's likelihood of reaching a managerial or a senior professional and managerial position are not surprising.

Furthermore, it was expected that if collective bargaining coverage is high, but women are not part of unions negotiating these agreements, there would be a negative impact on women's access to top positions relative to men's, as the interest of the core male workforce are prioritised. This idea is based on labour market dualisation theories claiming that the workforce is not equally represented by unions or covered under collective bargaining agreements. Labour market insiders (see Blanchard and Summers, 1986, 1987; Lindbeck and Snower, 1988, 1989; Emmenegger *et al.* 2012) tend to be in standard employment, who are

unionized, in secured employment, protected by labour laws and have access to social security. Outsiders tend to be unemployed or working in atypical employment with low levels of social protection and limited political representation. According to Palier and Thelen (2010), this trend has worsened in recent years, which particularly affects women as they tend to be outsiders (Häusermann and Schwander, 2010). The findings from table 7.5 and 7.6 suggest that both a large unionised female workforce and a high share of women in unions are beneficial not only for highly educated workers in general, but in combination with strict employment protection legislation, particularly for female workers. This helps to narrow the gender gap. This is shown by the models including EPL and women's union density and EPL and women's union membership at the same time (Table 7.5). If we turn this observation around, we can say that the lower women's share in unions is, the lower their likelihood to reach a top positions and thus, the wider the gender gap. This supports the neo-classical assumption that women are marginalised as outsiders and thus neglected by unions unless they form a large share of their members. A larger share of women in trade unions seems to facilitate policies or agreements that benefit the whole workforce, more so than male-dominated unions do. However, because this effect is only observable in the case of strong EPL and does not occur on its own, we have to be careful about interpretations. Also, women's membership rates in unions are not only positive for the gender gap but help employees overall to reach top positions. A dualisation of the workforce is therefore not clearly present. The mainly indirect effect of women's union density supports Dieckhoff *et al.* (2015) who question that women are always outsiders in the labour market. Even if that is the case, rhey argue that unions sacrifice women's interests in order to accommodate their male members. Women in unions seem to be good for the overall workforce and in some combinations even help to decrease the gender gap.

To summarize so far, we find evidence for power resource theory in that unionised female workforce is beneficial, but not for dualisation theories. In countries with a unionised female workforce and a higher share of women over men in unions seem to facilitate access to managerial and senior professional positions.

### 7.3.2 Political economies and the gender gap

As indicated already, union density and collective bargaining coverage seem to be highly linked with the remaining labour market institutions, namely (women's) skill profiles, employment protection and unemployment benefit generosity. Before analysing the correlation between these two streams of labour market institutions, we first need to examine whether hypothesis 3.3-3.4 are to be rejected or confirmed.

**Hypothesis 3.3** claims that countries with specific skill profiles in contrast to general skill profiles have a strong emphasis on the accumulation of human capital and thus men are more likely than women to be represented in top positions. However, we can expect the gender gap to be smaller if the female workforce is also highly specialised. The idea behind this assumption is that vocational training systems providing both firm- and industry-specific skills increase gender inequality (Estevez-Abe, 2005, Rubery, 1995, Rubery and Fagan, 1993). According to Estevez-Abe (2005), the more specific skills are, the less likely women are to invest in them due to their "portability across employers, the locus of training, and atrophy rate" (Estevez-Abe, 2007, p.70). However, the findings presented in table 6.5 and 6.6 show that the opposite is true. The more specialised the overall workforce is in terms of vocational training and education, the smaller the gender gap. Women seem to reach managerial and senior professional occupations in comparison to men more easily when the general and female workforce has specific skills, meaning the overall rate of vocational training and education is high. This contradicts the conclusion of Estevez-Abe (2005, 2009) who claims that women from all educational backgrounds are discriminated against in countries with a focus on specific skills. Here, it needs to be noted however that scores used for skill specificity strictly follow Iversen's method (see Estevez-Abe *et al.*, 2001). However, because Iversen's data is from the 1990s and uses an additive average score summarizing vocational training intensity 1980-1990s, data used in this thesis is much more up to date. Consequently, countries do not follow the initial VoC typology and countries assumed to have specific skills profiles, such as Germany and Denmark, are not leading here. This also highlights the fact that

different conclusions can be made when context variables such as skill specificity are measured in different ways.

Moving on to **hypothesis 3.4**, we need to investigate whether employment protection increases vertical segregation. The idea here is that EPL aims to reduce the risk of employees in investing in their skills. Thus, employment protection makes it harder for the employer to lay off workers, which is why employers prefer hiring men in the first place due to the higher risk of career interruptions of female workers. Thus, women are disadvantaged as they are less likely to be hired and thus less likely to accumulate experience and human capital despite having the relevant qualifications (Estevez-Abe 2005, 2009). This results in lower chances to reach managerial and senior professional positions where human capital is essential. Estevez-Abe (2005) claims that EPL protects skill investments by making it harder to lay workers off, therefore workers tend to stay longer with companies to make investments pay off. However due to career interruptions, women are less likely to be hired if EPL is strong. Here, Estevez-Abe (2005) looks at the overall workforce, but not at highly educated women only.

However, especially for managerial and senior professional jobs, the opposite seems to be the case according to the models presented in table 7.5. We find that if we compare countries with similar levels of collective bargaining coverage, EPL increases women's access to top positions relative to men's, and thus decreases the gender gap. The theoretical assumption was that more regulated labour markets make it harder for employers to lay workers off and therefore they are more reluctant to hire women. This does not seem to be the case for highly educated women if we compare countries with similarly strong unions. The reasons here could be that EPL protects skill investments generally and thus encourages both men and women to invest in human capital, which in return helps to narrow the gender gap. Thus, EPL as a potential tool for skill formation seems to be beneficial for highly educated women. This conclusion also indicated that a strong emphasis on human capital is not necessarily a barrier for highly educated women, which is why we also need to look at skill profiles.

As explained earlier, once we update the data on skill profiles, countries do not fall neatly into the CME and LME groups anymore. But if we just follow the VoC logic as explained in Chapter 4 and assume that generally, CMEs have specific skill profiles and LMEs general, then the claim is not true that "if you're a highly educated women, you want to work in an LME; if you're a working-class man, you want to work in a CME" (Soskice 2005, 175). However, we also cannot see that EPL and skills are reinforcing each other as there is no effect when adding EPL and skill profiles at the same time, despite the "mutually reinforcing" effect of EPL and skills (Mandel and Shalev, 2009, p.165). In contrast to their assumption, highly educated women aiming for managerial and senior professionals jobs are not affected negatively by EPL. The opposite seems to be the case.

Besides employment protection, we now need to look at the seventh hypothesis that concerns the second variable indicating social protection – unemployment benefit generosity. **H3.5** argues that the gender gap is smaller in countries with generous unemployment benefits. The assumption here is that unemployment protection serves as a tool to protect the value of skills in the case of unemployment. Thus, generous unemployment protection encourages workers to invest in occupational skills that are easily transferable, but more specific than general skills. Mandel and Shalev (2009) assume however that this only benefits men. Nevertheless, as this sample only looks at highly educated individuals, it can be expected that not only men but also women benefit from unemployment benefits protecting their skills, and this encourages investment into sector-specific skills, but not firm-specific ones. According to table 6.5, generous unemployment benefits seem to decrease the gender gap in managerial and senior professional positions when added to the same model as skill specificity, and additionally makes the effect of EPL statistically significant. This supports the idea that unemployment benefits serve as institutional complementarities with skills and EPL. As argued by Estevez-Abe *et al.* (2001), workers invest in highly portable skills – general and sector-specific – if unemployment benefits and EPL are low.

### 7.3.3 Linking theoretical approaches

In a last step, we now need to examine how theories on the political economy and conflict theory are connected. We find that the two key characteristics of CMEs – EPL and skill specificity – only directly decrease the gender gap if moderated by either a unionised female workforce or high female membership rates in unions. In either case, if women are represented in unions and therefore part of negotiations, we find that strict EPL and a focus on specific skills narrow the gender gap. This provides evidence for dualisation theories, as it shows that only if women are part of unions and therefore are not outsiders, the gender gap decreases. What is more, it shows how interconnected unions, vocational training and education are. In any case, the positive impact of both specific skills, EPL and unions clearly contradicts Estevez-Abe's (*et al.*, 2001; 2005, 2009) findings that EPL and skill specificity always discriminate against women, but benefit men. We find this combination of a largely unionised female workforce in combination with strict EPL in Baltic countries, for example.

Thus, we can say that partly both arguments are true for highly educated women – political economy theory and conflict. In countries where EPL shelters women, but unions are female-dominated, women's interests seem to be represented well and thus vertical segregation is smaller. What is more, a large unionised female workforce in countries with a focus on specific skills also seems to be a particularly good combination for women to reach managerial positions and for everyone to reach senior professional and managerial positions. As discussed before, unemployment benefits and employment protection both aim to protect skill investments – industry- specific skills on the one hand and firm-specific ones on the other. It is therefore not surprising that high women's union density and generous unemployment benefits seem to be complementarities as well.

The question of course remains whether labour market institutions in combination with family policies affect women's access to top positions. This is because one could argue that family policies and labour market institutions are highly interconnected and influence

each other. Family policies for example can be seen as a result of collective bargaining on the one hand, or as institutional complementarities similar to employment and unemployment protection to protect skill investments. The author decided to move the literature supporting this argument and also its analysis into Appendix F, as it mainly mirrors the findings of previous Chapters. Similar family policies show a significant impact on the gender gap. At the same time, this Chapter shows how dependent any significant effect of family policies on the gender gap is on the institutional surroundings.

## 7.4 Conclusion

The key focus was to see what other than family policies can explain for the variance of the gender gap in top positions. This is because Chapter 6 resulted in largely insignificant results if not results that conflict with our assumptions. To summarize, one of the key contributions of this thesis is to examine whether highly educated women are truly affected differently by labour market institutions than the general female workforce in relation to men. Here, the findings of scholars such as Schäfer *et al.* (2015) and Dieckhoff et al (2015) on the one hand and Estevez-Abe (2005, 2009) and Estevez-Abe *et al.* (2001) and Mandel and Shalev (2009) on the other needed to be tested for highly educated workers only, using micro-level data. If women are organised in unions, it seems that individuals have better access to top positions than in countries where mostly men are represented. However, it is not the case that only women benefit from a unionised female workforce. Regarding our Gendered VoC arguments, we find that nearly all claims made by the gendered approach to the VoC are not applicable to highly educated employees. It is particularly not the case that vertical segregation increases due to strict EPL or a focus on specific skills. The opposite seems to be true for highly educated women. Thus, we can conclude that a strong focus on human capital is beneficial for highly educated women in terms of reaching top positions. This might be because strict EPL protects skill investments and thus encourages women to invest in specific skills that allow them to progress in their careers.

Another contribution of this thesis is to investigate the correlation between both sides of the discussion. Here, we find that, in particular, women's union membership and skills and EPL are highly correlated and in countries with high EPL, specific skills and a large unionised female workforce, women have relatively better access to managerial and senior professional occupations. Thus, Estevez-Abe (2009) was correct in saying that countries are much more diverse than the VoC typology allows. We cannot simply distinguish between LMEs and CMEs, as configurations of institutional complementarities are more complex, especially when widening the country sample to include Eastern European and Baltic countries.

# Chapter 8: Conclusion

The aim of this thesis has been to investigate what explains the cross-national variation in the gender gap in top positions. In other words, why is it that women in some countries are even more underrepresented in top positions than in other countries? Here, the key focus of the thesis was to see whether family policies act as a deterrent in enabling women into top positions, increasing gender inequalities as argued by the welfare state paradox theories. In addition to this, this thesis examined which factors at the national level, other than family policies, can help explain why women's access to top positions is more difficult relative to men's. This concluding Chapter aims to first of all summarise the literature described in Chapters 2 to 3 and the findings made in the analytical Chapters 5 to 7. All research questions are addressed briefly and connected with the literature. Afterwards, this Chapter critically reflects on the overall research strategy, the selection of the data and the methods. What is more, the author suggests improvements that with hindsight could have made this thesis and its contributions even stronger. The section also discusses directions for future research and presents ideas both on potential methodological and on theoretical contributions that need to be made in order to help understand why women are underrepresented in top positions. This Chapter and the overall thesis conclude with a brief discussion of the policy implications for both policy makers as well as practitioners drawn from this thesis by recommending policies that could help decrease the gender gap in top positions.

## 8.1 Summary of the thesis: What was done and why

This thesis critically analysed the welfare paradox theory by examining whether family policies hinder women from reaching top positions in the labour market. Prior to this, some key descriptive statistics to highlight the current gender market inequalities were examined. In order to highlight gaps in the literature and academic research, this thesis started with a literature review on the empirical background of gender labour market inequalities. Here, the Chapter

reviewed various dimensions of inequalities from a comparative perspective ranging from gendered differences in employment rates and the occurrence of part-time work, through the gender pay gap and occupational segregation, which again was divided into vertical and horizontal segregation. The overall aim of this Chapter was to provide evidence for the claim that women are discriminated against in every developed economy in terms of wage structures, occupational segregation and hours worked (European Commission, 2015). From an empirical perspective, this Chapter also aimed to highlight patterns in the cross-national variation of gender inequalities. Horizontal segregation seems to be the norm in nearly every country with the exception of only Greece, Italy and Luxembourg. Vertical segregation as measured in women's underrepresentation in managerial positions exists in all 30 European countries included in this Chapter. Even in Scandinavian countries, such as Denmark and Finland, only one third of all managers are female.

**Chapters 2 and 3** examined the theories around how family policies and labour market institutions may influence gender labour market inequalities. Chapter 2 concluded that while family policies solve the puzzle of cross-national variation in employment rates, they do not help to understand vertical segregation as the same policies that help promote women's employment rates seem to affect the gender gap in top positions differently. The Chapter introduced the welfare state paradox theory as argued by Mandel and Shalev (2009), namely that family policies widen the gender gap between men and women because extensive family policies lead to a higher motherhood penalty and more employers' discrimination. This is because women are more likely to interrupt their careers and remain at home longer if family policies such as maternity leave are generous. So, whilst these policies help women enter the labour market, they can become barriers when aiming to access top positions.

The Chapter concludes by pointing out the limitations of previous research in that it uses macro-level data only, defines top positions too vaguely and also includes only a limited range of family policies, mainly indices – and thus fails to capture direct effects individual policies. It also provides some evidence of previous studies many of which come to the conclusion that family

policies may not matter in explaining the glass ceiling. Thus, the author decided to include labour market institutions into the analysis as family policies alone do not seem to explain cross-national variation of the gender gap in top positions.

**Chapter 3** therefore turns to labour market institutions to better understand cross-national variation in vertical segregation between genders. The literature review highlighted strengths and limitations of two bodies of literature – one arguing that labour market institutions such as unions and collective bargaining help promote workers' interests and thus can help decrease the gender gap. Here however, dualization scholars such as Häusermann and Schwander (2010) also discuss the potentially negative effect of strong unions on gender labour market inequalities as the core workforce represented by unions tends to be male and thus women are at risk of being outsiders. A second body of literature focuses on the role of EPL and unemployment benefit generosity and skills specificity. The key argument here is that more regulated and protected labour markets with a strong focus on specific skills harden the glass ceiling, as women are less likely to invest in specific skills and thus are less attractive to employers. The more protected workers are and the more difficult hiring and firing becomes, the more employers prefer hiring men over women, as women impose higher risks to employers due to potential family responsibilities. The Chapter also brought to light some of the limitations to these existing studies. Both bodies of the literature focus on the overall workforce only and do not distinguish between educational levels. With a few exceptions (such as Schäfer *et al.*, 2012) it mainly applies aggregate macro-level data and does not adjust the definition of top-level positions to the arguments. Additionally, data used in some research is outdated. For example, skill specificity stems from the 1980s and should therefore not be used anymore.

**Chapter 4** outlined the data and methods chosen to answer the research questions. EWCS data from around the year 2010 was chosen as it allowed the author to redefine the understanding of top positions and offered a wide sample for cross-national comparisons. It also enabled the research to control for various individual- and job-level characteristics. Furthermore,

EWCS allowed the author to narrow down the sample to highly educated individuals only. Family policies and labour market institutions stem from a wide range of sources and are measured at a national level. Due to various reasons the country sample includes only European countries and is a cross-sectional comparison, as this thesis was interested in the association between institutions and the gender gap and not change over time as this does not appear to be the core issue (see Chapter 2). Because the thesis used individual level and national level variables, the preferred method was multilevel modelling. As the author was interested in cross-national variation of the gender gap and thus the varying effect gender has on an individual's likelihood to reach a top position, random slope models with cross-level interaction terms were suggested.

The analytical **Chapter 5** however took the reader stepwise though multilevel modelling in order to highlight first of all the need for individual- and job-level control variables and also highlighted that the effect of gender does vary significantly across countries. Research Question 1 answered in this Chapter was: To what extent does women's likelihood to be employed in a top position relative to men's vary across countries? Based on the findings of Chapter 5, it can be said that first of all women on average are less likely to reach top positions compared to men. But more importantly, this likelihood varies significantly across countries. Here, the analysis shows two additional aspects: the importance of how we define top positions and also the need to distinguish between educational levels as individual-level factors affect the gender gap of highly educated individuals differently and also the gender gap itself is more extreme. The key finding of Chapter 5 was that highly educated women face even greater gender gaps than women from less educated backgrounds. The robustness of the results of the multilevel model was examined through comparing the results with that of a fixed effects model, which confirms the cross-national variation in the gender gap in workers' likelihood of reaching top positions.

**Chapter 6** answered the second research question: How do family policies at a national level affect women's likelihood to achieve top positions at the individual level relative to men's? This was done in order to test whether the assumption of the welfare state paradox is true, that

policies can even widen the gender gap if we look at individual-level data, highly educated individuals only and also include a much wider range of family policies. It can be seen that assumptions based on the overall workforce are not true for higher educated population. Maternity and paternity leave actually has no impact on the gender gap amongst highly educated individuals. Well-paid leave even seems to decrease the gender gap in senior professional and managerial positions. Surprisingly, the lack of formal care also decreases the gender gap. As expected, high enrolment rates in part-time childcare seem to widen the gender gap. The Chapter somewhat supported the claim made by Mandel and Shalev (2009) and Dorado *et al.* (2002) to be critical of the effect of policies on gender inequalities.

Because the findings of Chapter 6 suggest that family policies alone cannot explain cross-national variation of the gender gap in top positions, **Chapter 7** examined how labour market institutions affect women's likelihood to achieve top positions at the individual level relative to men's. In summary, Chapter 7 shows that labour market institutions individually have minimal effect on the gender gap when we look at highly educated women only and use individual-level data. Unions added as an individual variable do not seem to affect the gender gap. There is also no evidence for dualisation theories as there is no effect of a largely unionised female workforce on the gender gap. However, high rates of women in trade unions significantly decrease the gender gap if, in addition to this, EPL is also high. Generally, when the models combined women's share in unions with skill specificity, skills seemed to have a positive impact on narrowing the gender gap. Estevez-Abe's (2005) argument on the negative effect of EPL on the glass ceiling therefore cannot be verified either, the opposite is the case. A strong focus on human capital, as measured as skill specificity in this thesis, is beneficial for highly educated women in terms of reaching top positions – when combined with union density. This might be because strict EPL protects skill investments and thus encourages women to invest in specific skills that allow them to progress in their careers. What is more, the Chapter illuminated limitations of typologies, as countries cannot be divided into CMEs and LMEs. It is seen that in countries with strict EPL, a focus on specific skills and a large unionised female workforce, women actually have better access to managerial and senior professional occupations. Thus, the main contribution of this

Chapter was that more regulated and rigid labour markets actually appear to help highly educated women to reach the top.

## 8.2 Limitations of the thesis and directions for future research

The aim of this thesis was to examine the drivers of cross-national variation of the gender gap between highly educated employees in top positions. Because the question consequently required a cross-national comparison, several decisions in terms of the research strategy had to be made. Despite the author's best intentions to find both appropriate data and methods, there are some drawbacks to this study. The first limitation of the study is the lack of comparisons – both longitudinal comparisons of the gender gap, but also comparisons between the highly educated and the general workforce. All models examine correlation, but cannot assert with certainty whether there is causation. For example, it cannot be concluded that informal childcare impacts the gender gap. A longitudinal comparison could help to examine whether this statistical association holds over time and whether context level factors presumably cause the gender gap to widen or narrow. Nevertheless, as with any social research, causality can never be assumed with certainty and it might well be that the gender gap affects the context level variables. The other comparative aspect that this thesis only partially addresses is to what extent highly educated women are different to the general female workforce. Based on Chapters 2 and 7, we can assume significant differences, but it would have been interesting to examine whether this difference becomes stronger when adding other variables.

Secondly, the use of quantitative large scale studies leads to a simplification of the findings. Multilevel modelling examines whether there is significant variation of the gender gap between countries and whether family policies or labour market institutions can help to understand this variation. However, this approach is not necessarily designed for diving deeper into the findings. Examining the specific country factors driving the gender gap for each macro-

level variable examined would have exceeded the scope of this thesis. However, due to the contributions the multilevel approach has made, this method was still to be preferred over linear regressions. What is more, while quantitative data and multilevel modelling enable an overview and the identification of patterns, a more dynamic qualitative approach would have allowed the research to grasp drivers and the complexity of the gender gap that cannot be quantified and measured easily. Interviews or focus groups, particularly with employers, could have helped to gain essential insight in workplace discrimination for example. Therefore, this study should be seen as a first step for future qualitative or smaller scale quantitative research.

Another limitation of this thesis is the relatively small number of countries included in some of the models, due to data availability. This reduces the power of the models and therefore findings need to be treated with caution. A suggestion here would be to merge the European Working Conditions dataset with other datasets such as the Luxembourg Income Study (LIS). Another advantage of merging datasets is the higher heterogeneity of the countries included and thus the gender gap can be expected to vary even more significantly between countries.

Another contribution of this thesis is the observation that neither policies nor institutions seem to fully address the issue of gendered hierarchies. However, what the thesis does not examine is to what extent legislation can help reduce the gender gap. Here, it would have been interesting to look at how quotas or at least disclosure for management can help narrow the gap. An example would be quotas in politics and the corporate sphere (OECD, 2017). While quotas seem to positively affect policy outcomes, the effect of quotas on the economy and also the representation or pay of highly educated women appears to be insignificant. Bertrand *et al.* (2014) examine how the quota has affected the glass ceiling in Norway. The authors found that even though women were more represented in boards and that the gender wage gap in boards decreased, it had no effect on women's pay or their chances to reach top positions outside of boards. Thus, while quotas seem to be a helpful tool to increase women's representation in

politics, there is little evidence that quotas will significantly lower the gender gap in senior professional and managerial positions generally.

The main limitation of this thesis is the lack of norms and culture in the analysis. Even though the author conducted an in-depth analysis of a vast range of variables, the question still remains what drivers significantly impact the gender gap in top positions. For future research, the author therefore recommends following approaches by Pfau-Effinger (1998), Morgan (2013) and Anker (1997) who all emphasise that policies do not necessarily lead to change and affect labour market outcomes, but that norms and attitudes are persistent. Pfau-Effinger (1998) suggests a new framework that includes norms by focusing on "interrelations of culture, structure and action" (Pfau-Effinger, 1998, p. 150). This interrelation shapes gendered arrangements that do not necessarily reflect policies, but are rather based on the behaviour of social actors. Therefore, changes in gendered arrangements are driven by traditions and norms which then result in cross-national variations of female labour market participation. These traditions lead to different perceptions of the "correct" gendered division of labour. In the Netherlands for example, the male breadwinner model is still strong due to the prevailing gendered arrangement of housewife marriages that go back to the 17th century. A main reason for this was the strong urban bourgeoisie with its ideal type of a housewife marriage. In Sweden and Finland, this bourgeoisie class was not as prevalent as the family model of free farmers. Consequently, when examining gender inequalities at the household level, it is necessary to include attitudes and culture as gendered arrangements do not always correspond with national policies, but rather interrelate with those. Pfau-Effinger (1998) and also Morgan (2013) therefore highlight how changes in policies do not necessarily affect labour market outcomes immediately, but that change needs time. As outlined in the methods section of this thesis, models take time-lagged effects into account to some extent by using family policy data from 2008 and individual-level data from 2010. However, following Morgan (2013) for example, there has been substantial change in family policies in the past decade. Applying Pfau-Effinger's (1998) theory that norms and traditions are path-dependent, a change in policies does not directly affect individuals. This

thesis therefore suggests repeating this kind of research with individual-level data from 2015 to examine time-lagged effects.

Especially with regards to vertical segregation, discrimination based on gendered norms that impact employers' behaviour needs to be examined, as occupational segregation is highly based on cultural aspects and gender-related stereotypes (Anker, 1997). Anker distinguishes between positive characteristics, negative and other characteristics. While the positive stereotypes assume that women have a caring nature, are skilled in domestic work, have greater finger dexterity, are more honest and also have a more attractive physical appearance, negative stereotypes assume women to be unable to supervise others, to be less talented in science and mathematics, and physically not as strong as men. Additionally, women are suspected to be more willing to take orders which also refers back to their perceived inability to give orders. This does not only have consequences for the type of job they get, but results in gendered hierarchies. According to Anker (1997) women are less likely to complain about bad working conditions or their work in general. This is why female-dominated occupations tend to be more repetitive and monotonous which again has consequences both on vertical and horizontal segregation and female occupations tend to be lower-paid (England *et al.*, 2007). These types of jobs also provide workers with less control over their work (Chung, 2018).

These gender-related stereotypes and gendered norms can also explain gendered hierarchies in the labour market. Even though different patterns exist among those different types of divisions, generally men obtain more power and "almost always" work in the "highest position of organizational power" (Acker, 1990, p. 146). Criteria that decide over the level of a job are the required knowledge, skills, their complexity, the effort and working conditions (Acker, 1990). In addition, responsibility and job complexity defined by managerial and senior professional tasks are detrimental. Even though these criteria come across as rational, they are based on the assumption of organisational logic that only the "ideal workers", those without any other commitments, can fully meet the expected level of responsibility and authority. This is

specifically problematic for women as any form of commitment such as child-rearing leads to a lower-rank position with lower wages. Cha and Weeden (2014) and Goldin (2014) have shown how, for example, longer hours are disproportionally rewarded by pay. Generally, women's bodies and every factor that is incidental with it such as pregnancies or even their menstruation seem to cause exclusions and stigma that again are the basis for prejudices. These prejudices lead to the assumption that women cannot meet the requirements of a higher ranked job such as a skilled blue-collar work or top management (Acker, 1990). In a nutshell, Acker's theory on gendered organisations argues that vertical and horizontal segregation exist due to the connection between arguably rational judgements on job hierarchies and stereotypes against the female worker that does not fit into the male and patriarchal structures.

For future research, the models should also examine gender attitudes as another context variable that may influence gender hierarchies – and we should also look at mechanisms to change attitudes. In order to tackle the gender gap in top positions, policy-makers and employers need to invest in female and male role models. This recommendation is based on the representative bureaucracy theory (see for example Krislov and Rosenbloom, 1981). According to this theory, a bureaucracy needs to represent individuals who share the values and attitudes of the public. Ideally, a bureaucracy representing the diversity of the public will produce policies that respect a variety of viewpoints. Scholars such as Mai-Dalton and Sullivan (1981), Ibarra (1993) and Daley (1996) apply this theory to gender inequalities. They argue that firstly, the underrepresentation of women and minorities in top positions reduces chances for new policies and mechanisms to emerge that can facilitate other women's career progressions. Secondly, women in top positions serve as role models and encourage other women to follow their example. Thus, policy-makers and employers need to ensure that female role models are supported in order to encourage women to apply for top positions (OECD, 2017). While female role models might not impact statistical discrimination and discrimination in the promotion, it may encourage women to apply for promotions.

Future research should also look at how we can change employers' and leaders' mind-sets and increase acceptance of the fact that breaking the glass ceiling should not only make sense from a moral and social point of view but also from a financial and economic perspective. "The best reason for believing that more women will be in charge before long is that in a ferociously competitive global economy, no company can afford to waste valuable brainpower simply because it's wearing a skirt" (Fisher and Eiben, 1992, p. 56). To attract more women to top positions, workplace culture including working conditions therefore need to change. Work-life balance needs to be increased by encouraging flexible working arrangements and discouraging working overtime and long hours (OECD; 2014).

The results of the various analyses in this thesis can easily be misread. One of the key findings is that in countries with high rates of children in informal childcare, the gender gap in top positions is significantly lower. Another finding is that family policies generally seem to affect highly educated women only marginally. Thus a simple – and incorrect – conclusion could be that family policies generally contribute to a wider gender gap and harden the glass ceiling. Especially in times of austerity and cutbacks in public policies, these results could potentially provide the evidence for even more limited family policies. Nevertheless, regardless of the insignificant results of family policies in explaining the gender gap, these policies do help women to get into the labour market. However, what this thesis and its models cannot capture is the direction of causation. That is to say, are gender gaps in countries with limited family policies truly smaller because family policies are ineffective or is it rather the case that family policies only indirectly affect the gender gap and actually directly affect attitudes towards working women and mothers in the first place? In other words, the gender gap in top positions and influential jobs remains because inequalities "stem not only from institutional and organisational structure, but from social and cultural norms, inadequate buy-in or support from leaders, assumptions about women's behaviour that serve them ill in leadership positions, and underdeveloped senior professional networks for women" (OECD, 2017, p. 185). Thus, in order to challenge gender gaps in top positions meaningfully, the way forward cannot be the implementation of new policies and institutional structures only as a change in the system is not automatically followed by a

change in attitudes and behaviour. As a starting point the focus of this PhD was to understand cross-national variation of the gender gap in top positions and it only examined the impact of labour market institutions and family policies on women's access to top positions.

## 8.3 Contributions and policy recommendations

As analysed in Chapter 4, one of the key contributions of this thesis is not only to focus on vertical segregation and hierarchies, but most importantly to create a new definition of top positions and thus of the gender gap in top positions. This was done by firstly using individual-level data to define women's and men's likelihood to reach top positions and secondly, by redefining what should be considered a top position based on the factors impacting the gender gap as explained in Chapters 2 to 4. This is because aggregate measurements of women's share in top positions can hide composition effects and therefore measuring the dependent variable at the individual level is preferable as this also allowed us to narrow down the sample size to women and men with tertiary education only. Secondly, not only should we look at managerial positions, but also at individuals in senior professional occupations. This is because the gender gap in top positions reflects occupational hierarchies that are caused by decisions at the household level, policies and labour market factors such as human capital considerations. According to ESeC not only managerial occupations fulfil the criteria of the higher salariat, but also certain senior professional occupations, such as lawyers or university teachers. Additionally, from a rather technical point of view, there is an already existing overlap between the main ISCO-88 group's managers and senior professionals, as it is sometimes hard to decide whether specific skills are required at the legislative, administrative or managerial level or whether skills need to be directly applied. This leads to problems in the ISCO, but also illustrates the second reason for including both managerial and senior professional occupations. Not only hierarchies in terms of power are important, but also the level of qualification needed for a specific occupation.

And indeed, looking at the results of the analysis mainly in Chapter 5, we find both samples overlap. It can be said that in 2010 on European average women were less likely to reach both managerial and/ or senior professional positions. Even though coefficients differ slightly, the impact gender has on the dependent variable is almost the same for both the narrow and the wider definition of top positions. Additionally, we find that the impact gender has on vertical segregation varies significantly across countries. However, it is more statistically significant for the wider definition of senior professional and managerial positions than for the more narrow definition of managerial positions only. This may be due to the power of the overall model and the reduced sample size of the more narrow definition. Most interestingly, highly educated women face higher barriers to reach top positions than women from less educated backgrounds. In other words, the gender gap found for tertiary educated workers is larger than that found for the overall worker population.

For the effect of family policies, we find similar trends. Generally, of all the family policies included in the models, only part-time childcare and informal childcare seem to affect the gender gap. This is however only the case for the wider definition of top positions – senior professional and managerial occupations. Here, part-time childcare and informal childcare have a significant effect. While high rates of children not enrolled in any formal childcare seem to narrow down the gender gap, part-time childcare increases it. These findings suggest that there is no evidence to show that family policies address the gender gap for highly educated women appropriately. While they do not seem to hinder women from reaching top positions as argued by the welfare state paradox, at the same time they do not effectively help to narrow down the gender gap either. This is even more the case for women in managerial positions than for women in senior professional occupations. This might be due to women in these positions having the resources such as money to pay for childcare and therefore are not dependent on policies. Thus, we can say that based on this, more distinct definition of the gender gap using individual-level data and holding human capital (education) levels constant, there is no evidence to support the welfare state paradox theory. However the existing policies, although may help women especially mothers stay in employment, they do not do enough to decrease occupational hierarchies and

need to be much more targeted. Workplaces and organisations need to be tackled. As suggested by the Women and Equality Committee (2018), other policies that aim at encouraging fathers to spend more time with their children and thus support a more equal share of childcare could be more useful. The models showed no significant impact of paternity leave on the gender gap. However, this could be due to limited variations in paternity leaves and also due to the overall low duration of paternity leave. Fathers could be granted a right to take paid time off to attend antenatal appointments (2018, p.3). Furthermore, paternity leave should be paid at a higher level to encourage fathers regardless of their income to spend time with their children. The Committee suggested a pay at 90 percent of the father's pay. The Committee also suggested looking into introducing 12 weeks paternity leave in the child's first year that is dedicated to fathers only and would then replace shared parental leave that still tends to be taken up mostly by mothers.

This thesis was not able to look into more innovative and flexible measures of policies, but the author suggests that future research needs to look into more flexible ways to provide childcare for example. Clearly, the nature of jobs included in both samples – managerial and managerial and senior professional occupations – requires a more flexible approach towards the delivery of childcare. This is indicated by the negative impact of part-time childcare on the gender gap and at the same time by the positive impact of informal childcare on women's chances to reach top positions relative to men's. Consequently, one has to wonder whether "normal" types of childcare provision simply are not targeted enough to the needs of highly educated women with aspirations to reach top positions. How can childcare services adapt to suit a 24-hour economy and also the development that more and more children grow up in single parent households? One way of addressing the flexible demand for childcare is a combination of public and private services as for example implemented in France (see for example Letablier, 2008). Here, parents of children under three years old can choose between public collective childcare services (crèches) with trained and qualified employees, care in the private home of a registered childminder, or at their own home by a family employee. Thus, childcare is flexible and segmented between the private and public sectors and between collective and more flexible individual arrangements. Especially with increasing flexibility in the economy, this flexibility is

needed and can additionally be increased by supporting childcare centres to open at non-standard hours or by encouraging employers to provide childcare services matching the needs of their employees. Another political approach could be to support "shift-parenting" (see Letablier, 2008; Boyer and Nicolas, 2006). Allowing parents to work flexibly helps them to organise their shifts so that they can look after their children accordingly, which also positively affects the time fathers spent with their children and can thus helping to decrease gender inequalities at the household level as argued by Boyer and Nicolas (2006), Kim (2018), Chung and Van der Horst (2018). Crucial here is to address overtime and long hours in the labour market. As argued by Goldinm (2014), the gender pay gap would be smaller if long hours were not rewarded anymore. Goldin finds that because longer hours in certain occupations are rewarded disproportionally, "earnings have a nonlinear relationship with respect to hours" (2014, p. 27). Occupations affected by this overwork trends are managerial and professional jobs, where overwork is embedded in organisational structures and occupational cultures (Cha and Weeden, 2014). Even though this thesis did not explore the relevance of over-time or longer hours, this could be done in future research.

Another contribution of this thesis is to examine a wide range of labour market institutions and their correlation with the gender gap measured at the individual-level. Despite all the literature presented in the beginning Chapters of this thesis, the findings suggest that in contrast to Estevez-Abe (2005, 2009) *et al.* (2007) conclusions, highly educated women are more likely to reach top positions in highly protected and regulated labour markets if unions are strong. Also, this thesis contributes as it examines the interaction between EPL and unions strength and skill profiles. We find that especially women's union membership, skills and EPL are highly correlated and in countries with high EPL, specific skills and a large unionised female workforce, women have a relatively better access to managerial and senior professional occupations. Thus, we can conclude that a strong focus on human capital is beneficial for highly educated women in terms of reaching top positions. This might be because strict EPL protects skill investments and thus encourages women to invest in specific skills that allow them to progress in their careers. In other words, when human capital is the key focus of employers, gender seems to play a

subordinate role as the economic conditions and needs are prioritized. EPL as a tool to protect skill investments also seems to help women. However, the conclusion and policy recommendation cannot be to further increase EPL and regulations more generally as the last Chapter of the thesis highlighted.

One of the findings was that well-paid leave increases women's chances to reach top positions. Thus, the author recommends investing into well-paid leaves and increase also paternity leave – both by introducing more generous and longer paternity leaves, but also by actively encouraging men to take the leave. As mentioned before, parental leave even in Scandinavian countries is still largely used by mothers. Thus, as long as presumably gender-neutral policies such as parental leave actually reinforce the traditional division of labour, we cannot say whether they can help narrowing the gender gap. Consequently, policy-makers and employers need to create incentives so that fathers are more likely to take up paid leave. Bünning (2015) finds that fathers who took parental leave in the long run reduced their working hours and got more involved in childcare. Fathers who took more than 2 months of leave while their partner was working also got more involved in housework which indicates an even more substantial impact on gender equality in the household. However, research also suggests that it is not only the availability of the policy that matters, but also the workplace environment. Bygren *et al.* (2007) find that men are more likely to shorten their parental leave if other male colleagues have done so similarly. Thus, not only policies or parents, but also employers need to support the take up of parental leave for fathers.

In summary, this thesis makes the following policy recommendations:

1. For employers, particularly in the private sector, to change workplace culture by improving work-life balance, encouraging flexible working arrangements and discouraging working overtime and long hours (OECD; 2014).

2. For Governments and companies to share role model examples of equal sharing of paid work and care commitments in order to change both men's and women's attitudes and behaviour towards working-mothers.
3. For Governments and particularly private sector employers to share success stories of female role models.
4. For Governments to provide longer paternity leaves, increase pay of paternity leave and for employers to actively encourage fathers to take up paternity leave.
5. For women to join unions and for unions to take actions to challenge inequalities even if their core members do not necessarily benefit.
6. For employers to address the extensive use of longer hours and overtime and stop rewarding longer hours disproportionally.
7. For Governments and Unions to challenge employers' statistical discrimination of women.
8. For Governments and/or employers to invest in more flexible childcare arrangements such as a mixture of private and public childcare, childcare facilities with non-standard hours and to allow parents to organise their shifts so that they can look after their children accordingly.
9. For women to invest into in firm specific skills as these may not actually be a deterrent in reaching top positions.

All in all, this thesis clearly highlights how career chances of highly educated women are currently not addressed at all by family policies or labour market institutions. Not only do unions and employers seem to fail to break the glass ceiling, but also policy-makers. Only if stakeholders both in the labour market and in governments realise the potential that is lost to the economy and society by hindering particularly highly educated women from reaching the top, can progress be made. For this, it is vital to acknowledge the diversity of the female workforce as this thesis clearly points out how education plays a major role and that the gender gap seems to be even wider for higher educated women.

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# Appendix

## Appendix A: Supporting Literature for Chapter 2

### The impact of household and market-level factors on gender labour market inequalities

The focus of this thesis is to understand cross-national variation of the gender gap in top positions. Therefore, factors at the individual-level are not directly part of this research. However, as the author is aware of the vast body of literature on household and market-level factors affecting gender labour market inequalities, the following sections aim to briefly summarise the literature on gender inequalities. In other words, why is it that individuals at the household level or in the labour market make decisions that lead to inequalities?

### Gender labour market inequalities at the market level

Both horizontal and vertical segregation can be analysed from the perspective of human capital. Human Capital Theory (HCT) defines this "as the stock of knowledge and skills accumulated by an individual and is acquired through education, training and experience" (Perales, 2013, p. 602). In a nutshell, HCT applied to gender labour market inequalities explains the gender gap through differences in human capital between men and women. Differences in Human Capital are due to the traditional division of labour. However this does not only affect women's part-time rates as explained before, but has an impact on their career choices on the one hand and ultimately leads to discrimination at the labour market due to gendered norms employers have. This chain of effects begins with the traditional division of domestic and paid labour between the spouses as explained earlier. From a HCT perspective, Becker (1985) argues that the tendency of women to do the majority of domestic work has a negative impact on their earnings. In his theory on work effort and rational choice theory he describes that domestic work decreases women's earning since it limits the time married women can spend on the formal labour market. Due to domestic work and children in particular women have to interrupt their work and career. This leads to less work experience, training and therefore to a disadvantage on

the labour market (Polachek, 1981) and also discourages women to invest in their qualifications. The key aspect here is that women therefore choose to work in more flexible jobs that do not require experience and allow for interruptions. The starting wage might be comparably high but in the long run, because experience and specific skills do not matter, women earn less than men (Perales, 2013). Beyond the wage gap due to reduced hours worked, this consequently leads to the described horizontal segregation of the labour market, as women choose occupation that allow for interruptions. (Female) workers choose the best-paid job keeping their own qualifications, limitations and preferences in mind (Anker, 1997). However, there are limitations to these studies. Firstly, they overemphasise the impact of motherhood on career developments and choices. Reducing individuals career decisions to the conflict of combining work and family, does not capture this development, as first of all, not every woman will become a mother and second, women have been investing into education and qualifications to an even larger extent than men have in recent decades (Bettio *et al.*, 2009). Consequently, we need to also include employers as they seem to be "the gatekeepers to employment" (Burchell *et al.*, 2014, p. 12). Following Human Capital Theory, employers aim to maximize profits by choosing the worker that helps to maximize productivity and minimize costs.

In addition, both Human Capital Theory and social exchange theory share a key limitation: the assumption that both employers and employees base their decision on a completely rational evaluation of the individual's skills sets. Pfau-Effinger (1998) criticises these theories for overemphasising on the rationality of individual's behaviour. She argues that women's decisions regarding division of work at the household level are not based on financial incentives only. She suggests a new framework that includes norms by focusing on "interrelations of culture, structure and action" (Pfau-Effinger, 1998, p. 150). This interrelation shapes gendered arrangements that do not necessarily reflect policies, but are rather based on the behaviour of social actors. Therefore, changes in gendered arrangements are driven by traditions and norms which then result in cross-national variations of female labour market participation. These traditions lead to different perceptions of the "correct" gendered division of labour. In the Netherlands for example, the male breadwinner model is still strong due to the prevailing

gendered arrangement of housewife marriage that go back to the 17th century. A main reason for this was the strong urban bourgeoisie with its ideal type of a housewife marriage. In Sweden and Finland, this bourgeoisie was not as prevalent as the family model of free farmers. Consequently, when examining gender inequalities at the household level, we need to include attitudes and culture as gendered arrangements do not always correspond with national policies, but rather interrelate with those. Visser (2002) for example shows that in the case of the Netherlands, the increase in part-time work is not only due to married women entering the labour market and a lack of childcare facilities, but also caused by embedded structures of a former traditional male breadwinner society.

Especially with regards to vertical segregation, we need to examine discrimination based on gendered norms that impact employers' behaviour as occupational segregation is highly based on cultural aspects and gender-related stereotypes (Anker, 1997). Anker distinguishes between positive characteristics, negative and other characteristics. While the positive stereotypes assume that women have a caring nature, are skilled in domestic work, have greater finger dexterity, are more honest and also have a more attractive physical appearance, negative stereotypes assume women to be unable to supervise other, to be less talented in science and mathematics, and physically not as strong as men. Additionally, women are suspected to be more willing to take orders which also refer back to their inability to give orders. This does not only have consequences for the type of job they get, but results in gendered hierarchies. According to Anker (1997) women are less likely to complain about bad working conditions or their work in general. This is why female-dominated occupations tend to be more repetitive and monotonous which again has consequences both on vertical and horizontal segregation and female occupations tend to be lower-paid (England *et al.*, 2007). These types of jobs also provide workers with less control over their work (Chung, 2018).

These gender-related stereotypes and gendered norms can also explain gendered hierarchies in the labour market. Even though different patterns exist among those different

types of divisions, generally men obtain more power and “almost always” work in the “highest position of organizational power” (Acker, 1990, p. 146). Criteria that decide over the level of a job are the required knowledge, skills, their complexity, the effort and working conditions (Acker, 1990). In addition, responsibility and job complexity defined by managerial and professional tasks are detrimental. Even though these criteria come across as rational, they are based on the assumption of organizational logic that only the “ideal workers”, those without any other commitments can fully meet the expected level of responsibility and authority. This is specifically problematic for women as any form of commitment such as child-rearing leads to a lower-rank position with lower wages. Generally, women’s bodies and every factor that is incidental with it such as pregnancies or even their menstruation seems to cause exclusions and stigmata that again are the basis for prejudices. These prejudices lead to the assumption that women cannot meet the requirements of a higher ranked job such as a skilled blue-collar work or top management (Acker, 1990). In a nutshell, Acker’s theory on gendered organizations argues that vertical and horizontal segregation exist due to the connection between arguably rational judgements on job hierarchies and stereotypes against the female worker that does not fit into the male and patriarchal structures.

**Gender labour market inequalities at the household level**

Whereas it seems that for men there have to be reasons that literally hinder them from working full-time, such as the lack of full-time jobs or health problems, unemployment, school attendance or partial retirement (Rosenfeld and Birkelund, 1995, p.111), many women choose part-time work because of child-rearing and providing care for family members (Stier and Lewin-Epstein, 2001). Since women still do most of the domestic work including childrearing, they tend to choose jobs with reduced hours in order to combine domestic and formal labour-market work (Blossfeld, 1994; Moen, 1985). Other scholars such as Warren (2010) examine the type and level of jobs and their association with part-time employment. Warren (2010) observes that in the UK and Austria for example women in part-time employment are particularly common in low-level employment, whereas in Finland, France, Luxembourg and Spain this is the case for manual/

elementary jobs. In the Netherlands and Ireland on the other hand, Warren finds high part-time rates across all levels and types of employment. Thus, the question could arise whether at all part-time rates are an indicator for gender labour market inequalities. Warren (2001) finds that for the UK and Denmark, part-time rates are associated with the reinforcement of the male breadwinner model. So, why is it that women are substantially more likely to be working part-time?

What is more, these gendered stereotypes in combination with seemingly rational decisions based on human capital and gendered stereotypes lead do women being discriminated in the labour market based on employers' fear of career interruptions due to childbearing or caring responsibilities. Employers engage in "statistical discrimination" of women and they are more likely to hire men as they fear potential work interruptions. Statistical discrimination (Anker, 1997) is based on the assumptions that on average women have different skills, productivity and experience. By not questioning these assumptions in the individual case, employers save the cost of recruiting the appropriate candidate of either gender. Basically, it is cheaper to hold on to statistical discrimination than to invest into recruitment. According to Anker (1997) this approach also explains why in some job sectors gender segregation sustains even though there are both men and women with appropriate skills and experience.

While social exchange theory and Human Capital Theory focus on decisions made at the family or the individual level and to some extent by the market, Pfau-Effinger and Acker add a more holistic perspective that is based les on rational decision making, but more on norms, culture and tradition. By doing so, the national context is taken into account. Going beyond the individual and the market, other focus on policies at the state level. Even though welfare states can impact labour markets by implementing regulations and policies, the effect of national policies on women's labour market position is not straight-forward as the following paragraph highlights. We can expect gender labour market inequalities to vary as first of all policies still vary

substantially across countries, but also attitudes and embedded labour market structures vary. From an empirical perspective, this assumption is logical based on the previous sections where there was considerable variation in the various forms of gender inequalities across countries.

## Appendix B: Statistical Appendix to Chapter 4

**Table B.1 Vocational Training Intensity**

| COUNTRY | SECONDARY TOTAL | SECONDARY VOCATIONAL | SIZE OF TERTIARY AGE COHORT | TERTIARY ISCED5 | INCIDENCE OF VOCATIONAL TRAINING (=secondary vocational/total secondary+ISCED5/tertiary age cohort) |
|---|---|---|---|---|---|
| Austria | 743709 | 293980 | 509495 | 13468 | 42,17230356 |
| Belgium | 805880 | 321512 | 657662 | 42212 | 46,31426073 |
| Bulgaria | 531980 | 160123 | 494882 | 6929 | 31,49957158 |
| Cyprus | 63662 | 4236 | 66719 | 2291 | 10,08769532 |
| Czech Republic | 836847 | 334690 | 683163 | 6659 | 40,96889936 |
| Denmark | 504205 | 131952 | 326728 | 7535 | 28,47650736 |
| Estonia | 95331 | 18686 | 101168 | 3928 | 23,48382969 |
| Finland | 426710 | 131388 | 322521 | 87 | 30,81791028 |
| France | 5873103 | 1173133 | 3930005 | 221720 | 25,61639407 |
| Germany | 7663755 | 1557160 | 4471040 | 94057 | 22,42219322 |
| Greece | 716601 | 111738 | 624782 | 20791 | 18,92049828 |
| Hungary | 904848 | 137774 | 644296 | 8500 | 16,54547314 |
| Ireland | 336464 | 62983 | 307685 | 13547 | 23,12196987 |
| Italy | 4626426 | 1708779 | 2991346 | 3195 | 37,04199306 |
| Latvia | 147375 | 34772 | 159828 | 4958 | 26,69631714 |
| Lithuania | 342905 | 38324 | 235078 | 12672 | 16,56682453 |
| Luxembourg | 42536 | 12867 | 29417 | 435 | 31,72840765 |
| Malta | 37163 | 5585 | 25950 | 241 | 15,95709751 |
| Netherlands | 1474983 | 698116 | 998953 | 976 | 47,4281461 |
| Norway | 435085 | 130995 | 308294 | 323 | 30,21268007 |
| Poland | 2841629 | 814077 | 2936439 | 5176 | 28,82451863 |
| Portugal | 720688 | 183156 | 584261 | 80 | 25,42774131 |
| Romania | 1821782 | 607797 | 1474042 | 140 | 33,37227107 |

**Table B.1 (cont.)**

| COUNTRY | SECONDARY TOTAL | SECONDARY VOCATIONAL | SIZE OF TERTIARY AGE COHORT | TERTIARY ISCED5 | INCIDENCE OF VOCATIONAL TRAINING (=secondary vocational/total secondary+ISCED5/tertiary age cohort) |
|---|---|---|---|---|---|
| Slovakia | 549760 | 194950 | 412511 | 745 | 35,64152965 |
| Slovenia | 138354 | 49571 | 130144 | 7956 | 41,94233347 |
| Spain | 3185008 | 532582 | 2388415 | 89710 | 20,47757528 |
| Sweden | 731273 | 234966 | 609266 | 7737 | 33,40098063 |
| United Kingdom | 5538230 | 732919 | 4197265 | 134683 | 16,44264062 |

Source: UNESCO database

## Appendix C: Statistical Appendix to Chapter 5

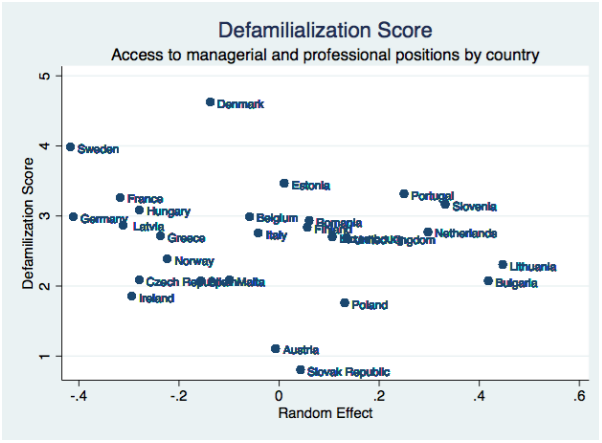
**Table C.1 Random effects models**

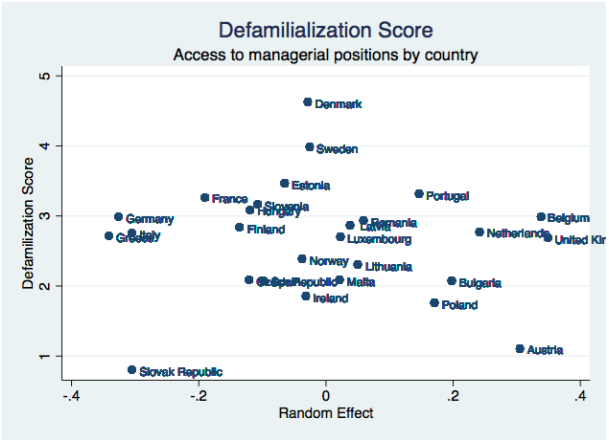
| | | Management (tertiary) | Managers and professionals (tertiary) | Management (all) | Managers and professionals (all) |
|---|---|---|---|---|---|
| Albania | | -0.33 | 0.13 | -0.33 | 0.00 |
| Austria | | -0.22 | -0.24 | -0.33 | -0.30 |
| Belgium | | -0.05 | -0.43 | -0.25 | -0.46 |
| Bulgaria | | -0.19 | 0.05 | -0.37 | -0.01 |
| Croatia | | -0.22 | 0.04 | -0.36 | -0.21 |
| Cyprus | | -0.35 | -0.68 | -0.40 | -0.63 |
| Czech Republic | | -0.51 | -0.65 | -0.38 | -0.56 |
| Denmark | | -0.42 | -0.51 | -0.42 | -0.40 |
| Estonia | | -0.46 | -0.36 | -0.43 | -0.42 |
| Finland | | -0.42 | -0.79 | -0.30 | -0.70 |
| France | | -0.58 | -0.69 | -0.40 | -0.58 |
| Germany | | -0.72 | -0.78 | -0.54 | -0.65 |
| Global Average | | -0.39 | -0.37 | -0.39 | -0.40 |
| Greece | | -0.73 | -0.61 | -0.52 | -0.65 |
| Hungary | | -0.37 | -0.47 | -0.31 | -0.40 |
| Ireland | | -0.42 | -0.67 | -0.42 | -0.60 |
| Italy | | -0.70 | -0.41 | -0.51 | -0.44 |
| Latvia | | -0.34 | 0.08 | -0.46 | -0.12 |
| Lithuania | | -0.37 | -0.26 | -0.38 | -0.33 |
| Luxembourg | | -0.51 | -0.65 | -0.41 | -0.53 |
| Malta | | -0.15 | -0.07 | -0.36 | -0.33 |
| Netherlands | | -0.09 | -0.38 | -0.34 | -0.45 |
| Norway | | -0.11 | 0.13 | -0.29 | -0.62 |
| Poland | | -0.25 | -0.12 | -0.40 | -0.29 |
| Portugal | | -0.33 | -0.31 | -0.42 | -0.41 |
| Romania | | -0.50 | -0.04 | -0.39 | -0.13 |
| Slovak Republic | | -0.53 | -0.31 | -0.34 | -0.22 |
| Slovenia | | -0.70 | -0.33 | -0.55 | -0.21 |
| Spain | | -0.49 | -0.53 | -0.52 | -0.66 |
| Sweden | | -0.04 | -0.24 | -0.19 | -0.23 |
| Turkey | | -0.43 | -0.59 | -0.50 | -0.41 |
| United Kingdom | | -0.15 | -0.50 | -0.27 | -0.52 |

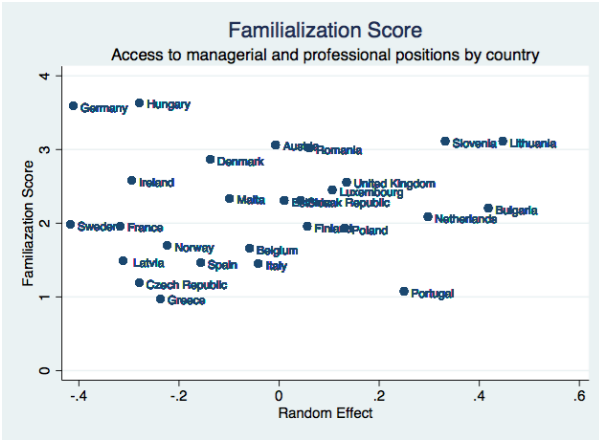
Note: N=10,908(tertiary)/ N=35,021 (all)

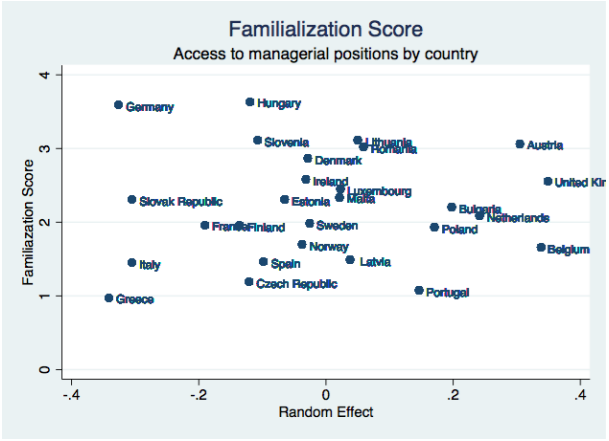
## Appendix D: Statistical Appendix to Chapter 6

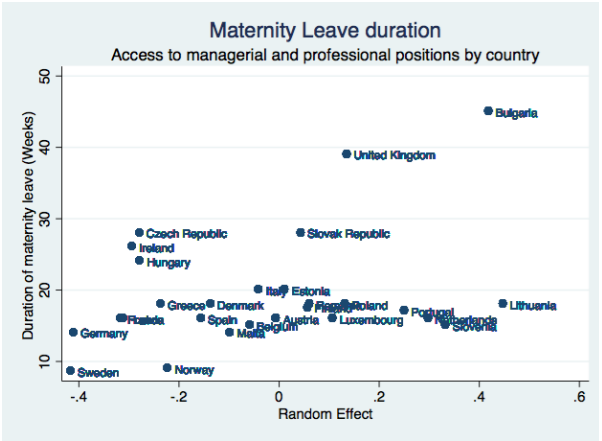
### Figure D.1 Family Policies and Random effects

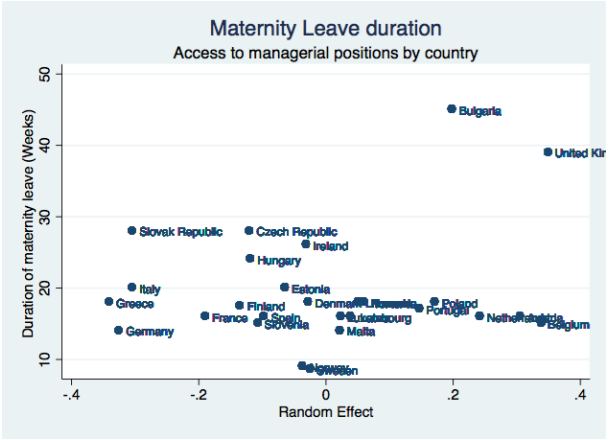


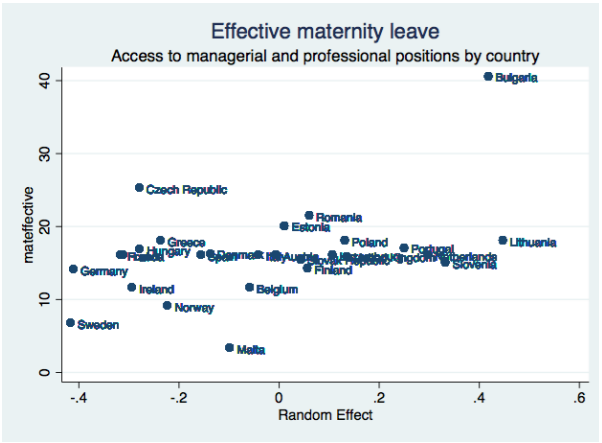

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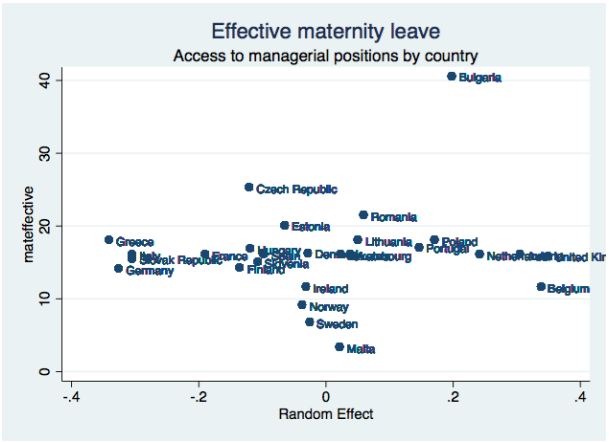
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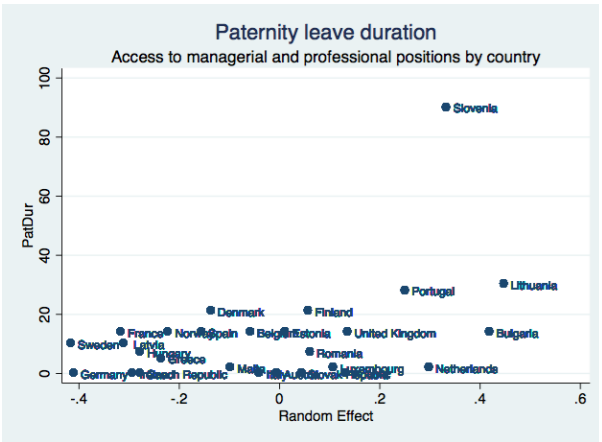
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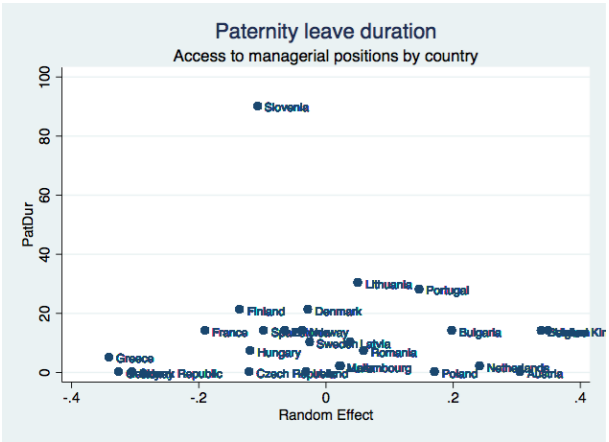
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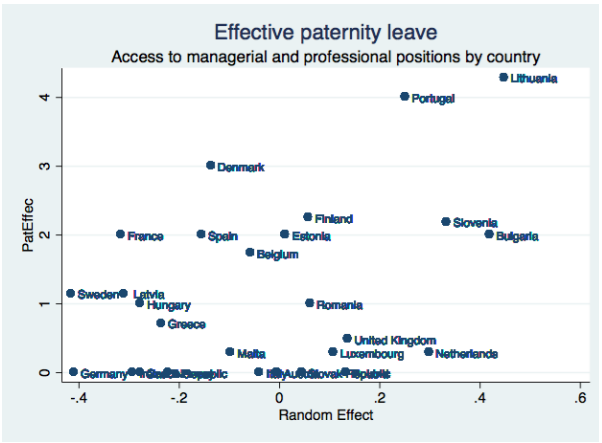
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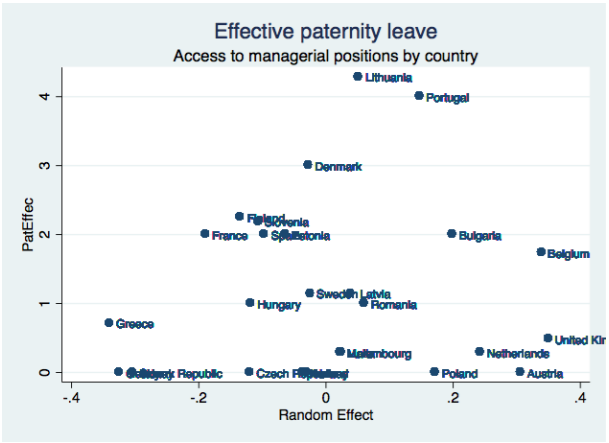
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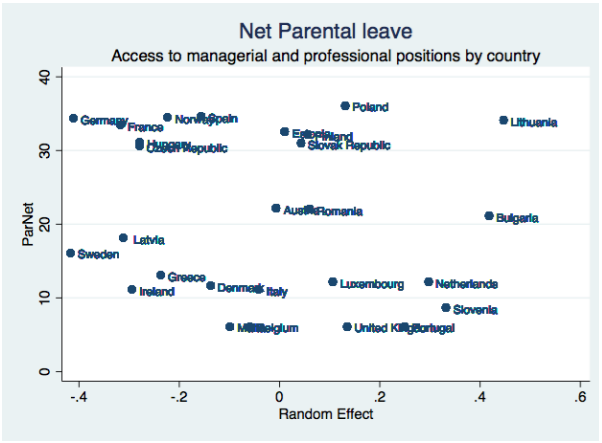
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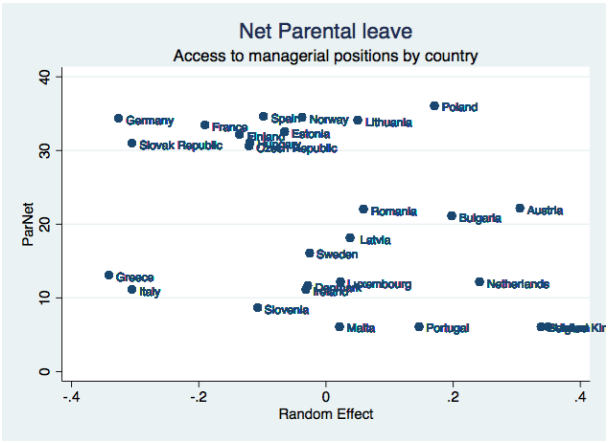
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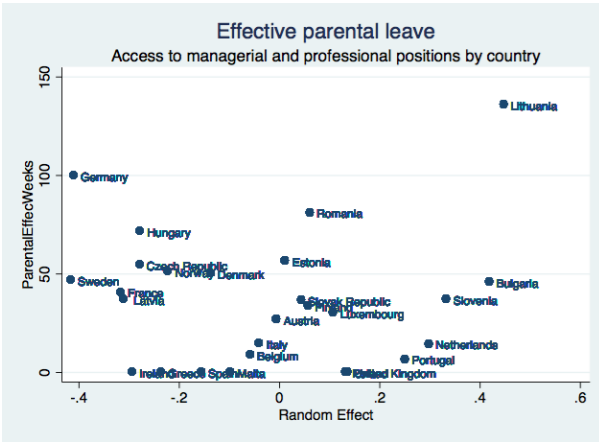
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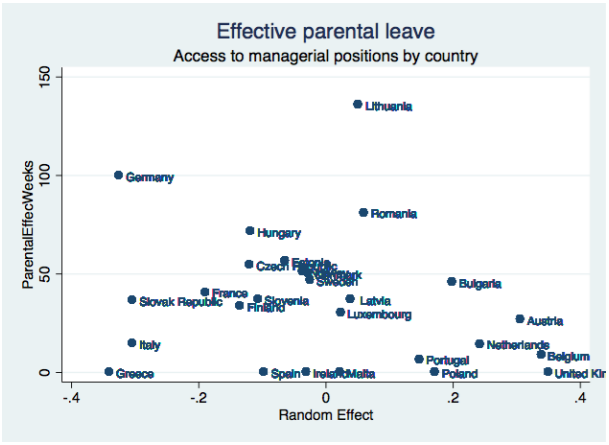
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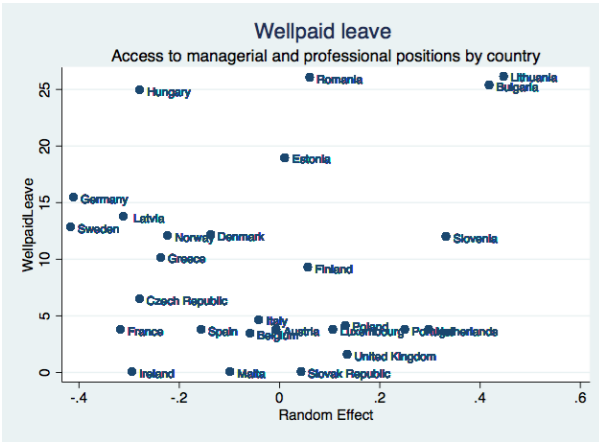
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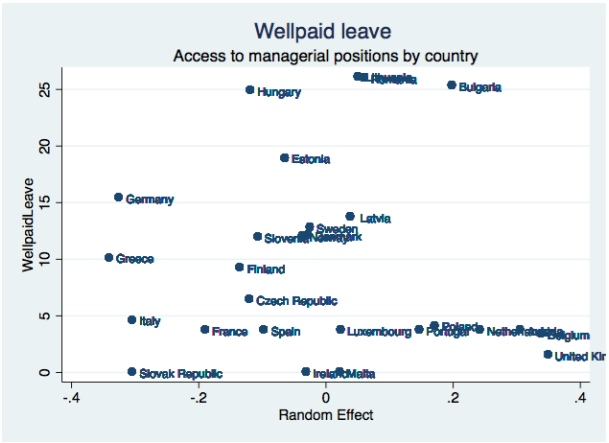
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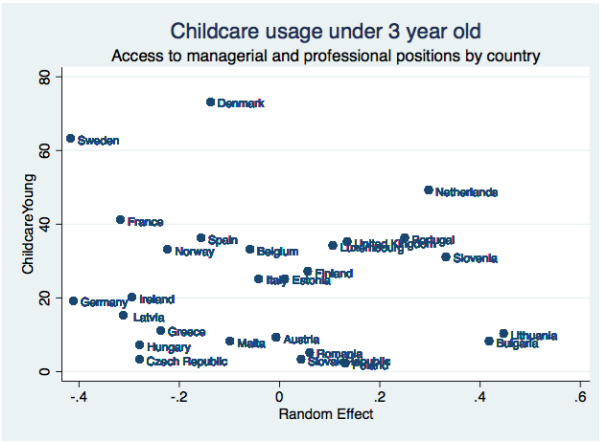
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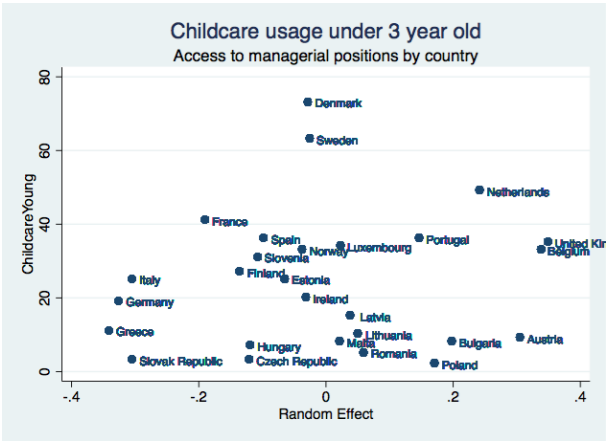
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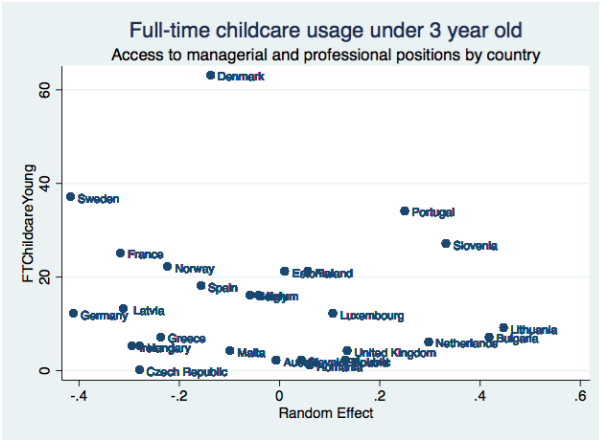
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Access to managerial and professional positions by country
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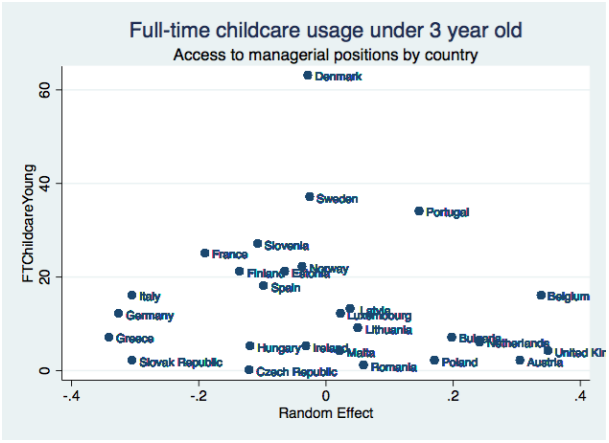
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Access to managerial positions by country
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Norway
Finland
Estonia
Spain
Italy
Germany
Belgium
Latvia
Luxembourg
Lithuania
Greece
Hungary
Ireland
Malta
Bulgaria
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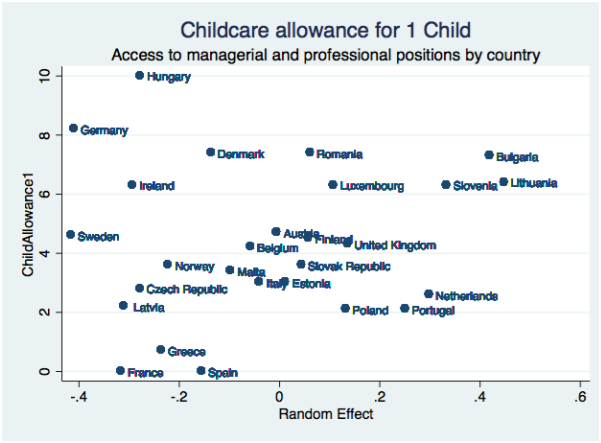
Slovak Republic
Czech Republic
Romania
Poland
Austria


Childcare allowance for 1 Child
Access to managerial and professional positions by country
ChildAllowance1
Random Effect
Hungary
Germany
Denmark
Romania
Bulgaria
Ireland
Luxembourg
Slovenia
Lithuania
Sweden
Austria
Finland
Belgium
United Kingdom
Norway
Malta
Slovak Republic
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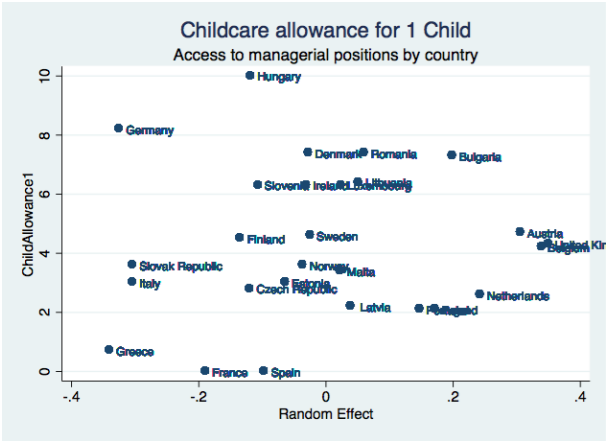
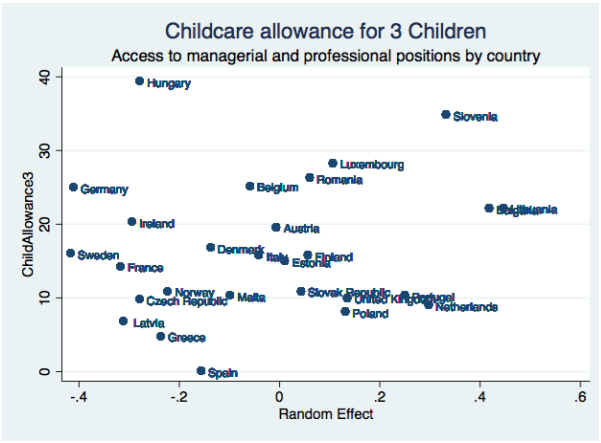
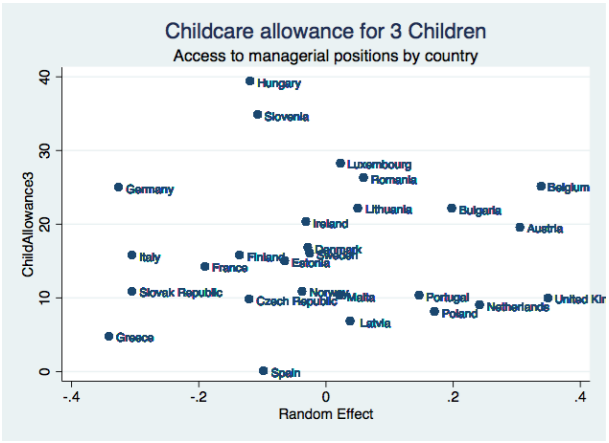
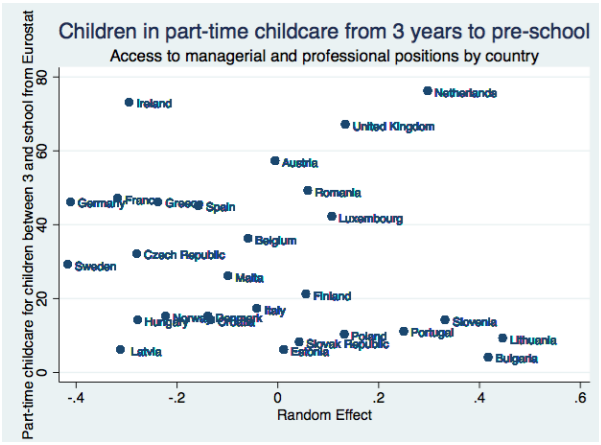
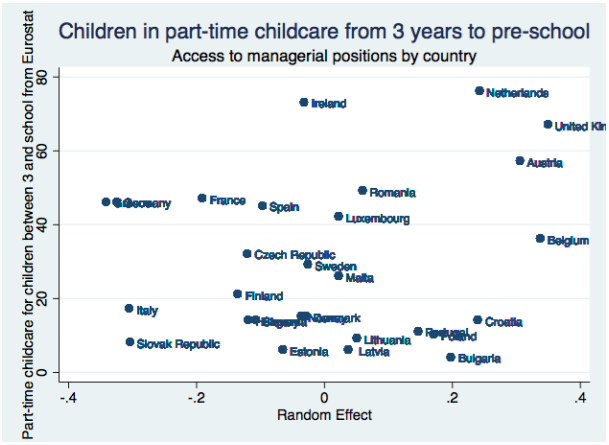
Netherlands
Latvia
Poland
Portugal
Greece
France
Spain


Childcare allowance for 1 Child
Access to managerial positions by country
ChildAllowance1
Random Effect
Hungary
Germany
Denmark
Romania
Bulgaria
Slovenia
Finland
Sweden
Austria
Slovak Republic
Norway
Malta
Italy
Estonia
Czech Republic
Netherlands
Latvia
Greece
France
Spain


Childcare allowance for 3 Children
Access to managerial and professional positions by country
ChildAllowance3
Random Effect
Hungary
Slovenia
Luxembourg
Romania
Germany
Belgium
Ireland
Austria
Denmark
Sweden
France
Finland
Estonia
Norway
Czech Republic
Malta
Slovak Republic
Portugal
Netherlands
Poland
Latvia
Greece
Spain


Childcare allowance for 3 Children
Access to managerial positions by country
ChildAllowance3
Random Effect
Hungary
Slovenia
Luxembourg
Romania
Germany
Belgium
Lithuania
Bulgaria
Ireland
Austria
Italy
Finland
France
Slovak Republic
Czech Republic
Malta
Portugal
Poland
Netherlands
Latvia
Greece
Spain


Children in part-time childcare from 3 years to pre-school
Access to managerial and professional positions by country
Part-time childcare for children between 3 and school from Eurostat
Random Effect
Netherlands
Ireland
United Kingdom
Austria
Romania
Germany
France
Greece
Spain
Luxembourg
Belgium
Czech Republic
Sweden
Malta
Finland
Italy
Slovenia
Portugal
Lithuania
Latvia
Slovak Republic
Bulgaria


Children in part-time childcare from 3 years to pre-school
Access to managerial positions by country
Part-time childcare for children between 3 and school from Eurostat
Random Effect
Netherlands
Ireland
Austria
France
Spain
Romania
Luxembourg
Belgium
Czech Republic
Sweden
Malta
Finland
Italy
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Lithuania
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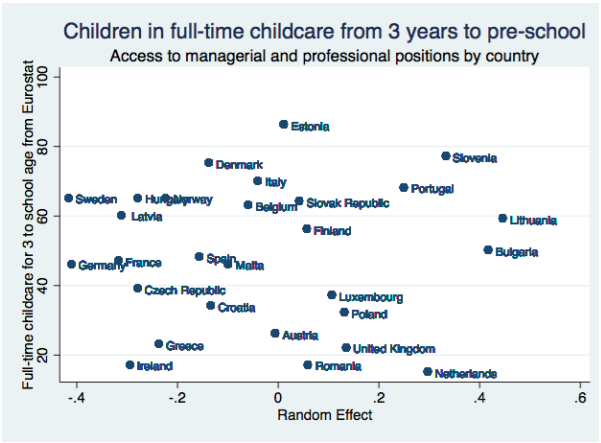
Estonia
Latvia
Bulgaria


Children in full-time childcare from 3 years to pre-school
Access to managerial and professional positions by country
Full-time childcare for 3 to school age from Eurostat
Random Effect
Estonia
Denmark
Slovenia
Italy
Portugal
Sweden
Belgium
Slovak Republic
Latvia
Lithuania
Finland
Bulgaria
Germany
France
Spain
Malta
Czech Republic
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Croatia
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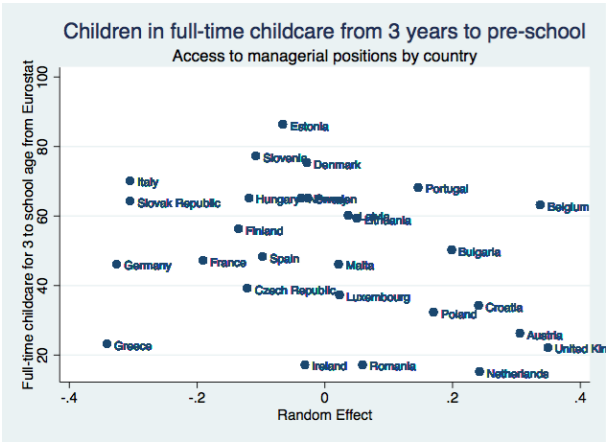
Austria
Greece
United Kingdom
Ireland
Romania
Netherlands


Children in full-time childcare from 3 years to pre-school
Access to managerial positions by country
Full-time childcare for 3 to school age from Eurostat
Random Effect
Estonia
Slovenia
Denmark
Italy
Portugal
Slovak Republic
Belgium
Finland
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Czech Republic
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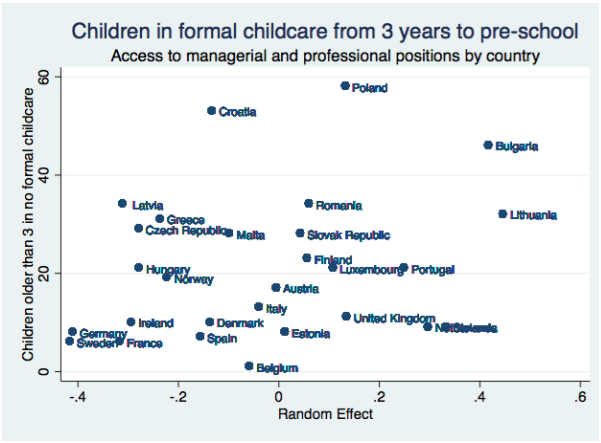
Ireland
Romania
Netherlands


Children in formal childcare from 3 years to pre-school
Access to managerial and professional positions by country
Children older than 3 in no formal childcare
Random Effect
Poland
Croatia
Bulgaria
Latvia
Romania
Lithuania
Greece
Czech Republic
Malta
Slovak Republic
Finland
Luxembourg
Portugal
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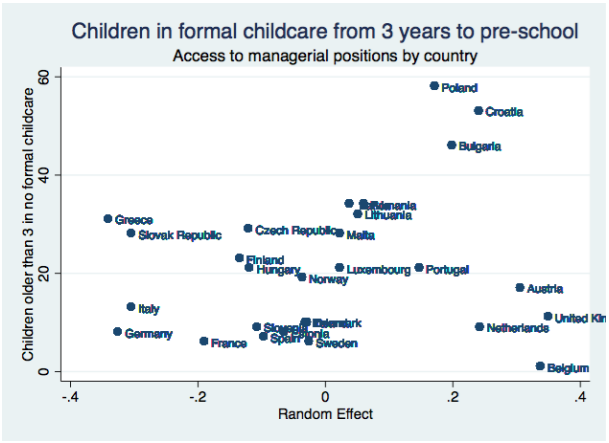
France
Spain
Estonia
Belgium


Children in formal childcare from 3 years to pre-school
Access to managerial positions by country
Children older than 3 in no formal childcare
Random Effect
Poland
Croatia
Bulgaria
Lithuania
Greece
Slovak Republic
Czech Republic
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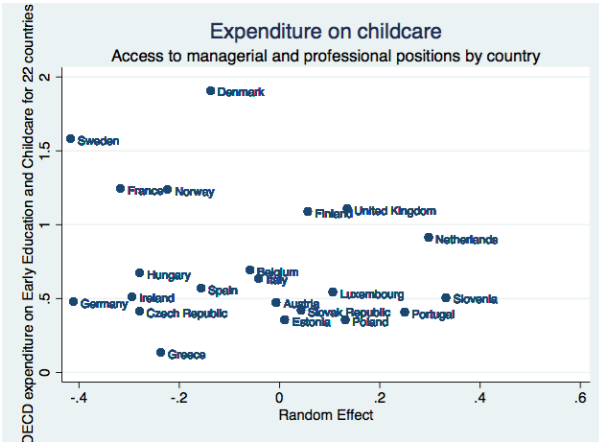
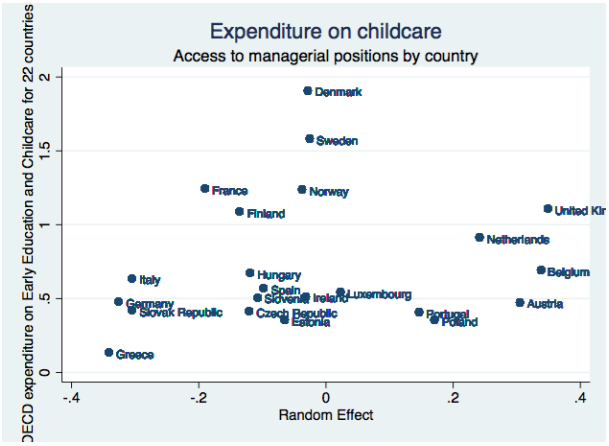

Expenditure on childcare
Access to managerial and professional positions by country
OECD expenditure on Early Education and Childcare for 22 countries
Random Effect
Denmark
Sweden
France
Norway
Finland
United Kingdom
Netherlands
Hungary
Belgium
Italy
Spain
Luxembourg
Slovenia
Germany
Ireland
Austria
Slovak Republic
Czech Republic
Estonia
Poland
Portugal
Greece


Expenditure on childcare
Access to managerial positions by country
OECD expenditure on Early Education and Childcare for 22 countries
Random Effect
Denmark
Sweden
France
Norway
Finland
Netherlands
Belgium
Italy
Hungary
Spain
Luxembourg
Germany
Slovak Republic
Czech Republic
Estonia
Portugal
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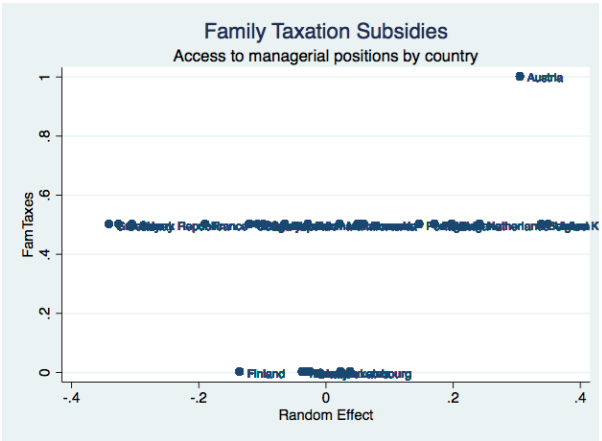
Greece


Family Taxation Subsidies
Access to managerial positions by country
FamTaxes
Random Effect
Austria
Finland

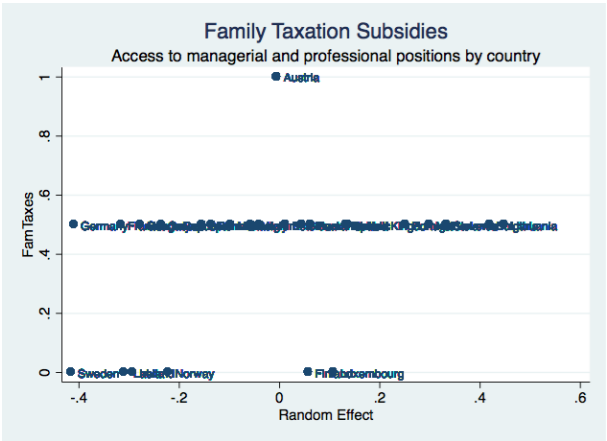

Family Taxation Subsidies
Access to managerial and professional positions by country
FamTaxes
Random Effect
Austria
Sweden
Norway

**Table D.1 Statistically significant main effect – senior professional and managerial positions 5**

| A / B | Maternity Leave (length) | Effec. maternity leave | Paternity leave duration | Effec. paternity leave | Net Parental leave | Effec. parental leave | Well-paid leave | Childcare usage under 3 | Full-time childcare usage under 3 | Allowance for 1 Child | Allowance for 3 Children | Family Taxation Subsidy | Full-time childcare over 3 | part-time childcare over 3 years | no formal childcare over 3 years |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Maternity Leave (duration) | | | | | | | | | | | | | | | |
| Effective maternity leave | + | | | | | | | | | | | | | | |
| Paternity leave duration | + | + | | | | | | | | | | | | | |
| Effective paternity leave | + | + | + | | | | | | | | | | | | |
| Net Parental leave | + | + | + | + | | | | | | | | | | | |
| Effective parental leave | + | + | + | + | + | | | | | | | | | | |
| Wellpaid leave | + | + | + | + | + | + | | | | | | | | | |
| Childcare usage under 3 | + | + | + | + | + | + | + | | | | | | | | |
| Full-time childcare usage under 3 | + | + | + | B(+)€ | + | + | + | + | | | | | | | |

[5] Notes: Entries are results from 105 separate multilevel models, in which contextual variables are introduced in pairs (having controlled for the individual level characteristics)A (represents when the variable in column A is significant) B (represents when the variable in column B is significant), n.s. represents when both variables are insignificant. The letters in bold represents the stronger predictor in the model.
*** = p <0.001, ** = p < 0.01, * = p < 0.05, € = p < 0.10

**Table D.1 Statistically significant main effect – senior professional and managerial positions (cont.)6**

| A / B | Maternity Leave (length) | Effec. maternity leave | Paternity leave duration | Effec. paternity leave | Net Parental leave | Effec. parental leave | Well-paid leave | Childcare usage under 3 | Full-time childcare usage under 3 | Allowance for 1 Child | Allowance for 3 Children | Family Taxation Subsidy | Full-time childcare over 3 years | part-time childcare over 3 years | no formal childcare over 3 years |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Childcare allowance for 1 Child | + | + | + | + | + | + | + | + | + | | | | | | |
| Childcare allowance for 3 Children | + | + | + | + | + | + | + | + | + | A (+)** B (-)** | | | | | |
| Family Taxation Subsidies | B(-)* | B(-)** | B(-)** | B(-)** | B(-)** | B(-)** | B (-) ** | B(-)** | B (-) * | B (-) ** | B (-) ** | | | | |
| full-time childcare enrolment for 3-before school | + | + | + | + | + | + | + | + | + | + | + | A(-)* | | | |
| part-time childcare enrolment for 3-before school | + | + | B(-)€ | B(-)€ | + | + | + | + | + | + | + | A (-)* | B(-)* | | |
| no formal childcare enrolment for 3- | + | B(+)€ | + | + | + | + | + | A(+)*** B (+)*** | A(+)* B (+)* | + | + | A (-)** | B(+)* | + | |
| Expenditure childcare | B(+)* | B(+)€ | B(+)* | B(+)* A(-)€ | B(+)€ | B(+)€ | B(+)€ | + | + | B(+)€ | B(+)€ | A (-)* | B(+)€ | B(+)* | A (+)* B(+)** |

[6] Notes: Entries are results from 105 separate multilevel models, in which contextual variables are introduced in pairs (having controlled for the individual level characteristics)A (represents when the variable in column A is significant) B (represents when the variable in column B is significant), n.s. represents when both variables are insignificant. The letters in bold represents the stronger predictor in the model.

*** = p <0.001, ** = p < 0.01, * = p < 0.05, € = p < 0.10

**Table D.2 Statistically significant main effect – managerial positions7**

| A / B | Maternity Leave (length) | Effec. maternity leave | Paternity leave length | Effec. paternity leave | Net Parental leave | Effec. parental leave | Well-paid leave | Childcare usage under 3 | Full-time childcare usage under 3 | Allowance for 1 Child | Allowance for 3 Children | Family Taxation | Full-time childcare over 3 | part-time childcare over 3 years | no formal childcare over 3 years |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Effective maternity leave | n.s. | | | | | | | | | | | | | | |
| Paternity leave duration | n.s. | n.s. | | | | | | | | | | | | | |
| Effective paternity leave | n.s. | n.s. | n.s. | | | | | | | | | | | | |
| Net Parental leave | n.s. | n.s. | n.s. | n.s. | | | | | | | | | | | |
| Effective parental | n.s. | n.s. | n.s. | n.s. | n.s. | | | | | | | | | | |
| Wellpaid leave | n.s. | A(-)€ | n.s. | n.s. | n.s. | n.s. | | | | | | | | | |
| Childcare usage under 3 | B(+)* | B(+)€ | B(+)* | B(+)** | B(+)* | B(+)* | n.s. | | | | | | | | |
| Full-time childcare usage under 3 | n.s. | n.s. | B(+)€ | A(-)*/**B(+)**** | n.s. | n.s. | n.s. | n.s. | | | | | | | |

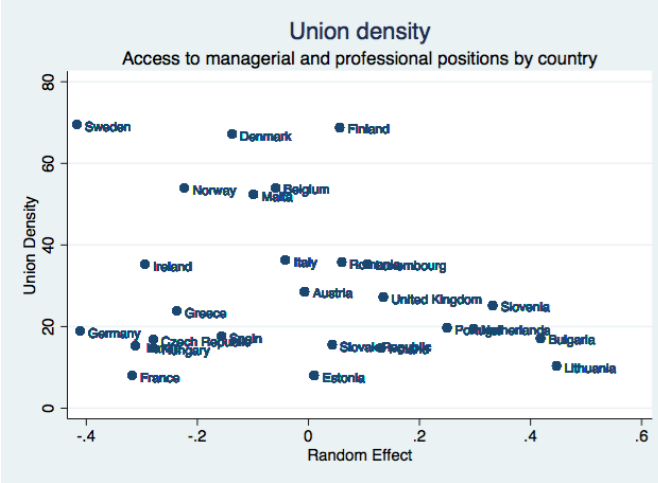
[7] Notes: Entries are results from 105 separate multilevel models, in which contextual variables are introduced in pairs (having controlled for the individual level characteristics)A (represents when the variable in column A is significant) B (represents when the variable in column B is significant), n.s. represents when both variables are insignificant. The letters in bold represents the stronger predictor in the model.
*** = p <0.001, ** = p < 0.01, * = p < 0.05, € = p < 0.10

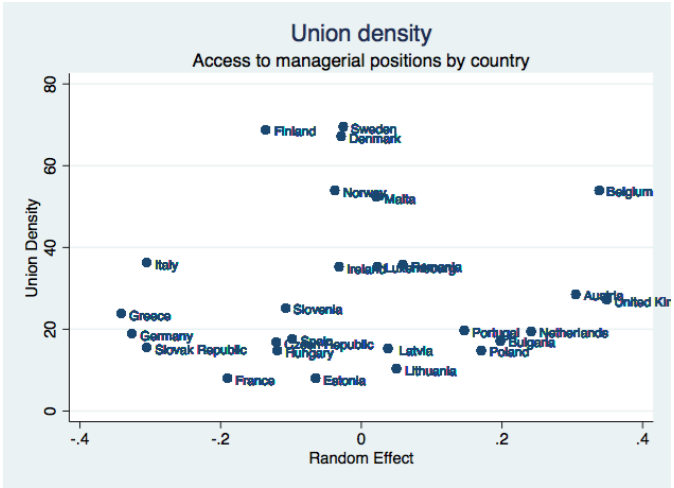
**Table D.2 Statistically significant main effect – managerial positions (cont)8**

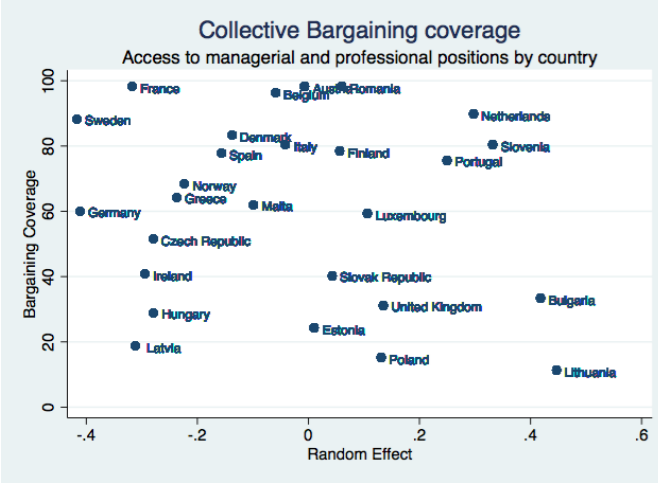
| A / B | Maternity Leave (length) | Effec. maternity leave | Paternity leave duration | Effec. paternity leave | Net Parental leave | Effec. parental leave | Well-paid leave | Childcare usage under 3 | Full-time childcare usage under 3 | Allowance for 1 Child | Allowance for 3 Children | Family Taxation Subsidy | Full-time childcare over 3 years | part-time childcare over 3 years | no formal childcare over 3 years |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Childcare allowance for 1 Child | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. | A (+)* | n.s. | | | | | | |
| Childcare allowance for 3 Children | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. | A (+)* | A(+)€ | **A(+)*/**B(-)€ | | | | | |
| Family Taxation Subsidies | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. | A (+)* | n.s. | n.s. | n.s. | | | | |
| full-time childcare enrolment for 3- before school | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. | A (+)* | A(+)€ | n.s. | n.s. | n.s. | | | |
| part-time childcare enrolment for 3- before school | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. | n.s. | A (+)* | A(+)* | n.s. | n.s. | n.s. | A(+)* / B(+)* | | |
| no formal childcare enrolment for 3- before school | B(-)€ | n.s. | B(-)€ | B(-)* | B(-)* | B(-)* | B(-)* | n.s. | n.s. | B(-)* | B(-)€ | B(-)* | B(-)** | B(-)* | |
| Expenditure childcare | B(+)* | B(+)€ | B(+)* | B(+)** | B(+)* | B(+)* | B(+)* | n.s. | B(+)€ | B(+)* | B(+)* | B(+)* | B(+)* | B(+)* | B(+)* |

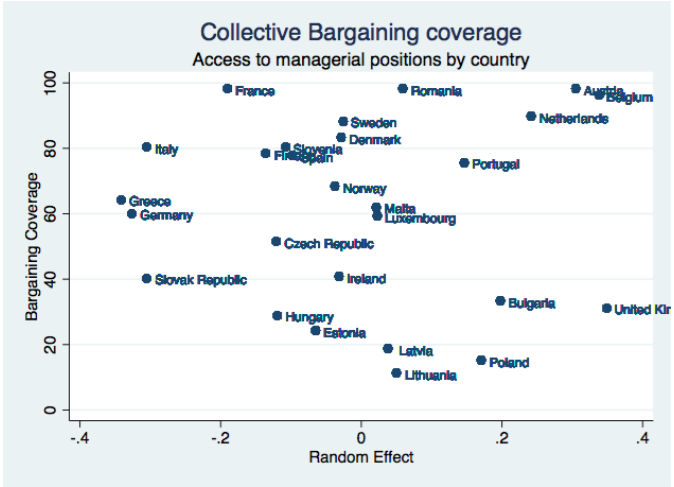
[8] Notes: Entries are results from 105 separate multilevel models, in which contextual variables are introduced in pairs (having controlled for the individual level characteristics)A (represents when the variable in column A is significant) B (represents when the variable in column B is significant), n.s. represents when both variables are insignificant. The letters in bold represents the stronger predictor in the model.
*** = p <0.001, ** = p < 0.01, * = p < 0.05, € = p < 0.10

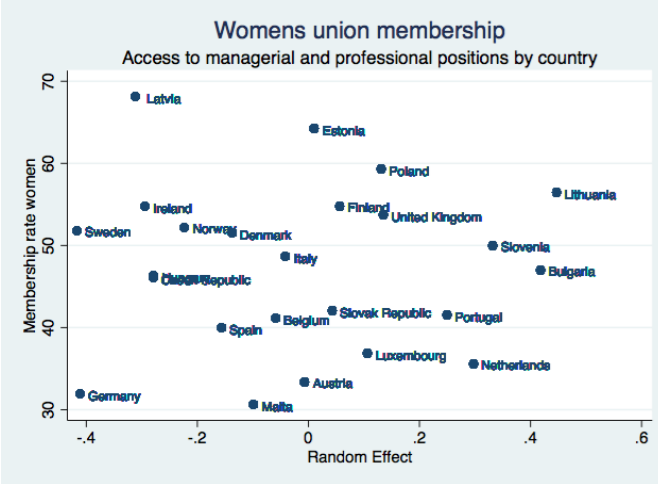
**Figure E.1 Labour market institutions and access to senior professional and/ or managerial positions**

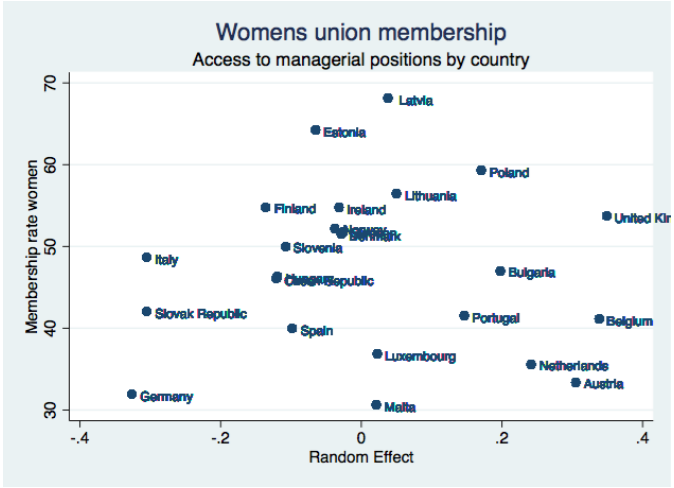


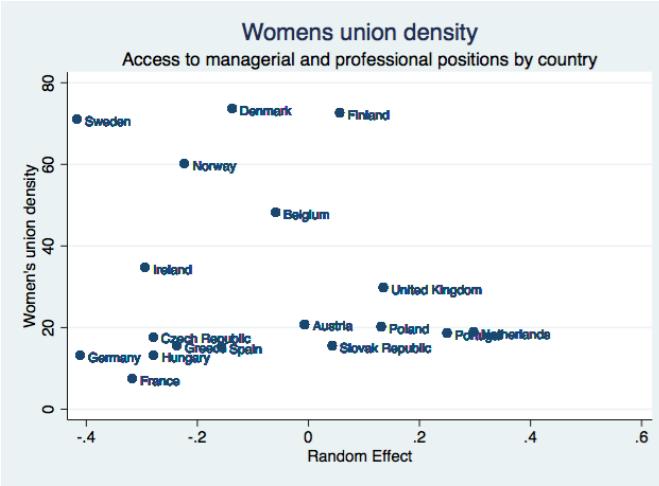



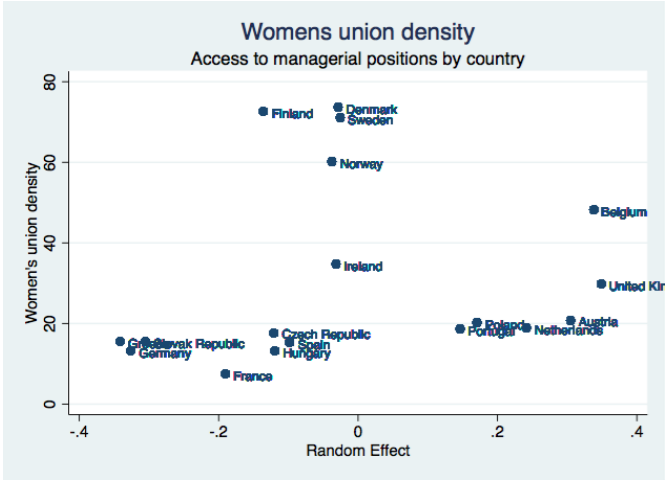




Womens union density
Access to managerial and professional positions by country
Women's union density
Random Effect
Sweden
Denmark
Finland
Norway
Belgium
Ireland
United Kingdom
Austria
Poland
Czech Republic
Spain
Slovak Republic
Germany
Hungary
France


Womens union density
Access to managerial positions by country
Women's union density
Random Effect
Finland
Denmark
Sweden
Norway
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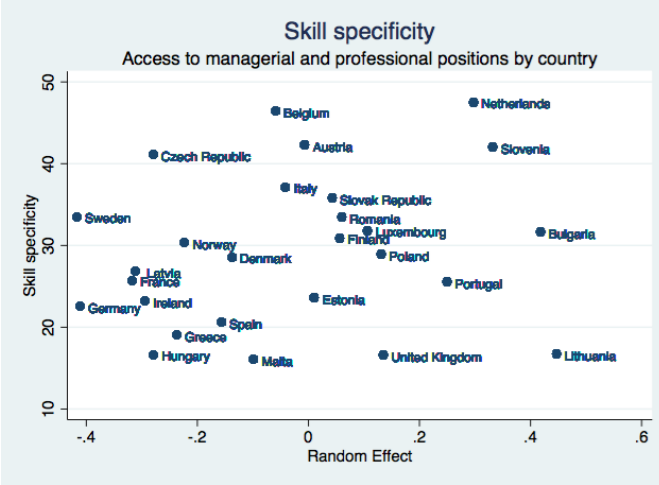
Hungary
France


Skill specificity
Access to managerial and professional positions by country
Skill specificity
Random Effect
Belgium
Netherlands
Austria
Slovenia
Czech Republic
Italy
Slovak Republic
Sweden
Romania
Luxembourg
Finland
Bulgaria
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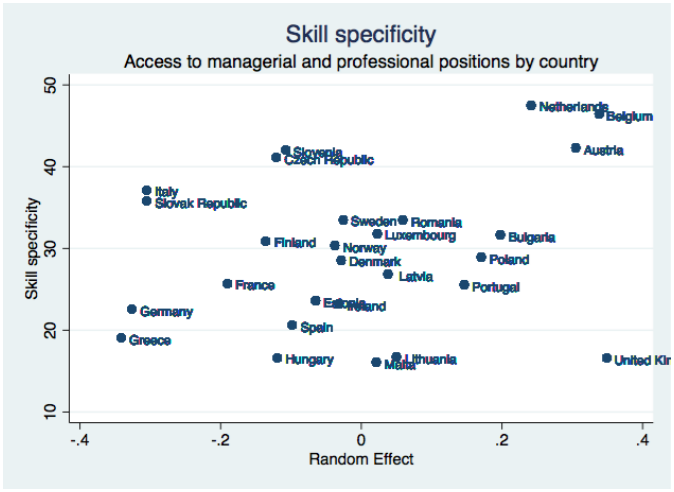
Lithuania


Skill specificity
Access to managerial and professional positions by country
Skill specificity
Random Effect
Netherlands
Belgium
Austria
Slovenia
Czech Republic
Italy
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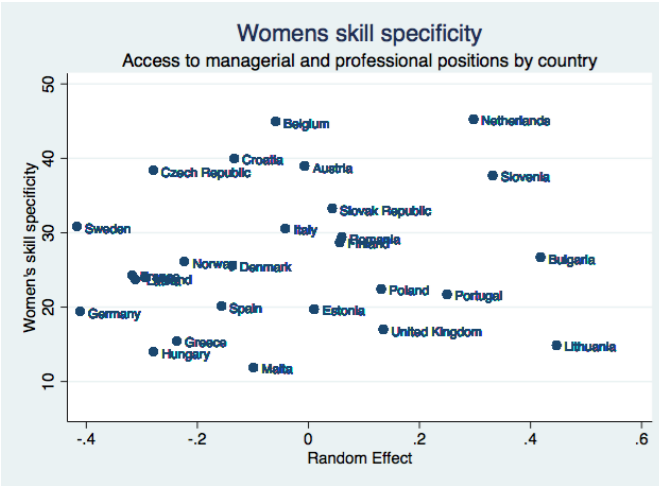
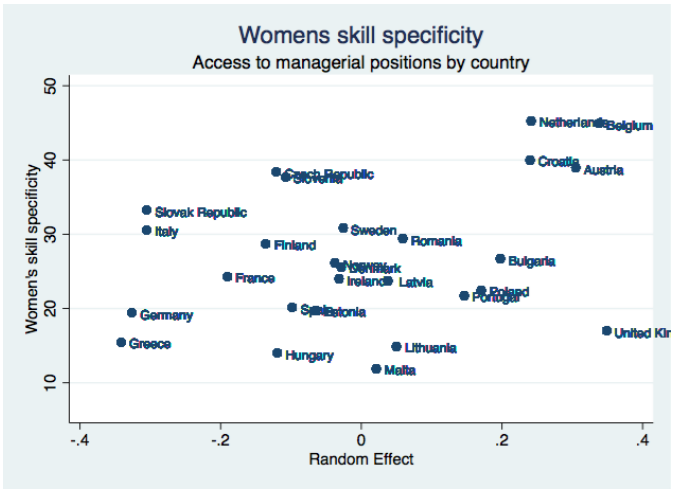

Womens skill specificity
Access to managerial and professional positions by country
Women's skill specificity
Random Effect
Belgium
Netherlands
Croatia
Austria
Czech Republic
Slovenia
Slovak Republic
Sweden
Italy
Bulgaria
Norway
Denmark
Poland
Portugal
Germany
Spain
Estonia
Greece
Hungary
United Kingdom
Lithuania
Malta


Womens skill specificity
Access to managerial positions by country
Women's skill specificity
Random Effect
Netherlands
Belgium
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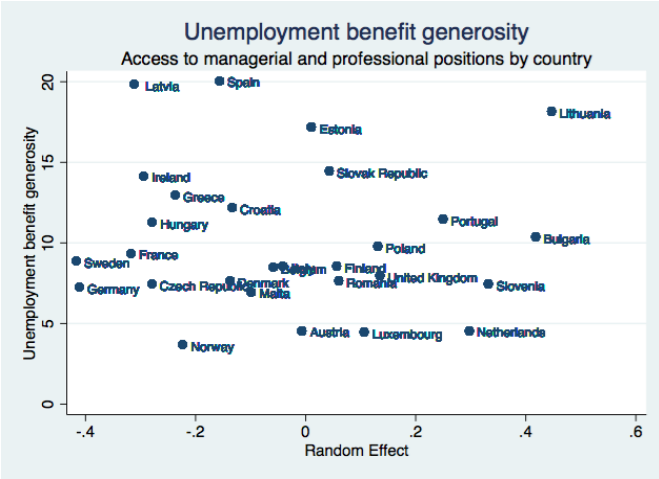
Unemployment benefit generosity
Access to managerial and professional positions by country
Unemployment benefit generosity
Random Effect
Latvia
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Hungary
Portugal
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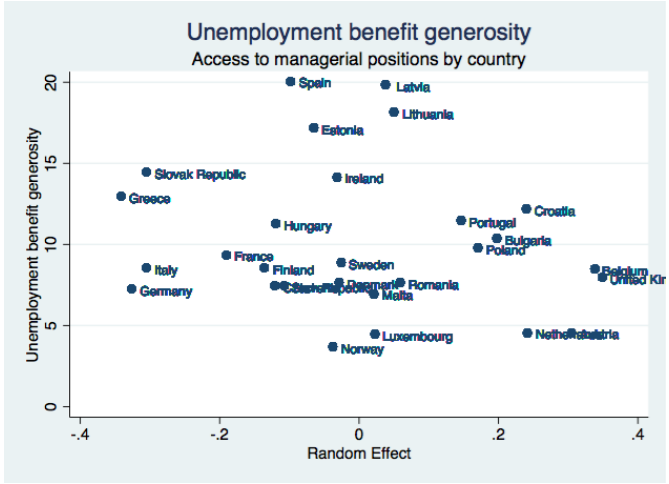
Unemployment benefit generosity
Access to managerial positions by country
Unemployment benefit generosity
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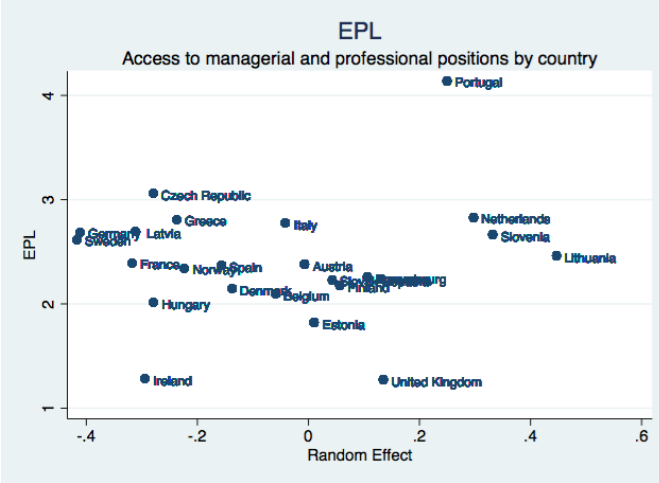
EPL
Access to managerial and professional positions by country
EPL
Random Effect
Portugal
Czech Republic
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Greece
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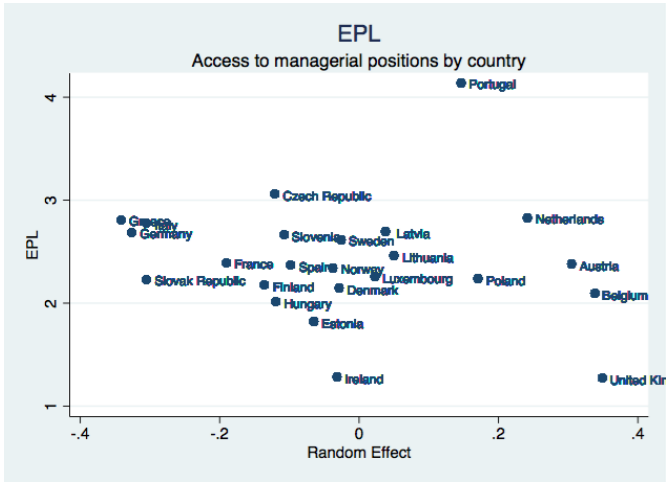
EPL
Access to managerial positions by country
EPL
Random Effect
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Finland
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Belgium
Hungary
Estonia
Ireland

**Table E.3 Statistically significant main effects – Managerial and senior professional occupations**

| A – B | Trade union density rate | Collective bargaining coverage | Women's percentage of trade union members | Union density (women) | Skill profiles | Women's skill profiles | Unemployment Benefits |
|---|---|---|---|---|---|---|---|
| **Collective bargaining coverage** | A(+)**/**B(-)*** | | | | | | |
| **Women's percentage of trade union members** | B(+)* | B(+)$^{€}$ | | | | | |
| **Union density (women)** | A(-)***/**B(+)***** | A(-)**/**B(+)***** | A(+)* | | | | |
| **Skill profiles** | + | A$^{€}$(-) | A(+)* | + | | | |
| **Women's skill profiles** | + | + | A(+)* | A(+)* | + | | |
| **Unemployment Benefits** | + | A (-) * | A(+)* | A(+)$^{€}$ | + | + | |
| **Employment Protection** | + | + | + | A(+)$^{*}$ | + | + | + |

Notes: Entries are results from 28 separate multilevel models, in which contextual variables are introduced in pairs (having controlled for the individual level characteristics)A (represents when the variable in column A is significant) B (represents when the variable in column B is significant), n.s. represents when both variables are insignificant. The letters in bold represents the stronger predictor in the model.

*** = p <0.001, ** = p < 0.01, * = p < 0.05, $^{€}$ = p < 0.10

**Table E.2 Main effects for access to managerial jobs**

| A – B | Trade union density rate | Collective bargaining coverage | Women's percentage of trade union members | Union density (women) | Skill profiles | Women's skill profiles | Unemployment Benefits |
|---|---|---|---|---|---|---|---|
| **Collective bargaining coverage** | + | | | | | | |
| **Women's percentage of trade union members** | + | + | | | | | |
| **Union density (women)** | B (+)€ | B(+)€ | + | | | | |
| **Skill profiles** | + | + | + | + | | | |
| **Women's skill profiles** | + | + | + | + | + | | |
| **Unemployment Benefits** | + | + | + | + | + | + | |
| **Employment Protection** | + | B (-) € | + | + | + | + | B (-) * |

**Notes: Entries are results from 28 separate multilevel models, in which contextual variables are introduced in pairs (having controlled for the individual level characteristics)A (represents when the variable in column A is significant) B (represents when the variable in column B is significant), n.s. represents when both variables are insignificant. The letters in bold represents the stronger predictor in the model.**
***** = p <0.001, ** = p < 0.01, * = p < 0.05, € = p < 0.10**

## Appendix F: Family policies, labour market institutions and the gender gap in top positions – a mediating relationship?

The purpose of this Chapter is to test whether family policies in combination with labour market institutions indirectly affect the gender gap. This is because family policies and labour market institutions are highly interconnected and influence each other. In other words, family policies can be seen as a result of collective bargaining on the one hand, or as institutional complementarities similar to employment and unemployment protection to protect skill investments. However, the previous analytical Chapters have not shown a strong correlation between family policies, labour market institutions and the gender gap, which is why the question remains whether these two factors – family policies and labour market institutions – have a combined effect on the gender gap. This Chapter finds that we need to take into account the interaction between family policies and labour market institutions when designing new family policies. This is because certain family policies only seem to have an effect on the gender gap in the presence of certain, but not all labour market institutions. The gender gap in managerial positions seems to be wider in countries with similar levels of EPL. For senior professional and managerial jobs, part-time childcare increases the gender gap in countries with similar levels of women's union memberships. The gap decreases in these countries with similar levels of women's union membership shares with higher levels of part-time childcare for older children. It also decreases if collective bargaining coverage is similar and levels of childcare enrolment are low. These findings therefore mirror the findings of previous Chapters to some extent as similar family policies show a significant impact on the gender gap. At the same time, this Chapter shows how dependent any significant effect of family policies on the gender gap is on the institutional surroundings.

This Chapter is another contribution, as this thesis – to the author's knowledge – is the first study that examines the combined effect of family policies and labour market institutions on vertical segregation in order to allow for an indirect effect of either variables. And indeed, findings suggest that there is no direct effect of labour market institutions on the gender gap in top positions and thus contradict assumptions that strong representative unions are good for women's careers and informal childcare bad. It even seems that the opposite is true. When unions are weak and no childcare policies are introduced, highly educated women

aiming to pursue a career seem to benefit. This supports the idea of Estevez-Abe (2007) that in less regulated and protective labour markets highly educated women do not need to face motherhood penalties to the same extent as in highly regulated countries since employers do not have to fear additional regulations when hiring women. Maternity leave – not only correlates with EPL, but also increases the gender gap. Therefore, EPL indirectly affects the gender gap and Soskice's (2005) idea that highly educated women benefit from unregulated and unsheltered LMEs seems correct, but this effect only appears when family policies and labour market institutions are introduced to the models together.

The literature underlying this additional Chapter is discussed in the section below. Afterwards, a multilevel analysis is conducted with those labour market institutions and family policies that show significant correlation and are thus expected to be connected.

### F.1 Background and research questions

Only few scholars have examined the impact of these labour market institutions on family policies. A gendered version of the Varieties of Capitalism approach (Hall and Soskice, 2005) for example argues that family policies not only enable the employees to manage work and personal lives, but that employers also provide family friendly policies to retain and recruit workers (Davis and Kalleberg, 2006). Social policies here serve as *politics for markets* (Iversen, 2005). VoC compares national political economies according to their labour market institutions and Comparative Institutional Advantages. These result from interconnected complementarities institutions such as labour relations and corporate governance, labour relations and the national training system, corporate governance and inter-firm relations (Hancké *et al.*, 2007: p.5). It assumes a certain level of complementarities between institutions. In other words, various labour market and welfare state institutions are not developed in isolation but as a package of arrangements to support a certain skill formation and employment strategy. Similarly, based on this logic, we can expect that family policies to

have developed depending on the different employment strategies that are in place in the country, i.e., social policies including family policies serve as a tool for skill formation and protection.

### *F.1.1 Family Policies for the market*

According to the VoC, employers do not consider welfare states and social policy as their opponents (Seeleib-Kaiser and Fleckenstein, 2009) or politics against the market (Esping-Andersen, 1985), but as politics for markets (Iversen, 2005). According to the business case argument, employers provide firm-level social policies if the benefits for the company exceed the costs for these policies (Seeleib-Kaiser and Fleckenstein, 2009). Changes in family policies trace back to the argument of skill formation i.e., that employers provide family friendly policies to retain and recruit workers – which is a central assumption in VoC (Davies and Kalleberg, 2006). Unemployment benefits and employment protection should be seen as complementarities to skill profiles. Davis and Kalleberg (2006) similarly argue that changes in family policies trace back to the argument of skill formation i.e., that employers provide family friendly policies to retain and recruit workers and the specific skill set they have – a central assumption in VoC. They note three reasons why employers may provide family policies: internal and external economic pressure and institutional pressure. Internal pressure relates back to the idea of investment into human capital and training. Employers do not want to lose the investments that have been made into the worker, which is why they face pressure to keep those workers. External economic pressure on the other hand is not about protecting investments, but attracting workers to the firms and keeping current employees. Institutional pressures are defined as law regulations, normative pressures or the pressure not to lag behind other successful companies.

In other words, similar to the logic behind VoC literature in terms of providing EPL and UB for workers for maintaining skill profiles, family policies can be understood as policies that

are developed to maintain high firm/industry specific skills. Unlike UB and EPL, however, it is especially geared towards retaining workers with family responsibilities – i.e., parents and women. Following this logic, we would expect that CMEs and companies relying on firm/sector specific skills are the ones where national and company level family policies are most developed. Surprisingly, Davis and Kalleberg (2006) find that in contrast to our assumption, employers relying on high firm/industry skills do not offer generous family policies, at least in the case of varying company practices within the US (Davis and Kalleberg, 2006). However, other scholars such as Chung (2009, 2014) and Den Dulk *et al.* (2012) show that companies with higher proportions of skilled workers are more likely to provide flexitime.

Fleckenstein and Seeleib-Kaiser (2011) examine family policy provision in companies in LMEs and CMEs to argue that the degree of support differs between them. In Germany for example, employers are the "promoters" for employment-driven family policies (ibid., p. 145) supporting the expansion of childcare for children under three years and the earnings-related parental leave benefit, instead of long-term parental leaves. The reason for this is because employers consider family policies as a necessity in order to bring more women into employment and therefore increase human capital and the country's capacity for innovations. On the other hand, employers in the UK, a typical LME country, have also supported employment-friendly family policies, but to a much lower and less binding degrees. Rather than supporting a public national level family policy, employers in the UK support a more voluntary firm-level approach in terms of parental leave although employers also accept the need for the expansion of affordable childcare. It should also be added here, that Seeleib-Kaiser and Fleckenstein argue that not only employers, but also parties matter in terms of change in social policy. Seeleib-Kaiser and Fleckenstein (2009) also add that the classical skill specificity argument of VoC alone is not sufficient in order to explain changes in family policies. It is not only the specificity of skills that encourages employers to promote employment-friendly (firm-level) policies, but also the level of these skills. Thus, companies relying on high general skills also feel the incentive to offer policies in order to attract and retain qualified workers (Seeleib-Kaiser and Fleckenstein, 2009, p. 758).

### *F.1.2 Family policies against the market*

VoC is a clearly firm- or employer-centred approach in that it assumes that employers play the key role shaping national political economies. Thus, changes in family policies are due to the employers' actions and interests in maintaining a competitive skills strategy. In contrast to that, we find that family policies also seem to be shaped the conflict between capital and labour and the organisation of workers interests, as Morgan (2005) shows. The author finds examples for how trade unions impact family policies. She examines the impact of strong unions and the level of coordination on the provision of childcare for Sweden, France and the U.S. using the example of childcare. She states that, rather than employers, unions and industrial relations play a crucial role in shaping the provision and quality of childcare services. Since family policies have emerged as a result of rising employment rates of women, family policies themselves can be seen as an institution embedded within the political economy as they theoretically aim to change labour market outcomes. More importantly though, they are shaped by other labour market institutions.

Morgan's (2005) findings suggest that in coordinated market economies family policies have emerged to be less market-oriented. In LMEs where unions are weak and not coordinated, wages are more dispersed and the economy is more unregulated. Thus childcare relies mostly on the unskilled low wage staff, and the quality of the service is low. On the other hand, strong unions and consequently high wages and labour market regulations in CMEs exert pressure on the governments to engage in the provision of childcare. In CMEs such as Sweden, there are collectively agreed wage levels, which are more along with a more unified level of working conditions and social protection. Since it is impossible to use staff on a low-cost basis, the strategy is then to provide high-quality service provided by highly qualified staff (Morgan, 2005).

In France, another CME, the government supports a more flexible approach of hiring less-trained and more flexible workforce despite the opinion of the unions, which are neither as strong nor as centralised as in Sweden. One cause of this is because unions are more

fragmented in France and the level of centralization and of coordination is lower (Morgan, 2005) as more actors are involved.

These findings suggest that it family policies are not only a Gendered VoC tool for employers to maintain skill profiles and workers, but are an outcome of the conflict between capital and labour as described by Korpi's (1974) Power Resource Theory. PRT sees employers not as protagonists, but as antagonists and highlights the importance of unions in order to organize workers' interests, in this case the provision of family policies. Even though Korpi (2006) approves the idea of also emphasising employers' role, he criticizes the VoC for three aspects: the overemphasis of VoC on investments in asset-specific skills, the underestimation of power resource distribution between employers and employees and the stiffness of the concept of collective actors in times of more and more fragmented unions even in classical CMEs. Korpi (2006) criticizes that VoC has a narrow understanding of class-related risks and argues that there is an overemphasis on the protection of skills investment. He stresses that protecting the investment in skills is an important driver for both employers and employees, but that insurances such as EPL and unemployment benefits are not only aiming to protect the value of skills but also to protect from other risks associated with aging, illness, work accidents, unemployment, poverty, family formation. In addition to that, he argues that the employers' interests only focus on profitability and not on protecting skills and workers per se. In order to protect workers from being subordinate and therefore powerless against employers' interests, they must organize for collective actions according to PRT. Collective actions are a mean to redistribute power resources since the distribution of economic assets and human capital is unequal between employers and employees. This leads to another critique point, Korpi brings against VoC. He argues that both employers and employees are internally heterogeneous (2006, p.174). VoC though does not take into account the fragmented nature of the workforce and "faces a stiff challenge to empirically identify major collective actors primarily representing workers with specific skills, actors assumed to be central in the emergence of CMEs" (Korpi, 2006, p. 204). In reality though, trade unions face the challenge to represent different levels and types of skills, occupations, and trades.

Thus, according to the PRT the main reason family policies will be developed is based on how much power unions have in putting family policies in the agenda. However, as seen in Morgan's (2005) finding, not only the strength of unions matters, but also who they are actually representing. In France, where unions are highly fragmented, we see a weaker impact on the provision of childcare. Additionally, we need to keep in mind that as discussed previously, CMEs have experienced a dualisation of their workforce and we find that in CMEs such as Germany mainly the male core highly-skilled worker is protected, but the overall workforce. What is more, in these CMEs the outsider group is gendered, in that it is overrepresented by women (Häusermann and Schwander, 2010). If we carry this argument further, we can assume that the incentives in CMEs to improve women's labour market situation by introducing family policies are lower in dualised labour markets such as classical CME if their skill needs can be met by the insider male workforce. Studies on institutional drivers of family policies however have not distinguished countries according to their level of dualisation. However, we can assume that in highly dualised labour market the focus of family policies is to promote the male breadwinner that still forms the core workforce. Consequently, family policies are expected to be more traditional.

The results discussed in Chapter 9 show that overall the association between the listed variables and the gender gap is insignificant. Only when added two variables at a time, we see that unemployment benefit generosity as expected is significantly reduces the gender gap wjen controlling for various individual-level variables and controlling for skill specificity. Thus, we can say that in countries with generous unemployment benefits women are more likely to have a top position than women in countries where this form of social protection is more limited. What is more, EPL as another type of social protection seems to also positively affect women's access to top positions relative to men's. Against the hypothesis, we can therefore say that highly regulated labour markets seem to be more beneficial to highly educated women to reach top positions than labour market with no such protection in place. The protection of skills via regulations seems to help women retain their skills and encourage them to invest in them.

Lastly, skill specificity – which also was suspected to have a negative impact on women's careers – seems to also significantly decrease the gender gap in countries with comparable levels of union density and unemployment benefit generosity. Therefore, all in all there is no supporting evidence for the theory that women are more disadvantaged in coordinated market economy than in liberal market economies and it seems that for highly educated women the opposite is the case.

A second main finding of Chapter 9 is that not only the link between Gendered VoC theories and the gender gap is different than expected, but also assumptions made in favour of conflict theory have not proofed to be fully correct. To summarize, there were two sides of the argument on the association between unions and bargaining power and the gender gap. One argues that strong unions push for more equality in the labour market and therefore reduces the polarization of job hierarchies. Unions here are seen as opponents to employers and capital and as representatives for employees or labour. However, the second side of the conflict theory follows labour market dualisation theories and assumes that unions are only supporting women's interests if they are representative of the overall workforce and do not only represent the interests of the core male workforce. Thus, while collective bargaining coverage indicates the strength of unions, it can be expected that if union density is low and especially the share of women in trade unions is low, but collective bargaining coverage is high, women's interests are not represented and thus the gender gap is expected to be higher.

However, based on Chapter 9 we cannot say that there is a strong association between the gender gap in top positions and unions strength or density. Only in countries with comparable levels of EPL, we find that a high share of women in unions seems to help narrow down the gender gap. All other variables remain insignificant. Thus, there seems to be no evidence for the impact of trade unions on highly educated women's career chances, which may be due to the fact that highly educated individuals are less likely to be represented. Consequently, we need to understand the underlying dynamics between family policies and

labour market institutions first in order to then address the puzzle of cross-national variation in women's labour market activity.

As discussed above, family policies can be seen as a consequence of labour market institutions. On the one hand and according to Power Resource Theory, strong unions crucially shape family policies. However, as seen in Morgan's (2005) finding, not only the unions' strength matters, but also who they are actually representing and how dualised the labour market is. Therefore, the first hypothesis is:

**H4.1** The combined effect of progressive family policies and unions or collective bargaining coverage on vertical segregation is expected to be significant.

However, as argued by Häusermann and Schwander (2010), dualisation is gendered and women are overrepresented among outsiders. Following this logic, incentives in CMEs to improve women's labour market situation by introducing family policies are lower in dualised labour markets such as classical CME if their skill needs can be met by the insider male workforce. Consequently, in CMEs family policies are expected to be more traditional. Therefore, the next hypothesis is:

**H4.2:** In countries with traditional family policies countries with stronger unions have a significantly larger gender gap, especially if these unions do not represent the female workforce.

The assumption here is that traditional family policies are expected to be the result of strong unions representing only the male workforce. Thus, when women are underrepresented in unions, traditional family policies – defined as maternity leaves, taxation and childcare allowances – are expected to be prevalent.

Unemployment benefits and employment protection should be seen as complementarities to skill profiles. Davis and Kalleberg (2006) argue that changes in family policies trace back to the argument of skill formation i.e., that employers provide family friendly policies to retain and recruit workers and the specific skill set they have. Therefore, the **third hypothesis H4.3** assumes that the effect of EPL and specific skill profiles on the gender gap is significant in countries with traditional family policies.

This is based on the idea that in CMEs with a highly specialised workforce and strict EPL, employers want to hire employees with the lowest risk of career interruptions. Thus, women are directly discriminated against. However, EPL and specific skills also indirectly affect the gender gap, as employers are more likely to support the traditional division of genders by also supporting traditional family policies. These traditional policies make women more likely than men to interrupt their career, but help men to stay in the labour market. Therefore, family policies can be seen as an institutional complementarities to EPL and skill specificity and thus mediate their effect on the gender gap. In other words, as theorised before, family policies and labour market institutions are associated and linked, but more regulation does not necessarily cause the gender gap to widen. Highly educated women seem to be encouraged to invest in skills and this seems to pay off. This is a key contribution as previous studies have only looked at one side of the story – either family policies or labour market institutions.

However, according to hypothesis 4.4, this does not have to be the case if the female workforce is also highly specialised and therefore employers have an interest in reducing the time women take off for family responsibilities. H4.4 suggests that if the **female workforce is also highly specialised,** progressive family policies are expected to have emerged as a tool to bind female workers to their workplace and thus mediate the indirect effect a specialised workforce has on vertical segregation. Consequently, family policies can have a combined effect on the relationship between labour market institutions and the gender gap or the other way round. Korpi (2000) describes family policies as an “intervening variable” (Korpi, 2000) that can influence employment patterns.

The following Chapter examines the correlation between family policies and labour market institutions. The idea here is to highlight how interconnected both sets of independent variables are in order to understand underlying dynamics in labour markets that multilevel modelling cannot capture. First of all, simple correlations between all labour market institution variables and the significant family policy variables are executed. In a second step, multilevel models are carried out only adding two correlated context level variables at a time that at the same time are not at risk of multicollinearity. While the first step aims to understand the interconnectivity between family policies and labour market institutions, the second step then links these institutional complementarities with the main research question and investigates how labour market institutions along with family policies impact the gender gap in managerial and professional occupations.

## F.2 Descriptive statistics

First of all, all labour market institution variables and family policy variables are examined regarding their degree of correlation. For this, a correlation matrix showing Pearson R correlation coefficients has been run. Table F.1 lists the results of the Pearson correlation matrix. Even though all correlated variables are of potential interest, this Chapter focuses only on the combinations linked to the hypotheses. These combinations are full-time childcare coverage, expenditure on childcare and parental leave on the one side and union density and collective bargaining coverage on the other hand. Secondly, this Chapter examines the combined effect of maternity leave, taxation and childcare allowances on the one hand and women's union density on the other. EPL and skill specificity and are expected to have a combined effect with maternity leave, taxation and childcare allowances. A highly specialised female workforce and full-time childcare coverage, expenditure on childcare and parental leave are expected to have a combined effect on the gender gap.

**Table F.1 Pearson correlation between labour market institutions and family policies**

| A / B | Maternity Leave (length) | Effec. maternity leave | Paternity leave duration | Effec. paternity leave | Net Parental leave | Effec. parental leave | Well-paid leave |
|---|---|---|---|---|---|---|---|
| **Employment Protection** | -0.45 | 0.24 | 0.12 | 0.21 | 0.05 | 0.16 | 0.12 |
| **Trade Union Density** | -0.29 | -0.50 | 0.02 | 0.01 | -0.49 | -0.24 | -0.17 |
| **Collective bargaining coverage** | -0.49 | -0.31 | 0.14 | 0.14 | -0.28 | -0.19 | -0.30 |
| **Skill profiles** | -0.19 | 0.00 | 0.15 | -0.07 | -0.36 | -0.24 | -0.20 |
| **Women's percentage of trade union members** | 0.20 | 0.20 | 0.21 | 0.22 | 0.17 | 0.01 | 0.28 |
| **Union density (women)** | -0.24 | -0.59 | 0.44 | 0.25 | -0.40 | -0.11 | 0.10 |
| **Women's skill profiles** | -0.16 | -0.03 | 0.15 | -0.03 | -0.38 | -0.25 | -0.24 |
| **Unemployment Benefits** | 0.15 | 0.18 | 0.03 | 0.37 | 0.24 | 0.07 | 0.21 |

**Table F.1 (continued) Pearson correlation between labour market institutions and family policies**

| A / B | Childcare usage under 3 | Full-time childcare usage under 3 | Allowance for 1 Child | Allowance for 3 Children | Family Taxation Subsidy | Full-time childcare over 3 years | part-time childcare over 3 years | no formal childcare over 3 years | Expenditure childcare |
|---|---|---|---|---|---|---|---|---|---|
| **Employment Protection** | -0.02 | 0.21 | -0.22 | -0.16 | 0.12 | 0.20 | -0.30 | 0.18 | -0.21 |
| **Trade Union Density** | 0.40 | 0.36 | 0.21 | 0.11 | -0.39 | 0.21 | -0.01 | -0.26 | 0.44 |
| **Collective bargaining coverage** | 0.53 | 0.41 | -0.19 | 0.17 | 0.19 | 0.07 | 0.36 | -0.62 | 0.38 |
| **Skill profiles** | 0.16 | 0.05 | 0.02 | 0.32 | 0.21 | 0.18 | 0.00 | -0.24 | -0.07 |
| **Women's percentage of trade union members** | -0.01 | 0.15 | -0.19 | -0.23 | -0.40 | 0.21 | -0.43 | 0.35 | 0.23 |
| **Union density (women)** | 0.49 | 0.51 | 0.30 | 0.16 | -0.55 | 0.47 | -0.28 | -0.20 | 0.52 |
| **Women's skill profiles** | 0.22 | 0.05 | 0.01 | 0.32 | 0.22 | 0.10 | 0.07 | -0.22 | -0.01 |
| **Unemployment Benefits** | -0.21 | -0.04 | -0.21 | -0.26 | -0.05 | 0.18 | -0.31 | 0.20 | -0.30 |

**Table F.2 Significant cross-level interaction terms – effect on the gender gap**

| | Managerial Occupations | Professional and managerial occupations | |
|---|---|---|---|
| **A** / **B** | **EPL** | **Collective bargaining coverage** | **Women's share in unions (membership)** |
| **Effective maternity leave** | B(-)€ | | |
| **Family taxation** | | | B(+)* |
| **Part-time childcare for older children** | | | B(-)€ |
| **No childcare usage for older children** | | B(+)* | B(+)* |

Notes: Entries are the only statistically significant results from 80 separate multilevel random slope cross-level interaction models (40 with managerial and professional occupations as DV, 40 with managerial occupations as DV), in which contextual variables are introduced in pairs (having controlled for individual level characteristics). A represents when the variable in column A is significant; B when the variable in column B is significant. Only statistically significant interaction terms*female are listed.

***= p<.001, **= p<.01, *= p<.05, €=p<.10

### *F.2.1 Family policies and unions*

According to table F.1, the highest correlations (R>.50) are between institutions capturing unions and family policies. There are three key observations here:

1. Trade **union density** (and women's union density) and effective maternity **leave** are highly negatively correlated and positively correlated with childcare usage under 3 and no formal childcare for over 3 year olds.

2. A **highly unionised female workforce** seems to be highly correlated with full-time childcare under 3 year olds and expenditure on childcare, but negatively correlated with high rates of part-time childcare for older children and family taxation.

3. A highly unionised female workforce is negatively correlated with net parental leave; but positively correlated with the de-familization score and paternity leave duration.

What does this mean with regards to the assumptions made in Chapter 6? The first point directly reflects Morgan's (2005) findings that in countries with strong unions, childcare is provided and used to a greater extent than in countries with weak unions. Additionally, her findings also show that in countries with high union density, family policies tend to be more progressive and thus the negative correlation with rather traditional family policies such as long maternity leaves and family taxation are not surprising. Kopi (1974) also argues that strong unions and collective bargaining result in stronger family policies. This corresponds with the finding that collective bargaining coverage is positively correlated with the de-familization score, full-time childcare for under 3 year olds (in contrast to general usage), part-time childcare over 3 year olds (in contrast to no formal childcare) and expenditure; but negatively correlated with maternity leave policies and well-paid leave. In terms of operationalisation, this means that the general theoretical assumption is true that strong unions and collective bargaining coverage are correlated with progressive family policies.

Another theoretical assumption based on the literature on labour market dualisation (see section 3.1 and 4.2) and mainly on the idea that first of all labour markets are divided between outsiders and insiders and secondly that this dualisation is gendered (Häusermann and Schwander, 2010). Thus, following the findings of Morgan (2005) and Korpi (1974) that strong unions aim to push for policies supporting the workforce they represent, we could therefore assume that if unions only represent a small share of the workforce, they will only represent their members' interests (see Dieckhoff *et al.*, 2015). Thus, if women's union density is low, then we can expect traditional family policies that aim to support the insider male workforce and the status of the male breadwinner.

### *F.2.2 Family policies and EPL/ skill specificity*

According to table F.1 EPL is negatively correlated with the familisation score and thus traditional family policies, length of net maternity leave and part-time childcare for over 3 year olds; but positively correlated with effective weeks of maternity leave. In other words, we find generous maternity leave (in terms of both pay and duration) in regulated labour markets, but not long and ineffective maternity leave or part-time childcare. Comparable to this, in countries with generous unemployment benefits effective paternity is high, but part-time childcare and spending on childcare is low.

What is more, we also see that in countries with a highly specialised (female) workforce net parental leave is shorter, but allowances for children are high.

These findings generally reflect the idea that family policies do not necessarily go against employers' interests but can be utilised in order to retain and attract skilled workers. According to Davis and Kalleberg (2006) we expect family policies such as earnings-related parental leave to be correlated with skill specificity and also with strict EPL. Generous, but not necessarily long leaves can create an incentive for workers to invest into their skills –

particularly women if they know that well-paid leave is guaranteed. Fleckenstein and Seeleib-Kaiser (2011) also see that effective parental leave can be used to retain and recruit skilled workers.

### *F.2.3 The combined effect of family policies and labour market institutions on the gender gap*

Based on these combinations, which have been selected due to significant correlation, we now need to examine whether labour market institutions along with family policies affect the gender gap in top positions. In other words, is there a combined effect of family policies and labour market institutions on the gender gap? In order to answer this research question, multilevel models are once again conducted, this time adding correlated pairing at the same time. 40 multilevel random slope models with cross-level interaction terms are run for each dependent variable, in which two contextual variables with the interaction term (one each for family policies and labour market institutions) are added. Because we are only interested at this point in the combined effect, only statistically significant cross-level interaction terms are discussed and listed in table F.2 (for significant main effects on the overall population without interaction term see Appendix; for results of all 80 models see end of this chapter, tables F.3 and F.4).

The results are easy to grasp with only 5 pairings showing a statistically significant impact on either of our two dependent variables. Most interestingly, the only statistically significant impacts are due to family policies, but not labour market institutions. This suggests that indeed family policies and labour market institutions are interconnected, but that labour market institutions only indirectly via family policies affect the gender gap. It seems as if when adding family policies to the models, labour market institutions become insignificant. Thus, we need to be careful when interpreting the findings of Chapter 7. Here, the conclusion was that in countries with high EPL, unemployment benefits and skill specificity – traditionally

defined as CMEs – the gender gap is smaller. However, when family policies are included this effect disappears.

However, we see that in countries with comparable levels of EPL generous effective maternity leave – which is positively correlated with EPL (see table F.1) – increases the gender gap for managerial positions. This is a typical combination we would expect in a continental CME – traditional family policies and strict EPL. Therefore, Estevez-Abe (2007) seems to partially have a point when she argues that women are indeed discriminated against in highly regulated labour markets. However, this is only the case if maternity leave and EPL both are high, but it is not a direct effect EPL per se but more linked to the longer maternity leave. This contradicts the assumptions of Hegewisch and Gornick( 2011) that leaves can be used to build up tenure and continuity with one employer and thus strengthen their position in the labour market. It rather supports other scholars' (Correll, Benard, and Paik 2007; Petersen and Saporta 2004; Spence 1973; Gangl and Ziefle, 2009) findings that investments into female employees are too risky. Thus, leaves in highly protected labour markets ultimately hinder women from reaching the top as the combination of long maternity leaves and EPL and thus the inability to hire and fire quickly increases motherhood penalty.

What is more, even when labour market institutions are included in the model, some of the findings from Chapter 5 remain significant with family taxation being significantly positive for women's access to top positions relative to men's in countries with similar levels of female members in unions. This is interesting as we find a negative correlation between a large unionised female workforce and family taxation. The assumption was that family taxation provides an incentive to protect the male breadwinner model. However, what we find here is that whilst in countries with a large unionised workforce family taxation seems unpopular, it does help highly educated women to reach top positions. This finding suggests that whilst in countries with unionised women interests of the female workforce are protected and represented. However, there does not seem to be a direct benefit of this for highly educated women.

In countries with comparable shares of women in trade unions, we also find the same negative effect of part-time childcare for older children on the gender gap. This is not very surprising as we know that part-time childcare does not allow for full-time employment. However, from Chapter 5 we know that working part-time lowers women's chances to reach top positions. Additionally, we find that provision of part-time childcare only is unpopular in unionised countries, especially in those with a large unionised female workforce due to the mentioned reasons that unions try to implement policies that help their members.

Again, we also see that in countries with high rates of children not enrolled in any form of formal childcare the gender gap is comparably smaller, if we compare countries with similar levels of collective bargaining coverage and women's union memberships.

## F.3 Discussion

When investigating the potentially mediating effect of family policies on the relationship between labour market institutions and the gender gap in managerial positions, this thesis aim to answer four research hypotheses. The theoretical foundation for these four hypotheses is discussed in Chapter 2.

### *F.3.1 The combination of Progressive family policies and union density/ collective bargaining coverage on the gender gap*

The first hypothesis is based on the assumption that we expect family policies to be the result of union strength and collective bargaining power. Thus, progressive family policies – defined as full-time childcare coverage, expenditure on childcare and parental leave – are expected to correlate with strong and representative unions. Therefore, the unions and

collective bargaining coverage are expected to have a combined effect with progressive family policies on vertical segregation as these have a direct effect on the gender gap. Regarding the first part of the hypothesis – the correlation between union density, collective bargaining coverage and progressive family policies, we can say the following: A large unionised female workforce is positively correlated with de-famfamiliarised countries in general, and particularly with expenditure on childcare and early education, full-time childcare usage for under 3 year olds and older children and even paternity leave that help to get men more involved in family responsibilities. Thus, we can say that unions representing a large share of women seem to go hand in hand with progressive family policies. Strong unions – as measured in collective bargaining coverage – also are correlated with de-famfamiliarised countries, full-time childcare and expenditure on childcare. In order to answer the second part of the hypothesis – whether there is a mediating effect between progressive family policies and strong and representative unions on the gender gap – we can say that there does not seem to be a significant impact. Based on table F.2, progressive family policies as defined earlier in this thesis have no statistically significant impact on the gender gap in top positions. What is more, in the multilevel random slope models in which we paired progressive family policies with either women's union density, or membership or collective bargaining coverage there was no significant combination effect to be found. Consequently, hypothesis H4.1 cannot be supported.

### *F.3.2 The combined effect of strong unions representing only the male workforce and traditional family policies on the gender gap*

Hypothesis 4.2 is similar to H4.1, but examines the mediating effect of traditional family policies on the relationship between unions and the gender gap. The assumption here is that traditional family policies are expected to be the result of strong unions representing only the male workforce. Thus, when women are underrepresented in unions, traditional family policies – defined as maternity leaves, taxation and childcare allowances – are expected to be prevalent. First of all, based on table F.1 we can say that indeed women's

union density is highly negatively correlated with generous maternity leave, family taxation subsidies and parental leave. Union density overall also seems to be negatively correlated with maternity and parental leave and taxation subsidies, but positively with (full-time) childcare coverage and expenditure. What is more, collective bargaining coverage is negatively correlated with informal childcare, well-paid leave and maternity leave. While it is also correlated with childcare usage for under 3 year olds, it at the same time is positively correlated with full-time childcare usage. Thus, we can say that indeed a large unionised female workforce is negatively associated with traditional family policies. In other words, if women are not unionised and generally union density is low, family policies are traditional in that they protect the traditional division of labour by introducing leaves and monetary incentives no to return quickly to work after childbirth. However, while according to Chapter 6, a unionised female workforce and/ or strong unions do not result in a lower gender gap, table 2 delivers some interesting results. If we compare countries with similar collective bargaining coverage we find that informal childcare has a positive impact on the gender gap by increasing women's relative access to managerial and professional positions. In other words, in countries with strong centralised unions, having more access to informal childcare increases women's likelihood to reach to positions. Thus, it seems that collective bargaining coverage correlates with informal childcare. We also know from table F.1 that collective bargaining coverage is highly negatively correlated with informal childcare. Thus, while strong unions per se do not seem to have any impact on the gender gap, weak unions in their inability to push for more childcare seem to indirectly help highly educated women to reach top positions.

It seems that Soskice's (2005) is correct in that bargaining power is not necessarily beneficial to women. Soskice assumes this is because the lack of wage bargaining leads to more inequalities and therefore benefits highly educated individuals in the higher class. Productive and qualified individuals are highly rewarded, while workers with lower levels of education are left unprotected. "If you're a highly educated woman, you want to work in an LME; if you're a working class man, you want to work in a CME", summarizes Soskice (2005,

p. 175) his argument. According to the models, bargaining coverage does not seem to directly affect the gender gap. But because the lack of bargaining power also seems to hinder family policies from emerging. While this is problematic for women with lower levels of education as it hinders them from entering the labour market, it at the same time also prevents a motherhood penalty from emerging. Liberal or market economies that are characterized by weak unions but also gender-neutrality due to their lack of family policies (Estevez-Abe, 2005; McCall and Orloff, 2005; Orloff, 2006), therefore seem to help highly educated women "who are willing to pursue a masculinized employment pattern" (Orloff, 2009, p. 328) and thus reduce the gender gap for top positions.

The effect of informal childcare on the gender gap also remains when adding women's share among union members to the model. Here, we also still see the significant impact of informal childcare on the gender gap. While we can see informal childcare as in indicator for lack of either progressive or traditional policies, we can however see that part-time childcare remains increasing the gender gap as discussed in Chapter 5.

When comparing countries with similar levels of female trade union members, we find the effect of part-time childcare to remain significantly negative. According to table F.1, both variables are negatively correlated. Thus, we can conclude that if unions are largely male-dominated the level of part-time childcare is high and therefore women – who still undertake the majority of family responsibilities – are more likely to be working part-time and the traditional division of labour remains. Consequently, the gender gap in top positions is higher. Therefore, it is not women's share in unions per se that affects the gender gap, but the effect is mediated by part-time childcare that is more likely to be the norm in countries with male-dominated unions. This is a clear indicator for the assumption made in section 2.4.2 that in dualised CMEs the need to introduce progressive family policies is limited and thus traditional policies are more prevalent if only the core male workforce is represented by unions. And indeed, we can see now that in those countries where women are underrepresented in

unions, traditional family policies such as part-time childcare are introduced which in the end leads to a higher gender gap.

### *F.3.3 The effect of traditional family policies and EPL/ skill specificity on the gender gap*

The **third hypothesis** assumed that in CMEs with a highly specialised workforce and strict EPL, employers want to hire employees with the lowest risk of career interruptions. These are most likely to be male workers. Because traditional family policies aim to reinforce the traditional division of genders and therefore make women more likely than men to interrupt their career, traditional family policies can be seen as an institutional complementarities to EPL and skill specificity and thus mediate their effect on the gender gap. Based on table 1, we can see that EPL indeed positively correlates with effective maternity leave. What is more, when adding EPL and effective maternity leave to the same model, we find that maternity leave significantly increases the gender gap in managerial positions, even though on its own it has no effect (see Chapter 5). This indicates that in countries with comparable level of EPL the negative effect of maternity leave becomes stronger. This again links well with the previous argument that strong social protection, which both maternity leave and EPL represent, might help women with lower levels of education to enter the labour market, but creates a motherhood penalty in that it creates gender inequalities. This is because while in countries with low EPL and short maternity leaves employers have little reason to discriminate between male and female workers as career interruptions can be expected to be short, in highly protected countries women are seen as a risk to employers. Consequently, we can say that indeed EPL does not have a direct impact on the gender gap, but because it is highly correlated with maternity leave, it does affect women's chances to reach the top negatively and supports arguments made by Estevez-Abe (2005), McCall and Orloff (2005), Soskice (2005), Orloff (2006) and others. Consequently, hypothesis three can be partly verified. However, we cannot see any significant impact skill specificity on the gender gap when adding family policies to the same model. Skill specificity is negatively correlated with net parental leave and positively correlated with childcare allowances (table

1). What is more, skill specificity was one of the few variables according to Chapter 6 with any significant impact on the gender gap. However, now it seems as if net parental leave and childcare allowances act as confounding variables as no significant association between our dependent variables and skill profiles can be found anymore. While these findings are not of great interest, they however warn against the conclusions made in Chapter 6 that highly educated women benefit from a focus on specific skills as this effect only seems to exist in countries with similar levels of women's union density. Thus, skill specificity – neither indirectly nor directly – seems to help or hinder women to reach top positions.

### *F.3.4 The effect of progressive family policies and women's skill specificity on the gender gap*

But what happens if not the overall workforce, but particularly the female workforce is highly specialised? Hypothesis 4 summarised this question and argues that if the **female workforce is also highly specialised** progressive family policies are expected to have emerged as a tool to bind female workers to their workplace and thus mediate the indirect effect a specialised workforce has on vertical segregation. In countries with a highly specialised female workforce, we find net parental leave to be relatively short (see table F.1). Childcare allowances on the other hand are high. While in Chapter 6 we found that a specialised female workforce in countries with similar levels of women's union density and employment protection seems to contribute to a more narrow gender gap in managerial positions, we do not find any significant impact in the models conducted for this Chapter. Either net parental leave and childcare allowances again are confounding variables or alternatively, EPL and women's union density are moderating the effect. Nevertheless, we can say that there is no clear evidence supporting hypothesis 4 that a highly specialised female workforce correlates with progressive family policies and/or therefore help decrease the gender gap.

### F.4 Summary and conclusion

The overall research question of this Chapter is: How do labour market institutions along with family policies affect the gender gap in top positions? Findings are limited and only few results significant. However, we can say that certain family policies and labour market institutions seem to have a combined effect on the gender gap. We mainly see that following the assumptions made by Estevez-Abe *et al.* (2001) and Soskice (2005) and others, labour market institutions such as unions and collective bargaining coverage can contribute to a discrimination of highly educated women by introducing family policies and therefore increasing the motherhood penalty. Even though collective bargaining coverage – thus strong unions – and women's union membership rates – thus representative unions – have no impact on the gender gap, they are highly negatively correlated with informal childcare which has shown to decrease the gender gap. Therefore, against the first theoretical assumptions that strong representative unions are good for women's careers and informal childcare bad, it seems that the opposite is true. When unions are weak and no childcare policies are introduced, highly educated women aiming to pursue a career seem to benefit. This supports the idea of Estevez-Abe (2007) that more labour market regulations – in this case family policies and unions potentially imposing regulations – women face more discrimination as employers prefer hiring men over women that do not impose the same risk. Thus, in countries where highly educated women arrange flexible childcare and cannot rely on unions, this seems to affect their career less as employers do not need to fear additional barriers when hiring women. However, it needs to be highlighted here that we are only looking at highly educated women aiming for top positions. Thus, the conclusion should not be that unions and childcare policies create a gender gap. What seems to happen is that in countries with little regulations women's status is not different to men's, which supports the idea of "if you're a highly educated women, you want to work in an LME; if you're a working-class man, you want to work in a CME" (Soskice 2005, 175).

We can see proof for this assumption that motherhood in highly regulated labour markets can lead to discrimination. Maternity leave – not only correlates with EPL, but also increases the gender gap. Therefore, EPL indirectly affects the gender gap and Soskice's (2005) idea that highly educated women benefit from unregulated and unsheltered LMEs seems correct.

To conclude, this Chapter has shown us the importance of combining both approaches – family policies and labour market institutions – when trying to understand why the extent to which highly educated women are underrepresented in top positions varies so much across countries. Labour market institutions do not directly affect the gender gap, but are highly interconnected with family policies. The Chapter also claims that for future research we need to always distinguish between different education levels in order to truly understand how policies and institutions affect women. While certain policies clearly shelter and protect women and therefore help them to enter the labour market, they also create a motherhood penalty, which leads to the discrimination of highly educated women aiming to reach top positions. Therefore, this Chapter warns against the idea that family policies are widening the gender gap in top positions. However, it does argue that we need different and more flexible policies to ensure gender equality for individuals from all educational backgrounds.

**Table F.3 Statistically significant main effects – Managerial occupations**

| A / B | EPL | Unemploy-ment benefits | Union density | Women's union density | Collective bargaining coverage | Women's share in unions |
|---|---|---|---|---|---|---|
| **Maternity leave (duration)** | A (-)* | | | | | |
| **Effective maternity leave** | B (-)€ | | | | | |
| **Childcare usage for young children** | | | B (+)€ | | B(+)* | |
| **No childcare usage for older children** | | | | | B(-)* | B(-)* |
| **Expenditure on childcare and early education** | | **B (+)*** | | **B(+)*** | **A(-)*/ B(+)***** | |

Notes: Entries are the only statistically significant results for the main effect from 40 separate multilevel random slope cross-level interaction models with managerial occupations as DV, in which contextual variables are introduced in pairs (having controlled for individual level characteristics). A represents when the variable in column A is significant; B when the variable in column B is significant. Only statistically significant main effects are listed. ***= p<.001, **= p<.01, *= p<.05, €=p<.10

**Table F.4 Statistically significant main effects – Managerial and senior professional occupations**

| A / B | EPL | Unemployment benefits | Union density | Collective bargaining coverage | Women's share in unions |
|---|---|---|---|---|---|
| **Maternity leave (duration)** | | | A(+)€ | | |
| **Effective maternity leave** | | | A(+)€ | A(-)€ | |
| **Paternity leave (duration)** | | | A(+)€ | | |
| **Parental leave (duration)** | | | A(+)€ | | |
| **Childcare usage for young children** | | | | **A(-)**** / B(+)* | |
| **Full-time childcare for young children** | | | | **A(-)*** /B(+)€ | |
| **Family Taxation** | | | B(-)* | | B(-)* |
| **Part-time childcare for older children** | B(-)€ | | | | A(+)€ |
| **No childcare usage for older children** | | | | | A(+)€ |
| **Expenditure on childcare and early education** | | B(+)€ | | **A(-) ***** **/**B(+)*** | |

Notes: Entries are the only statistically significant results for the main effect from 40 separate multilevel random slope cross-level interaction models with managerial occupations as DV, in which contextual variables are introduced in pairs (having controlled for individual level characteristics). A represents when the variable in column A is significant; B when the variable in column B is significant. Only statistically significant main effects are listed.
***= p<.001, **= p<.01, *= p<.05, €=p<.10