WORKING WOMEN IN EUROPE

Abendroth, Anja-Kristin

Working Women in Europe. How the Country, Workplace, and Family Context Matter.

Dissertation, Utrecht University, The Netherlands.

Printed by: Wöhrmann Print Service

Layout: Jeroen Jager

ISBN 978-90-393-5883-2

Working Women in Europe

How the Country, Workplace, and Family Context Matter

Werkende vrouwen in Europa

Hoe de land-, werk en gezinscontext ertoe doen

(met een samenvatting in het Nederlands)

Proefschrift

ter verkrijging van de graad van doctor
aan de Universiteit Utrecht
op gezag van de rector magnificus,
prof.dr. G.J. van der Zwaan,
ingevolge het besluit van het college voor promoties
in het openbaar te verdedigen op
vrijdag 25 januari 2013 des middags te 2.30 uur

door

Anja-Kristin Abendroth

geboren op *21 maart 1982,* te *Wuppertal, Duitsland*

Promotoren: **Prof. dr. A.G. van der Lippe**
Prof. dr. W.A.F. Maas

Dit proefschrift werd (mede) mogelijk gemaakt met financiële steun van de European Science Foundation EUROCORES Programme HumVIB (grant number 460-08-163).

Manuscript committee:

Prof. dr. M. Diewald (Bielefeld University)

Prof. dr. J.J.C.M. Hox (Utrecht University)

Prof. dr. J. Plantenga (Utrecht University)

Prof. dr. H.G. van de Werfhorst (University of Amsterdam)

Contents

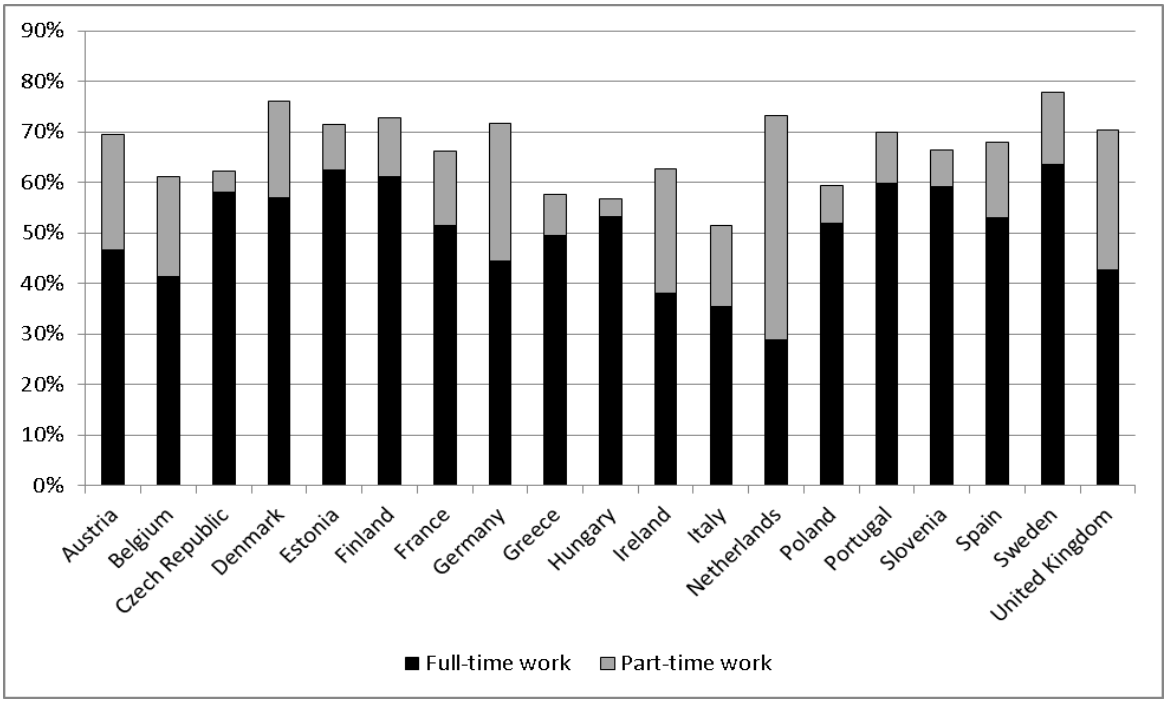
Chapter I: Introduction

1. Background

This dissertation aims to provide a better understanding of the labor market involvement and career outcomes of working women in Europe. Even though women's labor market participation has increased in recent decades and women's educational level has surpassed men's in several countries, women still spend fewer hours on paid work than men (e.g. Bardasi and Gornick 2000; OECD Statistics 2012; Van der Lippe and Van Dijk 2002), are less likely to move into authority positions (e.g. Mandel and Semyonov 2006; Yaish and Stier 2009), and earn less than men on the labor market (e.g. Jarrell and Stanley 2004; Mandel and Shalev 2009). This is true for all European countries, although there are considerable differences between them (see Figure 1 - 3).

With respect to *labor market involvement*, the labor market participation rate of women is relatively high in Sweden and relatively low in Italy, as can be seen in Figure 1. Men's labor market participation rate varies less between countries, ranging from 69% in Hungary to 84% in the Netherlands (not shown). Figure 1 also indicates that many women who are employed work part time, especially in the Netherlands. Relatively low part-time employment rates can be found in post-communist countries such as the Czech Republic and Hungary. In contrast, men most often work full time. Men's part-time employment only varies between 2% in the Czech Republic and 17% in the Netherlands (not shown).

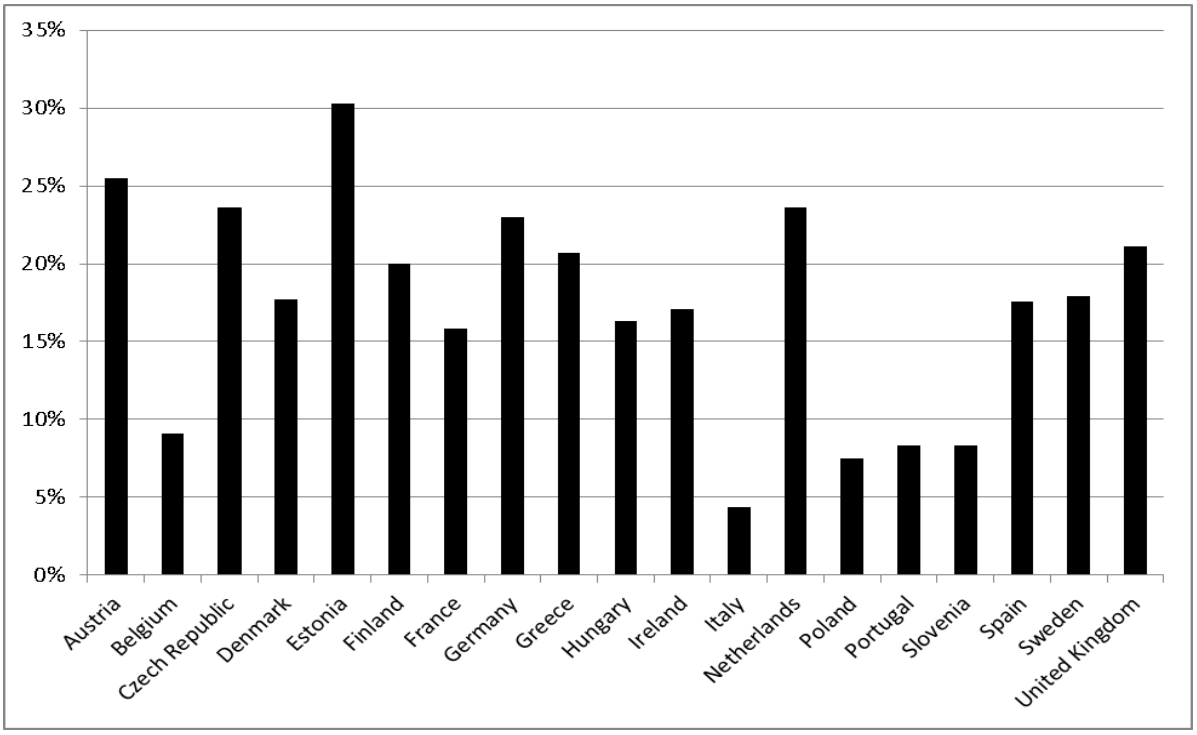
Figure 1: Women's labor market participation rate and part-time work in 2011



Source: OECD Statistics 2012; Note: Part-time work <= 30 hours; Full-time work > 30 hours

With respect to *career outcomes*, Figure 2 presents the differences between men and women in average earnings and Figure 3 the percentage of authority positions held by women. In all countries, women earn less than men on average and are less likely to hold an authority position. In research and public debate, the former is referred to as the gender pay gap and the latter as the gender authority gap. Figure 2 further shows that the largest difference between men's and women's pay can be found in Estonia, where working women earn 30% less than working men. The smallest difference can be found in Italy, with a gender pay gap of only 4%.

Figure 2: Gender pay gap in 2007

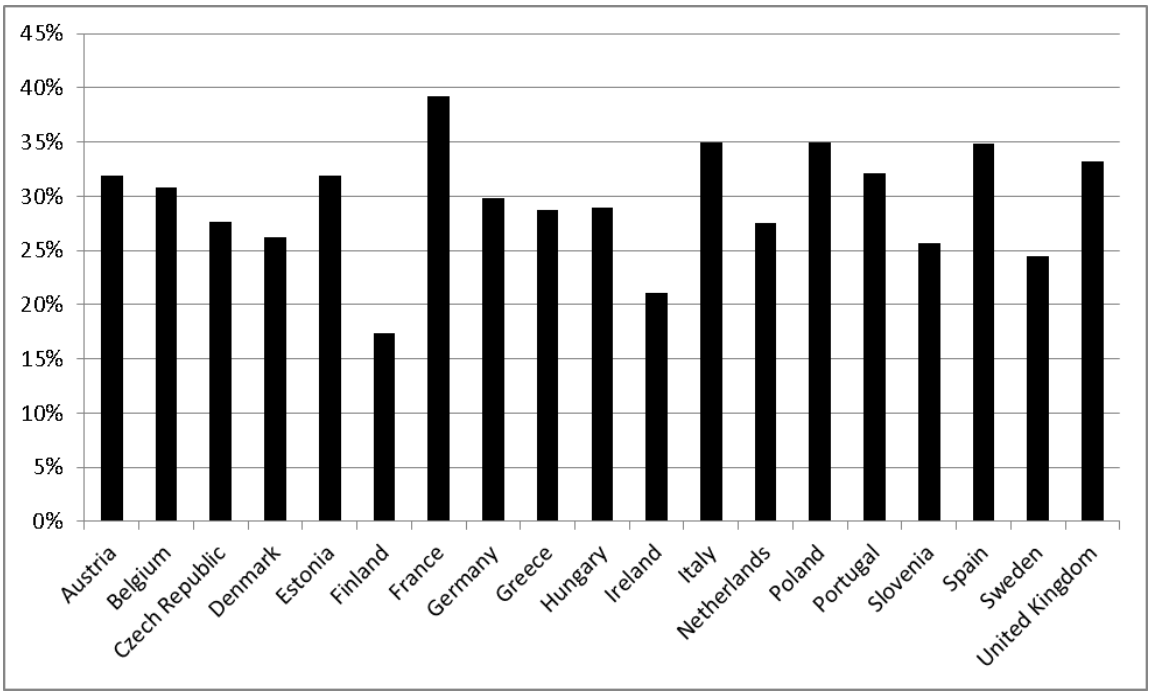


Source: European Commission 2008; Note: The *gender pay gap* is the difference between the average gross hourly earnings of male paid employees and female paid employees as a percentage of the average gross hourly earnings of male paid employees.

Figure 3 reveals that Finland has the smallest percentage of female directors, chief executives, and managers of small enterprises. In this country, 17% of all leadership positions are held by women, whereas 83% are held by men. In France, women hold a relatively large proportion of authority positions. However, it is important to realize that using different years or applying a different definition of an authority position would change the figures for the countries. For example, Sweden and Finland have the largest percentage of women in authority positions (26%) if we redefine authority to cover only the gender distribution of

members of the highest decision-making body of the largest listed companies in 2010 (European Commission 2011). Although official statistics provide information on occupational segregation between men and women in different European countries, the data is less conclusive about differences between them in occupational status.

Figure 3: Women in authority positions in 2007



Source: European Commission 2009. Note: The figure shows the percentage of all business leaders who are female. The term "business leader" covers International Standard Classification of Occupations (ISCO) categories 121 (Directors and chief executives) and 13 (Managers of small enterprises).

Reducing the gender pay gap and gender authority gap are fundamental goals voiced by the European Union (European Commission 2010). Moreover, policy makers and public commentators increasingly recognize the benefits of women's larger involvement in employment. Upcoming labor market shortages will increase the need for more working women. This emphasizes the relevance to society of research that can offer possible explanations for women's labor market involvement and career outcomes.

2. Aim of this study

National differences in women's labor market involvement and career outcomes in Europe show that explanations of these phenomena should be based not only on individual characteristics of women, but also on the characteristics of the contexts in which women live

and work. Our study therefore investigates available resources and restrictions within the **country context** as possible explanations for the variation in Europe in women's labor market involvement and career outcomes. Previous research focused on the importance of family-friendly state policies (Esping-Andersen 1990, 1999; Gornick, Meyers and Ross 2003; Plantenga and Remery 2005; Mandel and Semyonov 2006; Uunk, Kalmijn and Muffels 2005) and on economic and cultural circumstances (Fuwa 2004; Pettit and Hook 2009; Van der Lippe and Siegers 1994; Van der Lippe et al. 2011).

Because women are not only embedded in a country context but also in a **workplace and family context**, we further investigate whether these contexts offer resources and impose restrictions that give rise to variation in women's labor market involvement and career outcomes *within* and *between* European countries. With respect to the workplace context, previous research has shown that some employers have developed work-family arrangements, such as flexible working practices or the option of part-time work, which might help their employees combine work and care duties (Den Dulk 2001). Concerning the family context, we know that it is common in some countries for the extended family to help mothers with household and care tasks, enabling them to hold paid jobs (Esping-Andersen 1990, 1999; Knijn, Jönsson and Klammer 2005; Leira, Tobio and Trifiletti 2005).

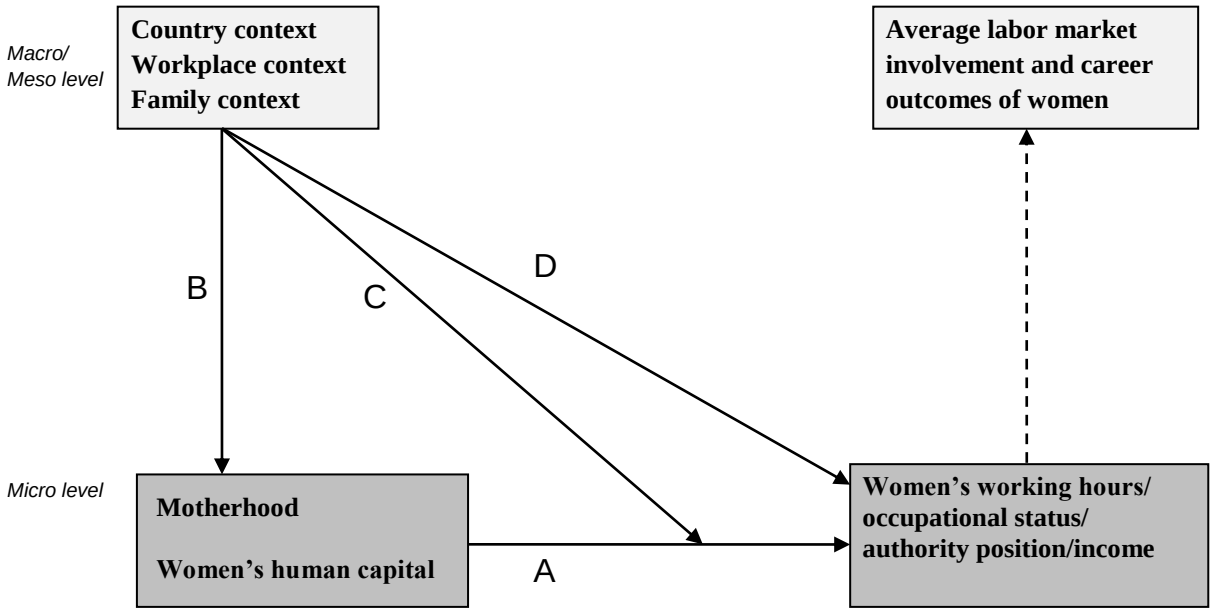
Considering country, workplace, and family characteristics also allows us to investigate how these contexts interrelate in their influence on women's labor market involvement and career outcomes. It is possible that available resources in the different contexts have a substitutive or reinforcing relationship. So far researchers have mainly focused on how a single context influences women's labor market involvement and career outcomes, and not on how different contexts are interrelated.

European countries score differently on the various labor market indicators, as shown in Figures 1, 2 and 3. This suggests that the country, workplace, and family contexts may differ in the way they influence different labor market indicators. We will consequently focus on several labor market outcomes in our research: women's working hours, their income, their likelihood of holding an authority position, and their occupational status. In exploring the relevance of country, workplace, and family characteristics for these various labor market indicators, we will try to explain differences between *men and women* as well as *among women* in labor market involvement and career outcomes. Our reasoning is that, in addition to the differences we have described *between* men and women, labor market involvement and career outcomes also vary *among* women, both within and between European countries.

Although there is nowadays also more variation in men's labor market involvement and career outcomes between different European countries the differences are still rather small.

Following from this, **the aim of this study is to gain insights in the influence of the family, workplace, and country context on differences in women's working hours, their income, the likelihood of their holding an authority position, and their occupational status.** The *overall research focus* is summarized in Figure 4.

Figure 4: Research focus



It can be seen that we combine different research perspectives on women's labor market involvement and career outcomes, considering not only micro-level processes but also how the country, workplace and family context influence women's labor market involvement and career outcomes. In order to do this, we consider compositional, moderating, and direct influences of the country, workplace, and family context in various European countries. At the micro level, motherhood status and accumulated human capital are put forward as common explanations for differences in labor market involvement and career outcomes among women or between men and women (Becker 1975; Gornick 2004; Hochschild and Machung 2003; Mills et al. 2008; Mincer and Polachek 1974; Pettit and Hook 2009; Treas and Widmer 2000). This is illustrated by Arrow A. Motherhood is known to create a dual burden, with women working and still bearing the main responsibility for household and care tasks (Gornick 2004; Hochschild and Machung 2003; Treas and Widmer 2000). In addition, previous research has

shown that accumulated human capital, e.g. work experience, is a main predictor for highly paid positions (Becker 1975; Mincer and Polachek 1974).

At the macro and meso level we find the country, workplace, and family context, which are likely to influence women's working hours, income, authority position or occupational status in various ways. Arrow B illustrates possible "compositional" explanations for country-to-country differences in women's labor market involvement and career outcomes. In this dissertation, compositional explanations refer to the argument that country-specific differences in resources and restrictions lead to differences in women's human capital accumulation, which in turn leads to differences in the average career outcomes of women between countries. Arrow C shows that we also investigate whether the country, workplace, and family contexts moderate processes on the micro level, such as the negative impact of motherhood on women's working hours, which can also cause variation within and between countries. Arrow D suggests that workplace, family, and country characteristics have a direct effect on women's labor market involvement and career outcomes. For example, some researchers have argued that direct effects of family-friendly policies on women's likelihood of holding an authority position compared to men exist because family-friendly policies stimulate discriminatory processes against women (Mandel & Semyonov 2006). Figure 4 does not show possible interactions between workplace, family, and country contexts, but they will be object of study as well.

3. Theoretical background

This section reviews theories that have been put forward to explain differences among women and between men and women in labor market involvement and career outcomes. We focus on theories that highlight important demands, restrictions, resources, and support (as a specific type of resource) in the family, workplace, and country context for women's labor market involvement and career outcomes. We also consider life course paradigms.

3.1 Family context

3.1.1 Division of labor

New Home Economics (e.g. Becker 1991; Blau and Ferber 1986; Bryant 1990) suggests that male and female partners are likely to specialize in paid and household labor in order to maximize joint family utility, which is family well-being. Who specializes in paid and who in

household labor will depend on the respective partner's relative advantage at home and on the labor market. In practice, the partner who specializes in household labor is most often the female partner. According to Becker (1991), this is because women have an advantage in childbearing and men in paid labor. These advantages result in women specializing in household and care tasks and men in earning the household income. Moreover, men often earn higher wages, which might be used as an argument for avoiding domestic work (Blood and Wolfe 1960; Van der Lippe and Siegers 1994). If we assume that women have a comparative advantage at home and men on the labor market, then differences between men's and women's labor market involvement can be expected.

Specialization is also likely to affect women's career outcomes. Because women specialize at home, they have fewer chances to accumulate human capital, which is, according to *human capital theory* (Becker 1975; Mincer and Polachek 1974), an important predictor of highly paid positions. In addition, researchers argue that women's educational choices are partly based on future care tasks. For example, it is assumed that women more often choose to study socio-cultural or care-related subjects because careers in these areas are easier to combine with later care tasks, whereas men choose technical and economic subjects that appear to be advantageous for professional career paths (Bock and Van Doorne-Huiskes 1995; Desai and Waite 1991; England 2005; Kalmijn and Van der Lippe 1997). The same is true for occupational choices. As a consequence, women's career profiles can be expected to deviate from those of men. Her career profile is then characterized by a pattern of non-continuous employment, and less suitable educational specialization for highly paid positions. *Supply-side theories* therefore suggest (e.g. Becker 1975; Mincer and Polachek 1974) that there are fewer qualified women than men available for highly paid positions. As a result, we can expect to see differences in men's and women's career outcomes.

One incentive for couples to specialize in paid and unpaid labor is the birth of a child (Becker and Moen 1999; Grunow, Schulz and Blossfeld 2012), which increases demands at home and thus decreases the time and energy available for work (Greenhaus and Beutell 1985). A common strategy that women use to deal with the double burden of work and care is to scale back the effort and time spent on the labor market (Becker and Moen 1999; Filer 1985). Motherhood can thus be expected to have negative consequences for career outcomes. Moreover, *life course paradigms* imply that these negative consequences are especially prevalent when births coincide with the critical career-building stage (Elder and Giele 2009a; Taniguchi 1999). As the demands at home are especially high when children are young, this

approach further suggests that the negative consequences of a birth for mothers' labor market involvement and career outcomes become less severe when children grow older. Similarly, it implies that career costs of higher-order births will be smaller than the cost involved in the first birth, because mothers are likely to make their labor market adjustments when having their first child, when child care responsibilities initially arise.

A further incentive for specialization might be the male partner's high income, which allows the female partner to spend less time and energy on the labor market (Steiber and Haas 2012). As not all women have a partner who can secure a decent standard of living, this suggests that the most profitable degree of specialization varies between couples. That is what is implied in the "need of income" argument, which states that a high level of specialization is less possible when an additional income is needed to achieve a decent standard of living (England 2005; Steiber and Haas 2012). This would lead to differences in career outcomes between women regardless of family composition.

An alternative explanation for the division of labor between partners is provided by *theories on gender ideologies* (e.g. Pettit & Hook 2005; Shelton and John 1996; Van der Lippe and Siegers 1994). Theories on gender ideologies imply that sex-role expectations influence the participation of women on the labor market as well as the contribution of men to the household and vice versa (Fuwa 2004; Pettit & Hook 2005; Shelton and John 1996). Socialization processes give rise to role expectations in respect of work and household labor, and men and women are likely to behave in accordance with these expectations because their behavior is confirmed by their surroundings (Fuwa 2004; Van der Lippe and Siegers 1994). Traditional gender attitudes would therefore lead to a more unequal division of household labor, with women being responsible for household and care demands and men for income and financial needs. Like New Home Economics, this would imply lower levels of labor market involvement and poorer career outcomes for women than for men. Theories on gender ideologies further imply that there can also be a more egalitarian division of labor within couples, with both men and women being equally responsible for household and paid labor. More specifically, when more egalitarian gender ideologies about participation in paid and household labor prevail, specialization is less likely to occur. Instead, male partners are more likely to help out with household tasks, allowing mothers a higher level of involvement on the labor market.

3.1.2 Support within the family context

In contrast to theories that focus on the division of labor within couples, *social capital theory* highlights resources within the network women are embedded in and that are beneficial for women's career outcomes (e.g. Coleman 1990; Granovetter 1974). The male partner is assumed to be a strong tie because he is most often available and takes an interest in the life of his female partner (Granovetter 1974). Following on from this, the female partner can be expected to profit from his resources. For example, if the male partner has contacts, skills, or knowledge that benefit career outcomes, the suggestion is that these resources can also benefit the female partner's career advancement (Bernardi 1999; Bernasco, De Graaf and Ultee 1998; Verbakel 2008). Moreover, the male partner might function as a bridge between the female partner and contacts who have job-related information, for example about jobs that pay a higher wage. Consequently, women will differ in their career outcomes depending on their male partner's resources. Unlike in New Home Economics, the partners' career outcomes are expected to be positively associated.

The social capital arguments can also be used with respect to care and household tasks, which tend to increase considerably when couples have children. Other members of a woman's network, such as other family members or friends, can help her combine work and family life more effectively by offering informal child care or by assisting with household tasks (e.g. Abendroth and Den Dulk 2011; Knijn, Jönsson and Klammer 2005; Leira, Tobio and Trifiletti 2005). In line with a *resource and demand approach* (Demerouti et al. 2001; House 1981), such help is likely to benefit women's labor market involvement and careers because it reduces the demands at home and increases mothers' time available for working. As a result, we expect that mothers' labor market involvement and career outcomes also depend on family members' help with care and household tasks.

3.2 Workplace context

3.2.1 Employers' demands

In addition to support and constraints within the family, the employer is important for the career outcomes of women. Employers are the ones who decide to hire or promote someone or to increase their pay. *Demand-side theories* suggest that employers not only consider the accumulated human capital in their decision making, but also other characteristics (Correll, Benard and Paik 2007; England 2010). For example, employers might associate motherhood

with lower productivity due to the division of labor within couples (Correll, Benard and Paik 2007; England 2010). Stereotypes about mothers' skills and productivity would also result in a lower demand of women or mothers by employers (Oakley 2000; Reskin 2000). Theories concerning employers' demands therefore imply that career outcomes differ between women with children and without children, and between men and women, but not between mothers with one child and mothers with more children. They further suggest that motherhood has long-term negative consequences for women's careers, because employers take this characteristic into account when making several different decisions e.g. about the extension of mothers' contracts or the possibility of a promotion. Life course paradigms, however, suggest that whether employers' make decisions based on motherhood depends on the phase of the woman's career (Elder and Giele 2009a). When women have already established a career before they have their first child, employers are likely to use their previous performance rather than motherhood per se to infer the future productivity of these late child-bearers.

When women in general are seen as bearing more responsibility for care-related tasks at home than men, for example due to traditional gender ideologies, and are more likely to go on leave and work part time, employers' may well expect *all* women to be less productive in the future (England 1994; Phelps 1972). This phenomenon is called statistical discrimination (Aigner and Cain 1977; England 1994; Pettit & Hook 2009; Phelps 1972) and suggests that even if men and women have the same accumulated human capital, women are disadvantaged on the labor market. This implies gender differences in the return on human capital investment.

3.2.2 Support within the workplace context

Other theories on organizations do not suggest a lower demand for women or mothers on the part of employers, but rather that employers support women in their efforts to combine work and care. For example, *neo-institutionalism* is used to explain why some employers offer work-family arrangements such as flexible working or part-time work (Den Dulk 2001; Ingram and Simons 1995). It has been suggested that there is a growing institutional pressure on employers to provide support for the integration of work and care (Den Dulk 2001; Been, Den Dulk and Van der Lippe 2011). Moreover, employers may also have economic reasons to offer work-family arrangements, for instance because they see benefits in retaining or attracting qualified women. However, these theories suggest that not all employers will provide these arrangements. Some employers are more high profile than others within a society, for example owing to their size, and this can lead to their responding differently to

institutional pressure. The economic benefits may also depend upon the number of women employed in the company or occupation (Been, Den Dulk and Van der Lippe 2011).

It is not self-evident that employer work-family arrangements are generally beneficial for women's labor market involvement and career outcomes. We assume that employer work-family arrangements are beneficial when they buffer women from the negative impact of care and household demands on their labor market involvement and career outcomes, in line with a *resources and demand approach* (Demerouti et al. 2001; House 1981). Flexible working hours allow women to adjust their work flexibly to meet family demands at home (Den Dulk 2001; Pettit and Hook 2009). Such arrangements are also likely to increase a woman's sense of control over her work, which is important; people experience difficult situations as less stressful when they feel they have some control (Thomas and Ganster 1995). We can thus assume that these work-family arrangements have a positive effect on mothers' labor market involvement and career outcomes. However, employers might also link these arrangements to a lower level of pay, as suggested by Filer (1989). In that case women would experience negative repercussions for their career advancement if they decide to choose occupations that offer these arrangements.

3.3 Country context

3.3.1 Family-friendly policies and supply-side arguments

Welfare state typologies suggest that the state can also provide support for the integration of work and care, for example by pursuing family-friendly state policies (Blossfeld and Drobnič 2001; Esping-Andersen 1990, 1999; Gornick, Meyers and Ross 1998). For example, in the Scandinavian countries the state pursues extensive family-friendly policies such as paid family-leave provisions or publicly funded child care. Similarly, typologies that distinguish between different gender regimes imply that states facilitate different family models, such as the dual earner, the male breadwinner, or the one and a half earner family (e.g. Blossfeld and Drobnič 2001; Haas 2005; Langan and Ostner 1991; Lewis 1992; Sainsbury 1994). In line with this, Gornick and Meyers (2008) stress the relevance of policies facilitating a dual earner-dual caregiver family (e.g. paid family-leave provision, working-time regulations, early childhood education and care) for creating a gender-egalitarian society. According to them a birth might not lead to specialization within couples if the state offers strong support for women's integration of work and care. As a consequence, mothers can be expected to

demonstrate a higher degree of labor market involvement and they are less likely to have deviating career profiles. That lowers the likelihood of a smaller supply of women for highly paid positions. However, existing classifications of family-friendly policies, which classify policies in those facilitating a dual earner, one and a half earner, or male breadwinner family (Korpi 2000), show that not all such policies prevent more sharply defined specialization within couples after a birth. Policies such as leave arrangements, the availability of part-time work, or child benefits are likely to encourage mothers to specialize in care tasks, reducing their labor market involvement and human capital accumulation. This can lead to their withdrawing from the labor market or to their reducing their working hours. For example, child benefits lessen the need for an additional income within the family.

Moreover, it seems that there are inconsistencies in policies within welfare states. In the Scandinavian countries policies facilitating the dual earner, male breadwinner, and one and a half earner family coexist. In addition, the availability of support in different countries does not seem to fully follow welfare state typologies (Abendroth and Den Dulk 2011). As a consequence, we do not use typologies to group countries but classify the policies themselves and consider the mechanisms that may lie behind their influence on women's labor market involvement and career outcomes. More specifically, we classify them in line with the family model that they are likely to facilitate and consider their impact on women's human capital accumulation. For example, in line with Korpi (2001), we classify child benefits as a policy that facilitates the male breadwinner family. In contrast, publicly funded child care reduces the time that needs to be spent at home and thus the possibility of a time-based work-family conflict. It is then less likely that women will reduce their hours or effort at work or take a career break. Following on from this, we assume that publicly funded child care facilitates a dual earner family and weakens the negative consequences of a birth for women's human capital accumulation. This implies that the career outcomes of women with children are more similar to those of women without children or to men when publicly funded child care is widely available. In line with this, Esping-Andersen (2009, p. 9) states "the essence of a workable family policy is one that maximizes families' capabilities via 'defamilialization', in particular of caring needs", which is true for publicly funded child care.

3.3.2 Family-friendly policies and demand-side arguments

Mandel and Semyonov (2006) argue that the supportiveness of welfare states can also play a role in increasing employer demand for women. They suggest that supportive welfare states

that offer family-friendly policies make the dominant role of women in the household more salient for employers' decision making. When leave policies are common and part-time work is widely available, employers expect that women will work part-time or take a career break after childbirth, resulting in more discrimination against women and mothers on the labor market. As a result, we can expect to see larger inequalities between men and women in countries with a supportive welfare state. Although Mandel and Semyonov (2006) expected to see these processes in supportive welfare states in general, we only expect this effect in states where policies give rise to deviating career profiles, examples of such policies are leave arrangements, child benefits, and the availability of part-time work. Publicly funded child care may even lessen employer discrimination because it is likely to boost the employment rate among mothers, thus giving employers less reason to associate motherhood with lower productivity.

3.3.3 Cultural country context

Some welfare regime and gender regime classifications imply that the cultural context also plays a role in women's labor market involvement and careers and that the characteristics of the cultural context will not necessarily coincide with state policies that encourage certain family models (e.g. Esping-Andersen 1990, 1999; Pettit & Hook 2005, Pfau-Effinger 2005). The cultural country context refers to ideas and norms about the division of labor between partners and the role of women on the labor market (Blossfeld & Drobnič, 2001; Sainsbury 1994; Treas & Widmer 2000). These ideologies can be assumed to influence women's labor market involvement and career outcomes as they suggest which family model (male breadwinner, one and a half earner, dual earner) is most valuable and acceptable in a society (Pettit & Hook 2005; Pfau-Effinger 2005). Thus, it is likely that the division of labor within couples depends on the cultural country context and that the birth of a child and a high income on the part of the male partner are a particular incentive to specialize in countries where traditional gender ideologies prevail. In contrast, in egalitarian contexts women might benefit from their male partner's career resources, as they customarily invest in a career.

3.3.4 Economic country context

The increase in women's labor market participation over the last few decades can be explained in part by economic circumstances such as economic growth and the rise of the service industry and female-typed occupations (Pettit & Hook 2005; Nieuwenhuis, Need, Van

der Kolk 2012). The argument is that these economic circumstances have resulted in a greater demand for female labor. In addition, economic circumstances are assumed to drive women's need to earn an additional income owing to the "economic affluence effect" (Steiber and Haas 2012; Uunk, Kalmijn and Muffels 2005). For example, the purchasing power of an average income in a country is likely to dictate whether an additional income of the female partner is required to sustain or improve the living standard of the household. If one income is not enough for a decent standard of living, the female partner is likely to invest in the labor market and a career. This also implies that in countries where the purchasing power of an average income is low, women's careers are more likely to benefit from their male partner's resources. A high purchasing power, on the other hand, makes a male breadwinner or one and a half earner family possible, with less need for a dual earner family to maintain a decent standard of living.

3.4 The interaction between contexts

Welfare regime classifications (Anttonen and Sipila 1996; Blossfeld and Drobnič 2001; Esping-Andersen 1990, 1999) suggest that the state is the main source of support in social-democratic countries such as Sweden and Finland. In the Mediterranean countries (e.g. Spain), it is the family, and in liberal countries (e.g. the UK) it is the market. However, this typology provides no insights in possible interactions between the various support sources. It could be that they have a complementary relationship and therefore do not interfere with one another. However, substitutive and reinforcing relationships are also possible. A substitutive relationship is likely if the support options function similarly, e.g. if family and state support increase mothers' available time. A reinforcing relationship is likely to exist when support sources function differently.

4. Research chapters

There is a considerable body of research on women's labor market involvement and career outcomes. We have tried to solve some of the remaining puzzles separately for each labor market indicator, namely working hours, occupational status, income, and authority position. This has resulted in the four research chapters, which are presented below.

In line with the overall research aim, we use a country comparative design in all the research chapters and focus on restrictions and resources within the contexts in which women are embedded (country, workplace, family). In addition, we consider the interaction between

the different contexts when possible. We differentiate between compositional, moderating and direct influences of resources and restrictions between the chapters. We also compare different groups in each chapter because the most interesting differences are sometimes those between mothers, between women with and without children, between women with differing partners, or between men and women.

4.1 Labor market involvement of mothers

Chapter II investigates the relevance of social support by the state, in the workplace, and by the family for the working hours of employed mothers in Europe. Moreover, we consider how these different support sources interrelate. We pose the following research question: ***"To what extent does the availability of state, workplace, and family support explain differences in the working hours of employed mothers within and between European countries?"*** Figure 5 summarizes our first research focus. We focus on working hours instead of labor market participation because previous research has mainly studied the relevance of family-friendly policies on the latter (e.g. Berninger 2009; Gornick, Meyers and Ross 1998; Mandel and Semyonov 2006; Pettit and Hook 2005).

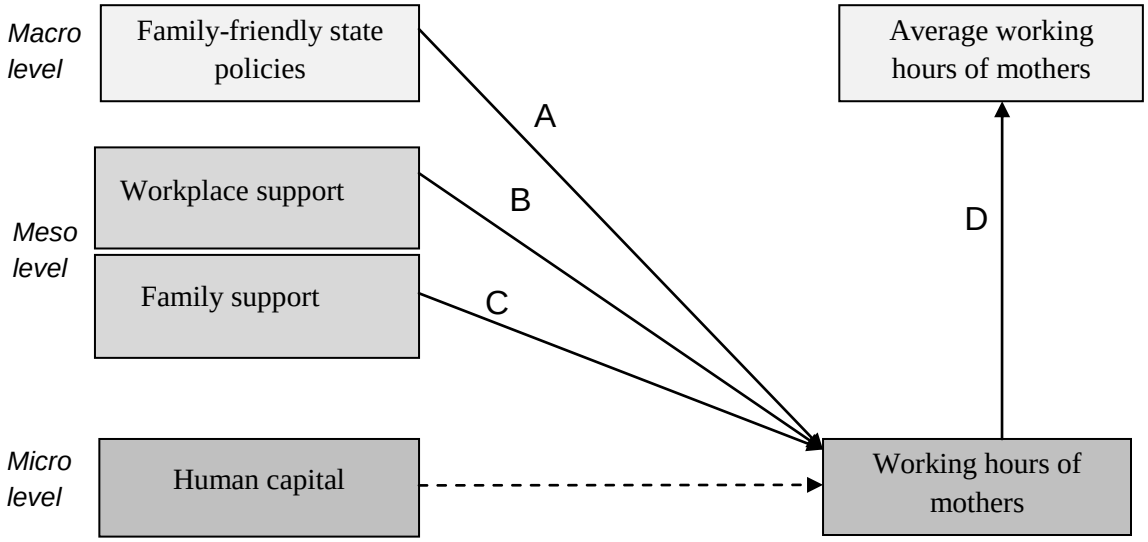
We aim to contribute to existing research in three different ways. First, we look more precisely at the relevance of available state support for working mothers, examining separately the effect of different state policies (publicly funded child care, leave arrangements, child benefits, availability of part-time work) (Arrow A). Previous research has produced mixed findings on the relationship between state support and the working hours of employed mothers. Some studies indicate a negative relationship between a supportive welfare state and full-time employment (Daly 2000; Mandel and Semyonov 2006), whereas others conclude that publicly funded child care has a positive impact on full-time employment (Kangas and Rostgaard 2007) and on working hours after childbirth (Uunk, Kalmijn and Muffels 2005). This difference might be due to the varying effects of different state policies, with some facilitating a dual-earner family and some a male breadwinner family.

Second, we extend the focus of prior research by taking available support in the workplace and by the family into account (Arrow B and C). The OECD (2001) describes how workplace support varies between countries. However, comparative research on the relevance of organizational support for the number of working hours of employed mothers has been scarce until now. Moreover, country comparative research on the relevance of family support for the labor market involvement of mothers has mainly been qualitative (Leira, Tobio and

Trifiletti 2005; Knijn, Jönsson and Klammer 2005). When family-friendly policies affect mothers' working hours and when family and workplace support differ between countries, this could also result in differences between countries in the average working hours of mothers. This is illustrated by Arrow D.

Third, we investigate whether state, workplace, and family support have a complementary, reinforcing or substitutive relationship. Comparative research on this topic has been scarce until now.

Figure 5: Research focus of Chapter II



4.2 Career outcomes of mothers

Chapter III will investigate the motherhood penalty for occupational status in different European countries, as well as the success of different work-family integration strategies (reducing parity, postponing birth) and family-friendly state policies to prevent motherhood from having negative consequences for career advancements. The following research questions are posed: ***Does the motherhood penalty for occupational status change over the life course? To what extent does the motherhood penalty vary by parity, timing of birth, and the availability of family-friendly state policies?*** This research focus is summarized in Figure 6.

We aim to contribute to existing research in various ways. First, previous research mainly focused on the motherhood penalty for wages (e.g. Budig and England 2001; Budig and Hodges 2010; Waldfogel 1997), but we want to consider whether this motherhood wage penalty is partly related to decisions to switch to lower-status occupations. Focusing on

occupational status instead of wages as our dependent variable draws attention to considerations that may lead mothers to accept lower-paying or less prestigious jobs (e.g. the convenience of part-time work).

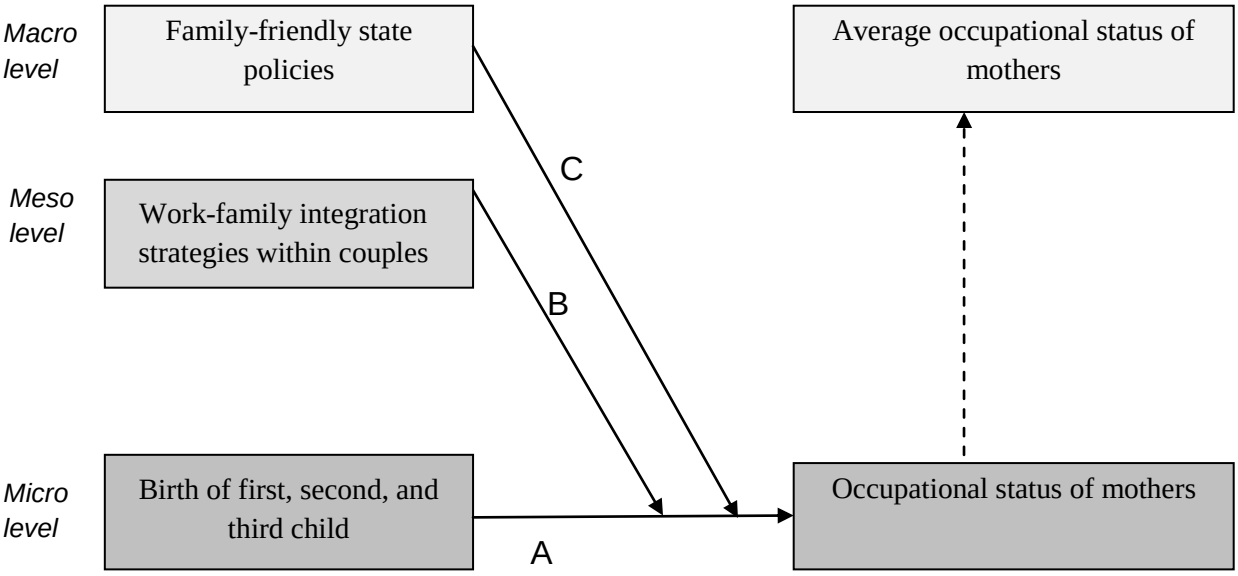
Second, we will investigate possible short-term and long-term consequences of motherhood for occupational status (Arrow A in Figure 6). Research on this issue has been inconclusive until now (Anderson, Binder and Krause 2003, Baum 2002; Dex, Ward and Joshi 2008). Dex, Ward and Joshi (2008) compared women's occupation following their first return to work after a birth with their most recent occupation and found downward occupational mobility. For earnings, Baum (2002) showed that longer career interruptions are more negative for initial career re-entries than they are for longer-term wage prospects. Anderson, Binder and Krause (2003) showed that older children are associated with a smaller motherhood wage penalty than younger children. This chapter studies how the motherhood penalty develops as children grow older and whether such changes can be explained by changes in working hours and the accumulation of work experience. This provides more insight as to whether women can compensate for the career losses associated with birth.

Third, we investigate whether the negative consequences of motherhood for women's occupational status can be moderated by different work-family integration strategies within couples, namely reducing parity or postponing birth to a later stage in the life course (Arrow B). Previous research showed that the wage penalty increases with the number of children (Petersen, Penner and Høgsnes 2010; Taniguchi 1999; Waldfogel 1997) and that the timing of a birth matters in terms of the negative consequences of motherhood for women's career outcomes (Aisenbrey, Evertsson and Grunow 2009; Miller 2011; Taniguchi 1999). However, these studies do not address whether the career costs of each birth are the same or whether costs decrease with parity and whether timing is a more relevant factor in the first birth or in higher-order births, a subject that will be explored in this dissertation.

Fourth, we consider to what degree family-friendly state policies moderate the negative consequences of motherhood for women's occupational career (Arrow C). We distinguish between policies that have a positive and policies that have a negative impact on mothers' human capital accumulation. Previous research has already shown that countries differ with respect to their motherhood wage penalty (Misra, Budig and Moller 2007; Sigle-Rushton and Waldfogel 2007), and that national policies shape gender inequalities on the labor market (e.g. Gornick, Meyers and Ross 1998; Mandel and Semyonov 2006; Uunk, Kalmijn and Muffels 2005). However, previous research has not tested whether national-level

policies weaken or stimulate negative short-term and long-term consequences of motherhood for occupational status.

Figure 6: Research focus of Chapter III



4.3 Career outcomes of women and partner influences

Chapter IV investigates another possible reason for couples to specialize after the birth of a child: the income of the male partner, which has often been neglected in research on women's careers (Steiber and Haas 2012). More specifically, we investigate whether male partner income is a restriction or resource for female income. We ask: ***"How does male partner income affect female income and wage rates and does this differ between European countries? To what extent can the cultural and economic context explain differences between countries in the effect of male partner income on female income and wage rates?"*** Figure 7 illustrates our research focus.

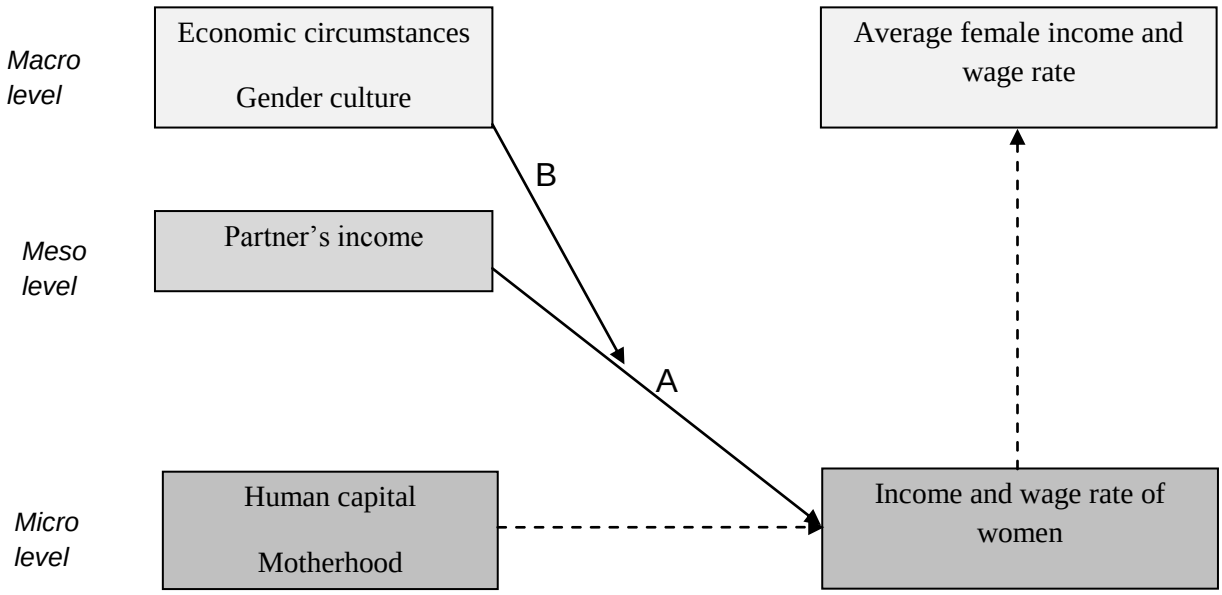
We aim to contribute to existing research in three different ways. First, this study adds a couple perspective to research on the gender income gap (Arrow A). Previous research attempted to explain women's income by focusing on individual differences (e.g. in the human capital they accumulated or their position or occupation) and on discriminatory behavior by employers against women or mothers (Becker 1981; Benard and Correll 2010; Correll, Benard and Paik 2007; England 1992, England 2010; Ridgeway 1997; Roos and Gatta 1999; Tomaskovic-Devey 1993). Research has been less inclined to consider the

income situation of the partner as a further restriction on female income, although the working lives of partners are likely to be interlinked (Moen 2003).

Second, Chapter IV will focus on partner income influences that are not confounded by assortative mating based on income or education, or by shared and stable resources and restrictions in the couples' surroundings. We do this by using fixed-effect models to investigate the relevance of changes in the male partner's income for female income and wage rates. Previous research has shown that partner's incomes are interrelated (Henz and Sundström 2001; Juhn and Murphy 1997; Schwartz 2010; Verbakel 2008), but these studies did not control for all the stable characteristics of both partners, for example educational homogamy.

Third, previous research has revealed differences in the correlations of spouses' incomes in different European countries (Cancian and Schoeni 1998), but did not test whether these variations are caused by differences in gender cultures and economic affluence in different country contexts. This will be of further interest in Chapter IV (Arrow B). That the cultural and economic context is likely to be important is indicated in research on the division of household labor within couples (Fuwa 2004). Moreover, theoretical arguments concerning the cultural and economic country context suggest that they affect the way couples divide paid and household labor.

Figure 7: Research focus of Chapter IV



4.4 Career outcomes of women and men

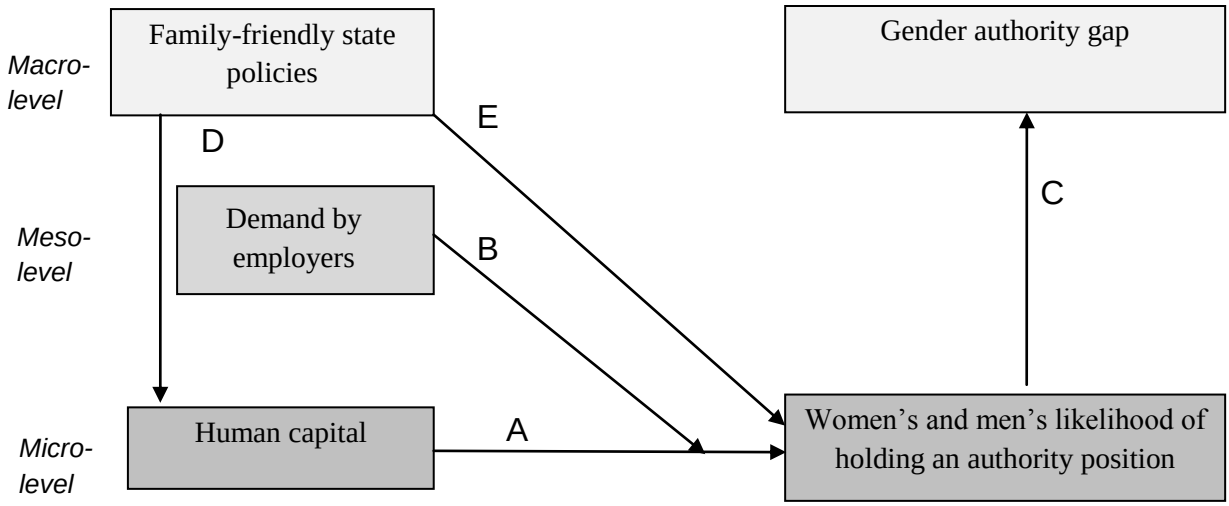
In the chapters described above, we deal with differences in women's labor market involvement and career outcomes. In Chapter V we try to explain gender inequalities between men and women on the labor market. We ask: "***To what extent do differences between men and women in human capital and their return on investment in human capital explain the gender gap in authority in Europe? And to what extent do gender differences in the composition of human capital and the return on investment in human capital, as well as differing country characteristics affecting that composition explain cross-national differences in the gender gap in authority?"*** Figure 8 illustrates this research focus.

We improve upon previous research in several ways. First, we investigate the extent to which differences between men and women in human capital are relevant for the gender gap in authority (Arrow A) by extending commonly used human capital indicators (educational attainment, the accumulation of work experience and experience with the current employer) by a number of new indicators (gender differences in human capital depreciation due to career interruptions; gender-specific distinctions in the type of educational program men and women choose) (Hultin 1998; Hopcroft 1996; Mueller, Kuruvilla and Iverson 1994; Wolf and Fliegstein 1979). This enables us to shed light on why previous research showed differing results concerning the importance of human capital for the gender authority gap (Hultin 1998; Hopcroft 1996; Mueller, Kuruvilla and Iverson 1994; Wolf and Fliegstein 1979). Second, we test demand-side explanations by investigating different returns on men's and women's human capital investment. This approach is indicated with Arrow B. Unfortunately we had no direct information on the demand by employers. Research that used the same approach involved single country studies and produced contradictory results (McGuire and Reskin 1993; Hultin 1998).

Third, we investigate compositional explanations for country-by-country differences in gender inequalities, as implied in supply-side arguments explaining gender inequalities on the labor market (Arrow C). Moreover, we consider whether these compositional differences in human capital are caused by family-friendly policies (Arrows D), since they are likely to influence women's human capital accumulation and thus their career profiles. We will do this for a selected group of policy indicators and consider those which are most closely related to the accumulation of human capital and to the career profiles of mothers (leave arrangements, the availability of part-time work). We also consider gender segregation in education in different countries, as some states also encourage women to study economic and technical

subjects, which more readily lead to authority positions and are often dominated by men (Bock and van Doorne-Huiskes 1995; England 2005; Kalmijn and Van der Lippe 1997). Previous research mainly investigated the direct effects of family-friendly policies on the gender gap in authority (see Arrow E) as indicators for lower employer demand for women in authority positions (Mandel and Semyonov 2006). The findings of these studies were mixed (Mandel and Semyonov 2006; Rosenfeld, Van Buren and Kalleberg 1998; Yaish and Stier 2009). We therefore also consider these direct effects of the state policy indicators. That characteristics of the workplace and family context can also influence women's human capital as indicated in the previous part is indirectly considered by the focus on differences in the human capital composition between countries.

Figure 8: Research focus of Chapter V



5. Data and Methods

5.1 Data

The research questions in Chapters II and V require information on women and men in different European countries, workplaces and families, as well as information on country, workplace, and family characteristics. The *European Social Survey (ESS) (2004/2005)* (NSD 2012) includes information on men and women in more than 20 countries as well as a rotating module on work, family, and well-being, making it suitable for our research. For example, information on flexible workplace arrangements and the partner providing help in the household is included in the European Social Survey 2004/2005; this information provides

important indicators for the research questions in Chapter II. Moreover, this wave of the ESS includes information on various human capital indicators, such as experience with current employer or the time spent at home caring for children, which are necessary for the research focus of Chapter V. The same module was applied in the most recent ESS (2012), making it possible to replicate the results of Chapters II and V in the future.

The research questions in Chapters III and IV require multiple observations of individuals in several countries over time. Therefore we also use the *European Community and Household Panel (1994-2001)* (European Commission 2012), which contains panel information on men and women in 14 European countries as well as information on their labor market involvement and career outcomes and family situation. Country comparative panel data has so far rarely been available. The ECHP is therefore an excellent source because it includes no less than 14 countries with panel data.

We collected country-specific information on state policies and cultural and economic circumstances which were most closely related to the theoretical arguments. We did not use typology-based indicators such as welfare state dummies, as they would not allow us to investigate different state policies separately from one another and because policies facilitating different family models prevail within countries. With respect to state policies, we tried to measure the availability of state policies when possible, and not their actual use, for reasons of causality. This was not always possible, however.

For Chapter II on mothers' working hours, we collected several indicators of family-friendly policies which varied in terms of the family model they were likely to facilitate (OECD 2008; OECD Economic Study 2003; Plantenga and Remery 2005). In Chapter III on women's occupational status, we use two time-varying indicators from the OECD Statistics (2012): one for family-friendly policies likely to strengthen the negative consequences of motherhood for women's human capital accumulation, and the other for family-friendly policies likely to weaken the negative consequences. For the research question explored in Chapter V, we consider indicators of state policies most closely associated with women's human capital accumulation (Duncan and Duncan 1955; ESS 2004/2005, Plantenga & Remery 2005). For the research questions investigated in Chapter IV, we collected indicators of the prevalence of egalitarian gender cultures and economic affluence within countries (INDP 2012; ECHP).

5.2 Methods

There are different methods of analyzing country comparative data. The *macro* approach aggregates individual information and correlates it with information on the country context. The *micro* approach analyses the individual data from each country separately and compares the results. Finally, the *macro-micro* approach combines information on individuals and countries, making it possible to test how they relate to each other (Van der Lippe and Van Dijk 2002).

In this research, we apply a macro-micro approach because we are interested in the possible influences of country, workplace, and family characteristics on individual decision making. Moreover, only the macro-micro approach allows us to consider compositional explanations for differences in gender inequalities between countries (Trappe and Rosenfeld 2001). The macro-micro approach does require a means of ruling out the possible bias of standard errors due to the clustering of individuals within one country. One solution lies in the hierarchical linear models used with cross-sectional data in country comparative research on labor market gender inequalities (Berninger 2009; Mandel and Semyonov 2005, Mandel and Semyonov 2006; Yaish and Stier 2009). We use these models to address the research questions in Chapters II and V.

Combining hierarchical linear models with the panel data covered in Chapters III and IV would, however, capture changes both within and between individuals. As we are interested only in within individual change in Chapter III, namely how women's occupational status develops over time, fixed effect models will be used instead (Allison 2005; Castilla 2007; England et al. 1988; Waldfogel 1997). Fixed effect models also control for the clustering of individuals within one country because they control for all unmeasured characteristics of individuals. Moreover, fixed effect models are helpful in addressing the research questions in Chapter III because they make it possible to study partner income influences that are not confounded by stable characteristics such as assortative mating based on income or education, or by shared and stable resources and restrictions in the couples' surroundings.

European country comparative data covers a limited number of countries, allowing to include only few country indicators and raising questions about the stability of the results in terms of the influence of state policies or the cultural and economic country context. We used different approaches in the various chapters to deal with the relatively small N on the country level. In Chapter II, which presents information on 23 countries, we pooled all the countries

and tested the influence of the relevant policy indicators. We also used the Jackknife procedure (Rodgers 1999) by always eliminating one country from the analysis to investigate the stability of our results. In Chapters III and IV, covering time-variant information on individuals in 14 countries, we used time-variant country indicators in order to increase the N at the country level (N=101). Moreover, in Chapter IV we also analyzed countries separately to see whether the results of the pooled analysis of country indicators followed the results of the single-country analysis. The number of countries was less of a problem in Chapter V because we analyzed whether differences in the composition of women's accumulated human capital lead to country differences in the gender gap in authority.

To deal with missing data on the dependent and independent variables, we used multiple imputation techniques for the research based on cross-sectional data in Chapters II and V. More specifically, we imputed missing data five times per country using the multiple imputation technique ICE in Stata (Royston 2004, 2005). After estimating the five imputed data sets, we calculated estimates and standard errors using the generic rules by Rubin (1987). Missing data was more difficult to impute in Chapters III and IV due to the panel structure of the data. To summarize, in the following research chapters we use the methods that best fit the research questions and data structure and check the stability of the results concerning the relevance of the country indicators used.

Chapter II: Social Support and the Working Hours of Employed Mothers in Europe. The Relevance of the State, the Workplace, and the Family[1]

[1] This chapter is published in Social Science Research 41 (2012), pp. 581-597, co-authored by Tanja van der Lippe and Ineke Maas.

1. Introduction

There is a large body of research showing that it is especially difficult for mothers to work longer hours because of their many care duties at home (e.g. Rosenfeld and Birkelund 1995; Van der Lippe 2001; Uunk, Kalmijn and Muffels 2005). Cross-country comparisons in Europe have revealed that the average number of working hours of employed mothers varies between countries.

For example, in Sweden 64% of mothers aged 25–54 with one child work full time, whereas in Spain this is true for 30% and in the UK for 26% of mothers (OECD 2002a). The aim of this chapter is to investigate the extent to which state, workplace and family support explain cross-country differences in the working hours of employed mothers. We restrict our study to mothers who are in paid employment. The decision of mothers to be employed or not has been extensively investigated in a country comparative perspective (e.g. Berninger 2009; Gornick, Meyers and Ross 1998; Mandel and Semyonov 2006; Pettit and Hook 2005). In general, results show that countries with a generous provision of publicly funded child care or with a higher availability of part-time work show higher labor market participation rates of mothers. We advance upon these studies by focusing on how many hours mothers work who have decided that they will stay on the labor market and study whether effects of state support are similar for working hours as they are for participation rates. In the longer term, the shrinking labor force will increase the demand for working mothers, making it important to study why mothers in some countries work longer hours than those in others. Moreover, an increase in the working hours of employed mothers can improve family resources and gender equity (OECD 2002b; Plantenga and Siegel 2004).

Recently, researchers have argued that differences in the support offered by welfare states may explain country variations in mothers' working hours (e.g. Daly 2000; Gornick, Meyers and Ross 1998, Gornick, Meyers and Ross 2003; Mandel and Semyonov 2006; Van der Lippe 2001). For example, in Scandinavia, the state offers publicly funded child care and leave arrangements, whereas in the UK state support is less available (Esping-Andersen 1990, 1999; Gornick, Meyers and Ross 2003; Plantenga and Remery 2005). The relationship between state support and the working hours of employed mothers is not always clear cut, however. To begin with, some studies indicate a negative relationship between a supportive welfare state and full-time employment (Daly 2000; Mandel and Semyonov 2006), whereas others conclude that publicly funded child care has a positive impact on full-time employment (Kangas and Rostgaard 2007) and on working hours after childbirth (Uunk, Kalmijn and

Muffels 2005). This difference might be due to the varying effects of different state policies, with some facilitating a dual-earner family and some a male breadwinner family (see also Korupp 2000). Therefore, Pettit and Hook (2005) recommend studying the effect of different state policies separately.

Furthermore, Uunk, Kalmijn and Muffels (2005) found that the effect of childbirth on the working hours of employed mothers in southern Europe was smaller than expected based on available publicly funded child care, even after controlling for the economic and cultural situation. Similarly, Daly (2000) and Mandel and Semyonov (2006) found that liberal countries like the USA, the UK and Canada have either a high or moderate employment rate, even though they offer a low degree of state support. The above findings suggest that other sources of support play a role. Working mothers are not only embedded in a national context; they are also part of an organizational context (their workplace) and a family (which can provide other means of support).

We know from related studies (Den Dulk 2001; OECD 2001a) that some employers have developed flexible workplace arrangements to support the work-family balance and that the availability of these arrangements differs between countries and sectors. Such arrangements can help working mothers respond to given and unpredictable demands in the household (children's illnesses or vacations). This may in turn make them more confident about taking a job that requires them to work more than part time. In the same vein, some studies have shown that job autonomy and flexible working practices reduce work-family conflict (e.g. Byron 2005; Grzywacz and Butler 2005).

Comparative research on the relevance of organizational support for the number of working hours of employed mothers is scarce. The OECD (2001) describes how workplace support varies between countries. It shows that flexi-time arrangements in 1995/1996 were relatively common in the Netherlands, Germany, the UK, and Sweden, but it does not link these arrangements to mothers' employment. Regarding emotional support in the workplace, Glass and Riley (1998) found that supervisor and colleague support helped prevent turnover among American women who had given birth. Their findings indicate the relevance of workplace support.

Some qualitative studies in this field also suggest that family support enables mothers to work longer hours. Leira, Tobio and Trifiletti (2005) describe how working mothers combined paid employment and child care in Norway, Italy, and Spain in the late 1970s/1980s. They show that grandparents who take over child care responsibilities play a

particularly important role in mothers' employment in Italy and Spain. Knijn, Jönsson and Klammer (2005) describe how working mothers organize working and child care in Sweden, Germany, and the Netherlands. Their study suggests that in the late 1990s, German and Dutch working mothers relied extensively on their families for help.

Considering all three sources of support – the state, the workplace and the family – makes it also possible to investigate the relationship between them. For example, in Scandinavia, the state gives working mothers ample support (Anttonen and Sipila 1996; Blossfeld and Drobnič 2001; Esping-Andersen 1990, 1999), possibly reducing their need for workplace and family support (Knijn, Jönsson and Klammer 2005; Leira, Tobio and Trifiletti 2005). Other researchers argue that the relationship is reinforcing, e.g. that state support is needed to profit from workplace support (Lewis, Watts and Camp 1996; Sahibzada et al. 2005; Thompson, Beauvais and Lyness 1999). However, comparative research on this topic has been scarce until now.

Based on the foregoing, our research question is the following: ''To what extent does the availability of state, workplace, and family support explain differences in the working hours of employed mothers in and between European countries?'' We aim to contribute to existing research in three different ways. First, we look more precisely at the relevance of available state support for working mothers, examining separately the effect of different state policies (publicly funded child care, leave arrangements, child benefits, availability of part-time work). Second, we extend the focus of prior research by taking available support in the workplace and by the family into account. Third, we investigate whether state, workplace and family support have a complementary, reinforcing or substitutive relationship. The present study makes use of data from the European Social Survey as well as country specific information from 23 countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Iceland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Slovakia, Switzerland, Turkey, and the UK.

2. Theory and hypotheses

The work-family literature proposes that it is especially difficult for working mothers to work long hours because of the amount of time and energy required of them at home. In accordance with conflict theory, this can result in a work-family conflict (Greenhaus and Beutell 1985; Van Daalen, Willemsen and Sanders 2006). Based on the resource and demand approach

(Demerouti et al. 2001; House 1981), we view social support as a resource that increases mothers' opportunity to work longer hours a week.

2.1 The relevance of state support for mothers' working hours

Comparative research on state support and mothers' employment often takes Esping-Andersen's welfare regime typology (1990, 1999) as a starting point (e.g. Gerhard, Knijn and Weckwert 2005; Stier, Lewin-Epstein and Braun 2001; Van der Lippe 2001). Such research suggests that the state can provide key support by implementing progressive social policies (e.g. publicly funded child care, leave arrangements, child benefits) that ease mothers' decisions about working hours. These supportive policies often coincide with a well-developed welfare state that takes responsibility for public welfare (Esping-Andersen 1990, 1999). Mandel and Semyonov (2006), however, argue that the welfare state creates ''sheltered labor markets'' that preserve the dominant role of the mother in the household and may therefore negatively impact their working hours (Mandel and Semyonov 2006:1911). Korpi (2000) solves this contradiction by categorizing state policies into those that support either the dual-earner family or the traditional male breadwinner family. The two categories have differing consequences for mothers' working hours.

Publicly funded child care and leave arrangements are examples of policies that facilitate the dual-earner family. Conflict theory is helpful to understand why this is the case. It stresses that time and energy are limited resources and that family life can interfere with work and work with family life. For example, time that mothers spend at home cannot be invested at work and vice versa. A time based conflict thus occurs when time pressure in one role makes it difficult to fulfill expectations from the other domain (Greenhaus and Beutell 1985; Van Daalen, Willemsen and Sanders 2006). The implication for this research is that if mothers need to invest less time in housework and child care, they will have more hours available to work. This is where publicly funded child care comes in. It decreases the amount of time mothers need for care duties and therefore increases the amount of time they have available to work (see also Rosenfeld and Birkelund 1995; Van der Lippe 2001). In line with this, Uunk, Kalmijn and Muffels (2005) show that publicly funded child care reduced the negative effect of childbirth on mothers' working hours. Similarly, Kangas and Rostgaard (2007) reveal that availability of day care positively influences the likelihood of mothers working full time.

Regarding the impact of maternity and care leave, the dominant argument is that generous leave arrangements foster continuous participation in the labor market. Generous leave arrangements allow mothers to care for babies and small children but return to work afterwards, because they are protected against dismissal during the leave period (Gornick, Meyers and Ross 1998; Kangas and Rostgaard 2007; Pettit and Hook 2005). Although a very long leave is known to decrease the probability to return to work after the leave period (Gornick and Hegewisch 2010; OECD 2003), mothers are less likely to decrease the number of working hours if they return to work since leave arrangements allow mothers to re-enter the same job for the same number of hours as before. Moreover, a long leave means that the child is older when the mother returns to work, making her more confident about working longer hours, for example more than part-time. We follow Korpi (2000) in categorizing these leave policies as facilitating the dual-earner family.

Child benefits are an example of policies facilitating the traditional male breadwinner family (Korpi 2000). Child benefits are cash transfers intended for families with dependent children, supplemented by a refundable tax credit (Dearing et al. 2007). The benefits increase the family's income and make mothers' additional earnings less necessary (see also OECD 2003; Rosenfeld and Birkelund 1995). They affect the household income, but do not help mothers integrate a career with child care. Although the money can be used to pay for private child care, we assume that child benefits have a negative impact on the working hours of mothers.

In addition to policies facilitating these two family models, other policies occupy a middle position by encouraging only one form of the dual-earner family: the one-and-a-half-earner family. Examples include policies that increase the availability of part-time work by offering the same benefits and security as for full-time work. The purpose of making part-time work more available is to facilitate the combination of work and care. Countries that offer this form of support do not, however, offer resources that boost mothers' working hours. To the contrary, the availability of part-time work may result in their working fewer hours. Finally, it is possible that policies facilitating the dual-earner family or the traditional male breadwinner family coexist in European countries, which can lead to inconsistencies in policies. In conclusion, we pose two hypotheses regarding state support:

H1: Policies that facilitate dual-earner families (such as publicly funded child care and leave arrangements) positively impact the number of working hours of employed mothers.

H2: Policies that facilitate traditional families or one-and-a-half-earner families (such as child benefits and the availability of part-time employment) negatively impact the number of working hours of employed mothers.

2.2 The relevance of workplace support for mothers' working hours

Because the details of how work and family are reconciled are negotiated in the workplace, the employer can be seen as a crucial source of support for mothers' employment (OECD 2001a). Some workplaces offer so called ''work-family arrangements,'' facilities within organizations that support the combination of paid and unpaid work (Den Dulk 1999). Examples of these workplace arrangements are flexible starting and finishing times and influence over how one's daily work is organized (Den Dulk and Peper 2007). Mothers can use these arrangements to make paid work more compatible with child care (Van Doorne-Huiskes et al. 1999). They allow mothers to respond to demands, both given (e.g. taking children to sports training) and unpredictable (e.g. a child's illness), increasing their ability to work longer hours and therefore facilitating their decision to do so.

A further argument is that people experience difficult situations as less stressful when they feel they have some control (Thomas and Ganster 1995). Control in this case is defined as ''the belief that one can exert some influence over the environment, either directly or indirectly, so that the environment becomes more rewarding or less threatening'' (Thomas and Ganster 1995, p. 7). In other words, mothers who feel in control may work longer hours because they do not see a possible conflict between work and family as threatening. This is supported by Valcour (2007), who discovered that employees with a high level of job control did not feel that longer working hours negatively affected their work-family balance satisfaction. Our third hypothesis is therefore:

H3: Available supportive workplace arrangements positively impact the number of working hours of employed mothers.

2.3 The relevance of family support for mothers' working hours

Family sociology draws attention to intergenerational solidarity (Bengtson and Roberts 1991; Hill 2006). Qualitative studies by Leira, Tobio and Trifiletti (2005) and Knijn, Jönsson and Klammer (2005) stress the importance of help offered by an employed mother's parents and in-laws. Similarly, the mother's partner can play an important role. Tijdens (1997) showed that Dutch women whose partner helped out at home worked nearly three hours more on average than those without this support. However, the partner's household help may also be the result of the mother working longer hours. The mechanism behind family support is similar to that driving state support. Similar to publicly funded child care, family child care solves the problem that the child needs care when the mother is working. In other words, when a mother has access to informal child care, she can reduce the number of hours she spends at home and work longer hours. Similarly, mothers who have their partners' or families' help with household chores can spend less time at home, permitting an increase in their working hours. We therefore expect the following:

H4: Help that employed mothers receive from their partner and family with child care and household tasks positively impacts their number of working hours.

Socialization theory points to the relevance of family role models (Van Putten, Dykstra and Schippers 2008; Bandura 1977). Supportive role models help mothers feel confident about their ability to combine child care with longer working hours. Van Dijk and Siegers (1998) stress the relevance of social approval for the way mothers arrange their lives. Family members can give this approval by providing egalitarian gender role values in the socialization process, but also by acting as a role model in combining work and care. In line with this, Starrels (1992) showed that there exists a positive relationship between mothers' and children's attitudes towards maternal employment. More direct evidence is provided by Van Putten, Dykstra and Schippers (2008), who showed that Dutch women raised by working mothers, work about two hours per week more than those raised by mothers who did not work. Similarly, Parish, Hao and Hogan (1991) found that the probability of young mothers starting a job was higher if they had been raised by working parents. Korupp (2000) showed that mother's influence even extents to the occupational status attainment of their daughters. Our fifth hypothesis is therefore:

H5: Supportive family role models positively impact the number of working hours of employed mothers.

2.4 The relation between state, workplace and family support

Now that we have distinguished different levels of support, we can consider how state, workplace, and family support interact. Welfare regime classifications (Anttonen and Sipila 1996; Blossfeld and Drobnič 2001; Esping-Andersen 1990, 1999) suggest that the state is the main provider of support in social-democratic countries such as Sweden and Finland. In the Mediterranean countries (e.g. Spain) it is the family and in liberal countries (e.g. the UK) it is the market. However, this approach is less conclusive when it comes to the interaction between the various different support levels. It could be that they have a complementary relationship and therefore do not interfere with one another. However, we think that this is not always the case. We suggest that substitutive and reinforcing relationships are also possible. A substitutive relationship is likely if the support options function similarly, e.g. if family and state support increase mothers' available time. In our study, this is true for publicly funded child care and informal household help and child care by the family. Leira, Tobio and Trifiletti (2005) already hinted at a substitutive relationship between these support sources, showing that mothers in Norway – a country with a high level of state support – relied less extensively on grandparents' help compared with mothers in Italy and Spain. We therefore hypothesize:

H6a: Publicly funded child care and household/child care help from within and outside the household substitute each other.

A reinforcing relationship is likely to exist when support sources function differently. For example, Thompson, Beauvais and Lyness (1999) and Sahibzada et al. (2005) show that a supportive work culture – increasing mothers' feeling of control – is positively related to the utilization of supportive workplace arrangements, which increase the time available for work. Similarly, Lewis, Watts and Camp (1996) suggest that the socio-political context can influence the extent to which employees feel entitled to use workplace work-family arrangements. A study by the SCP (2008) shows that the discrepancy between available publicly funded child care and actual use of such arrangements is the result of norms and values that make mothers feel entitled to use publicly funded child care for no more than 2 or

3 days a week. Workplace flexibility may also be not enough to enable mothers to work long hours. Child care options are needed to increase the time available to work, which can then be adapted flexibly to meet the demands in the home. Our hypothesis is therefore:

H6b: Workplace support, supportive family role models, publicly funded or informal child care, and leave arrangements have reinforcing relationships.

2.5 Other explanations

Previous research on working hours and labor market participation of women or mothers (e.g. Berninger 2009; Mandel and Semyonov 2006; Stier, Lewin-Epstein and Braun 2001; Uunk, Kalmijn and Muffels 2005; Van der Lippe 2001), has shown that education, age, the family situation, and the financial situation in the household are relevant explanatory factors. The educational level indicates both individual aspirations and the potential quality of the job of mothers. Higher educated women are therefore expected to work more hours. Age and age squared are important controls since women who get their children later might have already established a career and be less likely to lower their working hours. In addition, working hours of mothers might differ depending on the need for additional income within a household. A partner with a high occupational status indicates a high household income and thus is likely to lower the need of the mother to work longer hours. In contrast, having no partner increases the need of working longer hours in order to earn enough for daily living. Finally, the number of children and the age of the youngest child indicate the time and energy needed at home. Women with more and with younger children work fewer hours.

3. Data and Methods

3.1 Data

We tested our hypotheses by taking data from the European Social Survey (ESS) 2004/2005 and information about state policies from various other sources (e.g. OECD 2003; Plantenga and Remery 2005). The ESS is a multi-country survey that has both core and rotating modules included at intervals. The second ESS round in 2004/2005 collected data from 49,066 respondents in 26 countries. The response rates for the participating countries ranged between

44% for France to 79% for Estonia. It also included a module on family, work, and well-being, making it suitable for our research[2].

We selected a sub-sample (N = 3036) of the ESS 2004/2005 for our analysis: women aged 18–55 in paid employment with children living at home (youngest child ≤ 12). Age 12 is chosen because younger children are more demanding than older children and in many European countries children leave primary education around the age of 12.

The sub-sample comprises respondents from 23 countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Iceland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Slovakia, Switzerland, Turkey, and the UK. Data from Ukraine, Estonia, and Slovenia were dropped because information on certain state policies was unavailable. Missing information on the dependent or independent variables was imputed five times per country using the multiple imputation technique ICE in Stata (Royston 2004, 2005). After the estimation of the five imputed data sets, estimates and standard errors were calculated using the generic rules by Rubin (1987).

3.2 Measurement

Dependent variable

The dependent variable *paid working hours* was measured by asking the respondents their number of contracted hours a week. We top coded the variable at 70 working hours (8 cases).

State support

Publicly funded child care and leave arrangements were chosen to represent policies facilitating the dual-earner family. In order to measure the *availability of publicly funded child care*, we used expenditure on formal day care as a percentage of GDP in 1999, taken from the OECD Economic Study (2003). Since this report did not contain data on Hungary, Poland, Luxembourg or Italy, we chose a similar measure from the OECD Family Database for 2005 (OECD 2008), which provides information on publicly funded child care for 2005 and thereafter.

[2] More details on the ESS can be found on the website of the Norwegian Social Science Data Services (NS), which archives and distributes the ESS data (http://ess.nsd.uib.no/), and in the Technical Report of the European Social Survey 2004/05 (Jowell).

To measure the supportiveness of leave arrangements, we selected the *effective parental leave* measure of Plantenga and Remery (2005). Effective parental leave was calculated by weighting the total weeks of maternity and parental leave by level of payment. The weight was set to 33% if the benefit was between 0% and 33% of the minimum wage, to 66% if the benefit was between 34% and 66% of the minimum wage, and to 100% if the benefit was between 67% and 100% of the minimum wage. In addition, Plantenga and Remery (2005) distinguished if parental leave was an individual or family right. If it was an individual right both parents could take the amount of leave. Therefore the weighted leave period was multiplied by two (Plantenga and Remery 2005). Since Plantenga and Remery (2005) do not provide this information for Turkey and Switzerland, we took our information from the OECD Economic Study (2003), which offers data on the total number of leave weeks as well as weighted paid leave weeks[3] (OECD 2003). We used weighted paid leave weeks for Turkey and total number for Switzerland, as the OECD study does not provide information about weighted leave weeks for that country, and because the value for Switzerland is already relatively low for total number of leave weeks. In an additional analysis we checked for a quadratic effect of leave, but the quadratic term was not significant.

Child benefits were chosen to represent a policy facilitating the traditional family. We measured this by looking at the percentage increase in disposable income between families with two children and no children owing to child benefits (see OECD 2003). In this way the financial consequences of all kind of policies are brought on the same measurement scale.

To measure *availability of part-time work*, we took the percentage of men in part-time employment in the ESS 2004. We assume that the availability of part-time work would result in a higher use of this work arrangement. The percentage of women in part-time employment is closely related to our dependent variable and is therefore not an appropriate measurement. We assume that state policies that make part-time work attractive for men also do so for women. This assumption is supported by the high correlation between the two indicators. At the country level the percentage of men and women working part-time is correlated .71.

Workplace support

We constructed the variable *supportive workplace arrangements* as an index of three items: whether the respondent is allowed to influence (1) the pace of work and (2) how daily work is organized and whether the respondent can decide (3) the time he or she starts and finishes

[3] Weighted by the corresponding income replacement rate.

work. For the first two items the answer categories ranged from 0 ‘‘I have no influence’’ to 10 ‘‘I have complete control’’ and for the last item from 1 ‘‘not at all true’’ to 4 ‘‘very true.’’ The reliability analysis (Cronbachs’ alpha = .70) shows sufficient consistency between the items. The three items were z-standardized and combined into one index by taking the mean. This resulted in a scale ranging from -1.63 to 1.14. The last item was presented only to employees. We assumed that self-employed respondents and those who worked for their own businesses have the highest values on control over their working time. In order to investigate whether self-employed women and women working in a family business differ from employed women, we include a dummy variable *self-employed or working for own family business*.

Family support

The *availability of care and household help by family outside the household* was measured by asking whether the respondents could count on unpaid household help or child care from anyone outside the household when needed. The respondents were assigned ‘‘1’’ when they answered ‘‘yes’’ and ‘‘0’’ when they answered ‘‘no’’ or ‘‘don’t know.’’

To measure household help by family within the household, we included information about the amount of *housework the partner does* on a typical weekday. The answer categories ranged from ‘‘none or almost none’’ (1) to ‘‘all or nearly all of the time’’ (6). Mothers without a partner were added to the first category. It should be noted that this variable indicates actual and not available support. That means that the actual support provided by the partner may also be a consequence of the mother’s long working hours.

We measured available supportive family role models by asking the respondent about her mother’s employment status when she was 14, in line with Van Putten, Dykstra and Schippers (2008). The variable was recoded into a dummy variable with ‘‘0’’ standing for ‘‘not working or absent’’ and ‘‘1’’ for ‘‘working.’’

Control variables

Similar to other studies on the working hours or labor market participation of women or mothers (e.g. Berninger 2009; Mandel and Semyonov 2006; Stier, Lewin-Epstein and Braun 2001; Uunk, Kalmijn and Muffels 2005; Van der Lippe et al. 2011), we added information about education, age, number and age of children living at home, and the necessity of working as control variables.

Educational level was measured by asking the respondents how many years of full-time education they had completed. We top coded years of full-time education to 29. The *age* of the respondent was calculated using ‘‘year of birth.’’ A quadratic effect was captured with the variable *age²*. In an additional analysis we restricted age of the respondent to 45. This did not lead to different results. The *number of children living at home* included adopted and fostered children and the partner's child/children, and the *age of the youngest child in the household* ranged from 0 to 12.

To control for the need to work, we included several dummy variables about the *partner situation* using information about his working hours and socio-economic status (ISEI): (1) ‘‘the respondent does not have a partner living at home,’’ (2) ‘‘the respondent has a partner living at home who is not working,’’ (3) ‘‘the respondent has a working partner living at home with a low-status job (ISEI 16–31),’’ (4) ‘‘the respondent has a working partner at home with a middle-status job (ISEI 34–51),’’ (5) ‘‘the respondent has a working partner at home with a high-status job (ISEI 52–90).’’ The allocation to low, middle and high status was based on the distribution of the respondents across the ISEI categories. The first dummy was used as a reference category. We did not distinguish between full-time or part-time work, as it was rare for partners to work part time.

Similar to other studies, we did not control for preferences because they may be the result of opportunities (e.g. Mandel and Semyonov 2006). For the same reason, we do not include mothers' socioeconomic status as a control variable[4]. Note that we do include women's level of education, which is an indicator of both individual preferences and the potential quality of women's jobs. Table 1 provides the means and standard deviations for the dependent and all independent variables. Tables A and B in the Appendix provide the means of state, workplace, and family support for each country separately, as well as the total N and the percentage of working mothers in the countries. Tables C1 and C2 provide the correlations of all variables.

[4] The results did not change when we took socioeconomic status of employed mothers into account.

Table 1: Descriptive of dependent and independent variables

	Mean	S.D.	Range
Individual information (N=3,036)			
Dependent variable			
Working hours of mothers	31.74	11.67	1-70
Workplace support			
Supportive workplace arrangements	.00	.79	-1.63-1.14
Family support			
Care and household help outside household	.85		0/1
Household help partner	1.97	1.04	1-6
Supportive role models	.60		0/1
Control variables			
Age	36.52	6.08	18-55
Years of education	13.38	3.57	0-29
Self-employed or working for own family business	.23		0/1
Number of children living at home	1.93	.87	1-7
Age youngest child	5.99	3.64	0-12
Partner			
No partner at home	.15		0/1
Partner does not work	.05		0/1
Partner works: low status	.25		0/1
Partner works: middle status	.28		0/1
Partner works: high status	.27		0/1
Country context variables (N=23)			
National support			
Publicly funded child care	.41	.46	0-1.7
Parental leave	44.00	28.76	8-114
Child benefits	9.00	5.26	0-21
Availability of part-time employment	8.38	3.11	2.6-16.7

Sources: ESS 2004/2005, OECD 2003; OECD Family Database; Plantenga and Remery 2005; Plantenga and Siegel 2004; ESS 2004

Notes: Means are calculated over all 5 imputed data sets. The standard deviations (S.D.) were calculated for each of the 5 imputed data sets. The mean of these 5 standard deviations is shown in the table.

3.3 Methods

The hierarchical nature of the data (individual i nested within institutional context j) led us to estimate a series of hierarchical linear models (Hox 2002; Snijders and Bosker 1999), including information at the individual and country levels. A three-level design was not possible because workplace support was only measured at the individual level.

One major advantage of hierarchical models is that they recognize the existence of variation in working hours at the individual and country levels. Moreover, they make it possible to research the effect of country and individual characteristics as well as interaction effects between the different support sources (state, workplace, family). Not applying a

hierarchical analysis would result in biased standard errors because of the dependency of individuals in one country.

Because we pre-selected respondents in paid employment, we needed to check for a selection bias. Therefore, we applied a Heckman selection model, accounting for country clustering (Heckman 1979). The analysis did not indicate a possible bias, in line with research by Van Putten, Dykstra and Schippers (2008) on working women in the Netherlands. We therefore chose to use a standard hierarchical model[5]. Table A in the Appendix shows the percentage of women with children at home where the youngest child is 12 or younger in all countries.

We started with an empty hierarchical linear model in order to study variance at the individual and country levels. The control variables were added in model 2. Models 3–5 included the control variables and one of the support sources respectively, starting with state support and ending with family support. The sixth model included all variables and the final model the interaction effects.

4. Results

Table 2 presents the results of the hierarchical analysis with the dependent variable ‘‘mothers’ paid working hours.’’ The analysis was performed for 3,036 individuals on the first level and 23 countries on the second level. Based on model 1, the intercept-only model, it was possible to calculate the intra-class correlation. This showed that 22% of the variance of the dependent variable was on the country level and 78% at the individual level.

Model 7, which includes all the control and support variables and the significant interaction effects, explains 71% of the country-level variance and 6% of the individual variance. That means we were better able to explain differences in working hours between countries than between individuals in one country. Changes in the unexplained country-level variance due to the support variables and the control variables show that it is not the

[5] We applied the Heckman model for all models (2-7), including the control and support variables mentioned. Workplace support was not included in the selection model since it would be unavailable for mothers outside the labor market. For the selection model, we added the respondent’s religiousness. The results show that the more religious the respondents were, the less likely they were to be in paid employment. This variable had no effect on working hours in a separate model. In addition to the selection into paid employment, there was a possible selection bias with respect to motherhood. A Heckman model does not allow us to control for two selections, and we considered a possible selection bias for motherhood less obvious. Although a large amount of support might increase the incidence of motherhood in a country and a small amount of support might result in fewer women having children, this is less likely to lead to an over- or underestimation of the effect of support in our analysis. Similarly, Berninger’s study (2009) on mothers’ labor market participation did not consider this possible pre-selection with the same dataset.

composition of the population but mainly state policies that are behind international differences in mothers' paid working hours.

Model 3 provides information regarding the effect of state support. The results indicate that publicly funded child care, categorized as a policy facilitating the dual-earner family, has no significant effect on mothers' working hours. Effective parental leave, also categorized as state support facilitating the dual-earner family, positively impacts mothers' working hours. Mothers who can take a long effective parental leave (See Table 1: 114 = maximum of effective leave weeks) work an average of 5 hours more than mothers who can only take a short effective parental leave (See Table 1: 8 = minimum of effective leave weeks) ((114–8) × .050 = 5.30). Thus, hypothesis 1, which predicts that policies facilitating the dual-earner family model will have a positive effect, is only partly supported. The results for child benefits support hypothesis 2, which argues that policies facilitating the male breadwinner family, are negatively related to working hours of mothers. In the same way as for effective parental leave, the increase in hours due to child benefits can be calculated. Mothers whose disposable family income increases considerably due to child benefits work on average up to 11 hours less than mothers without this increase. Similarly, the availability of part-time work has a significant negative effect, which is also in line with hypothesis 2. Mothers for whom part-time work is readily available, work up to 16 hours less on average than mothers for whom it is less available. The coefficient of available workplace support in model 4 indicates a positive effect on the number of hours a mother participates in paid employment during a week. Mothers who are employed in a workplace that offers a high level of workplace support work 3 hours more on average compared to mothers with a low level of available workplace support. This provides support for hypothesis 3, which suggests that workplace support has a positive impact on mothers' working hours.

The results regarding available family support in model 5 shows that the possibility of receiving unpaid household help from outside the household does not have a positive effect, but that household help by the partner is significantly related to the number of contracted hours a mother chooses to work. Employed mothers who receive a lot of help from their partner work 6 h more on average than employed mothers without this help[6]. This means we

[6] We estimated a model without the variables which could be part of the decision for a certain number of working hours. For example, whether the partner helps with household tasks, may be decided simultaneously upon with the decision about working hours. The same could be true for number of children living at home, age of youngest child and the partner situation. The results for all hypotheses remained stable.

have only partly confirmed hypothesis 4. The effect of supportive family role models is positive and therefore supports hypothesis 5. Model 6, with all control and support variables included, shows no major changes in the effects of state, workplace, and family support.

Model 7 provides information about the relationship between the different support sources. No evidence was found for a substitutive relationship (H6a) between publicly funded child care on the one hand and child care and household help within and outside the household on the other. Model 7 further illustrates that supportive family role models reinforce the effect of workplace support. Similarly, publicly funded child care and a high level of workplace support are only beneficial if they are both available. This is in line with hypothesis 6b, which suggests a reinforcing relationship between these support options. The other interaction effects suggested in hypothesis 6b were not significant, indicating a complementary relationship. The effect of parental leave becomes non-significant in model 7. It now indicates the effect for countries with average supportive leave arrangements due to the consideration of reinforcing relationships with care and household help outside the household, workplace support and supportive role models (interaction effects).

Since we estimated the effects of four variables at the country level with 23 countries, it is possible that the results are driven by only one, very influential, country. In a next step, we therefore checked for influential countries by deleting every country once from the analysis (Jackknife procedure; Rodgers 1999). The results are shown in the Appendix (Tables D1–D3). The results described above are quite stable. The effects of workplace and family support remain significant and changes in the sizes of the effects are minor.

An exception is the interaction between supportive role models and supportive workplace arrangements, which disappears when Ireland or Switzerland are excluded. Moreover, taking Germany out of the analysis turns the interaction between supportive workplace arrangements and partners' help into significant ($p < .10$).

The effects of child benefits and the availability of part-time work are still apparent as well as the interaction between publicly funded child care and supportive workplace arrangements. An exception is the effect of parental leave which reappears when Belgium, Portugal, or Spain are excluded ($p < .10$). Similarly the effect of average supportive public funded child care turns into significant when we exclude Turkey ($p < .10$). Due to this, the results which change due to the Jackknife procedure need to be interpreted with care.

Table 2: Hierarchical analysis for mothers' working hours in Europe

	Dir. hyp	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
		B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Constant		32.640***	1.169	33.282***	1.010	32.834***	.752	33.536***	1.026	34.922***	1.202	34.831***	1.150	34.483***	1.104
Control Variables															
Age				-.062	.035	-.065	.036	-.077*	.035	-.062	.036	-.081*	.036	-.082*	.037
Age²				.002	.004	.002	.004	.003	.004	.001	.003	.002	.003	.002	.003
Years of education				.044	.087	.039	.088	.011	.087	.012	.086	-.022	.087	-.008	.089
Self-employed or working for own family business				-1.946*	.988	-1.957*	.980	-2.870**	.963	-1.651	.929	-2.544**	.883	-2.483**	.861
Number of children living at home				-1.027***	.279	-1.016***	.279	-.994***	.274	-.957**	.278	-.919**	.274	-.913**	.273
Age youngest child				.040	.068	.041	.068	.046	.068	.046	.064	.054	.064	.055	.065
Partner situation (no partner):															
Partner does not work				1.105	1.038	1.084	1.030	1.181	1.005	-1.006	1.252	-.921	1.207	-.861	1.220
Partner works: low status				-.119	.722	-.127	.723	-.133	.720	-1.321	.797	-1.320	.792	-1.205	.766
Partner works: middle status				-.081	.619	-.084	.618	-.153	.622	-1.356	.717	-1.396	.717	-1.289	.722
Partner works: high status				-1.198	.783	-1.203	.780	-1.287	.773	-2.528**	.857	-2.580**	.843	-2.473**	.838
State Support															
Publicly funded child care	+					1.745	1.595					1.352	1.621	.609	2.169
Parental leave	+					.050°	.031					.044°	.030	.038	.037
Child benefits	-					-.514**	.200					-.503**	.196	-.451*	.192
Availabilityof part-time work	-					-1.115***	.142					-1.131***	.148	-1.125***	.177
Workplace Support															
Supp. workplace arrangements	+							1.067***	.295			1.010***	.300	-.127	.877
Family Support															
Care and household help outside household	+									-1.427	.711	-1.519	.727	-1.341	.700
Household help partner	+									1.183***	.222	1.158***	.216	1.097***	.205
Supportive role models	+									1.068**	.399	.929**	.395	.964**	.375
Interaction effects															
Substitution															
Partner help_Publicly funded childcare	-													.053	.325
Care and household help outside household_ Publicly funded childcare	-													2.103	1.653
Interaction effects															

Reinforcing									
Family – Workplace									
Supportive role models_Workplace support	+							1.166*	.690
Partner help_Workplace support	+							.233	.236
Care and household help outside house-hold_Workplace support	+							.147	.575
Country – Workplace									
Workplace support_ Publicly funded childcare	+							.927*	.439
Workplace support_Parental leave	+							-.017	.011
Country-Family									
Publicly funded childcare_ Supportive role models	+							-1.323	.806
Parental leave_ Supportive role models	+							.013	.017
Parental leave_ Care and household help outside household	+							-.015	.024
Parental leave_Partner help	+							-.009	.007
Random part									
Level 1: Individuals (N=2599)									
Variance first level		105.451	103.192	103.215	102.680	101.526	101.103	99.630	
Level 2: Country (N=23)									
Variance second level		30.464	28.580	10.267	29.220a	27.070	9.911	8.879	

Source: ESS 2004/2005; Notes: One-sided test for directed hypotheses (Dir. hyp). Continuous variables were centered around the mean.
Notes: *p < .05 **p < .01 ***p < .001; for county variables: °p < .1; a It is possible that the unexplained variance increases (compare model 4 and 2). For more information see Hox (2002) and Snijder and Bosker (1999). In model 7 the effects of workplace and family support are allowed to vary between individuals in different countries (random slope) in order to calculate cross-level interactions between the individual and country level. B=coefficient; SE=standard error of the coefficient

5. Discussion

In this study we investigated the relevance of available state, workplace, and family support for the working hours of mothers and the relationship between these different support sources.

We conclude that all three types of available support explain differences in the working hours of employed mothers within and between various European countries. State support is an important support factor, but it is necessary to distinguish between state policies facilitating different family types. We provide weak support for the idea that mothers benefit from policies that support the dual earner family. Leave arrangements increase the number of working hours of mothers in certain countries, but not in others. Public funded child care does so if a high level of workplace support is available. Child benefits, a policy facilitating the traditional male breadwinner family, have a negative effect on working hours of mothers; this is also true for the availability of part-time work, a policy facilitating the one-and-a-half-earner family. The findings are in line with the argument of Korpi (2000) and show the need to investigate the relevance of state policies separately, rather than focusing on the general supportiveness of the welfare state (see also Pettit and Hook 2005).

Thus, we find that social support from the state not only affects labor market participation of mothers as shown in previous research (Berninger 2009; Gornick, Meyers and Ross 1998; Mandel and Semyonov 2006; Pettit and Hook 2005), but also working hours of mothers. Leave arrangements and publicly funded child care increase the chance of labor market participation of mothers, and we provide some support that they are also important for their working hours in some European countries and under certain circumstances. That the effects are less strong for working hours of mothers can be related to the fact that we excluded women who do not work. In addition, child benefits are not related to labor market participation of mothers (Berninger 2009), but we show that they encourage one-and-a-half-earner families in contrast to dual-earner families. Similarly, the availability of part-time work encourages more women to enter the labor market, but our results suggest that at the same time, it lowers mothers' likelihood to work full-time. Two mechanisms may be at work here. On the one hand it is possible that a wide availability of part-time work moves mothers from full-time into smaller jobs. On the other hand it might be that the availability of part-time work brings a group of mothers into the labor force, albeit in part-time jobs, that would otherwise be non-employed. In both cases the average number of working hours of employed mothers will decrease. Both phenomena might be true and even coexist. Our results do not allow a final decision on this. Overall, these findings underlie the importance to analyze the

two decision processes (working vs. not working and working hours) separately. Both decision processes seem to be affected – and sometimes differently – by state policies.

Regarding workplace support, we conclude that it is not only relevant for employees' work-family balance (e.g. Byron 2005; Dikkers et al. 2004; Grzywacz and Butler 2005; Thomas and Ganster 1995; Valcour 2007; Van Daalen, Willemsen and Sanders 2006), but also for mothers' working hours. Giving mothers control and the flexibility to adjust to given and unpredictable demands increase their opportunities to work longer hours. The positive effect of household help by the partner and supportive family role models are in line with arguments put forward in qualitative studies on the relevance of family support (Knijn, Jönsson and Klammer 2005; Leira, Tobio and Trifiletti 2005) and results of studies in individual countries (Parish, Hao and Hogan 1991; Tijdens 1997; Van Dijk and Siegers 1998).

Our findings further indicate that the relationship between the different support sources is almost always complementary. That means that a certain type of support affects mothers' working hours, irrespective of the availability of other types of support. Publicly funded child care and supportive workplace arrangements are the exceptions. We find that publicly funded child care is only beneficial when supportive workplace arrangements are available and vice versa. One explanation might be that opening hours of child care facilities often don't match starting and finishing times of workplaces. Moreover, the availability of publicly funded child care can be seen as a precondition for the usefulness of workplace support. Child care options are needed to increase the time available to work, which can then be adapted flexibly to meet caring demands. We further find a reinforcing relationship between partners' help and supportive workplace arrangements as well as between supportive family role models and supportive workplace arrangements. A possible explanation is that women with supportive family role models have the feeling that they are allowed to use these workplace arrangements. However, taking out always one country from the analysis (Jackknife Procedure) showed that the relation between partners' help and supportive workplace arrangements as well as between supportive family role models and supportive workplace arrangements were dependent on the countries included in the model. It is possible that some countries are special cases or that 23 countries are not enough to find stable results of these reinforcing relationships. We find no evidence at all for a substitutive relationship between child care from the state and from within and outside the household. Maybe this is because people often combine formal and informal support, e.g. formal child care from the state and informal child care from the family (Knijn 2003).

Future research could investigate the policies of countries in more detail e.g. for child benefits in what period and under what conditions they are paid. There may be inconsistencies in policies between countries that are now hidden because our measures are not precise enough. There may also be inconsistencies between policies within the same country that may lead to unforeseen, not intended consequences. It should also be noted that other studies (SCP 2008; Treas and Widmer 2000; Uunk, Kalmijn and Muffels 2005) argue that other country-level characteristics (e.g. culture) help explain differences in mothers' working hours. Since an analysis involving 23 countries cannot involve too many indicators at the country level, we decided to focus on support indicators. If in the future data on more countries become available, more country-level characteristics can be considered.

Furthermore, we recommend collecting internationally comparative data that include three levels: individuals in workplaces in countries. Although this is a huge task, such data would allow not only a better test of the effect of workplace support on mothers' working hours, but on many other work outcomes as well. In a smaller effort, more extensive data on publicly funded child care could be gathered, including information about the availability and quality of child care as well as about opening hours of child care facilities. Longitudinal analysis could give more insight into the causal relationships between support and the working hours of employed mothers. This is especially relevant for those types of support that may not only cause, but also be affected by mothers' working hours.

Finally, our results have interesting implications for policy-making. The distinction between policies facilitating a dual earner and traditional male breadwinner family illustrates that although certain policies may help families financially, they are less useful in supporting working mothers. Moreover, the results imply that the combination of policies should be evaluated, since some policies can reinforce or counteract each other, depending on the family model they are facilitating.

6. Appendices

Table A: Work situation of mothers and available family and workplace support by country

		Work situation of mothers aged 18-55			Workplace support	Family support			Total N
	Women with children ≤ 12	Working	Working hours		Supportive workplace arrangements	Available care and household help outside household	Household help by partner	Supportive role models	
	% [a]	% [b]	Mean [c]	S.D.	Mean	Mean	Mean	Mean	N [c]
Austria	29.4	60.2	28.33	10.14	.23	.85	1.78	.53	150
Belgium	32.6	65.3	29.83	10.49	.08	.84	2.09	.49	124
Czech Republic	30.9	52.5	38.83	6.90	-.34	.87	1.82	.92	149
Denmark	40.2	83.7	35.03	6.81	.24	.96	2.20	.84	159
Finland	35.2	69.2	36.50	7.43	.22	.89	2.31	.86	146
France	41.2	75.8	32.13	9.39	.08	.83	1.88	.60	182
Germany	31.6	58.5	24.97	11.54	.09	.87	1.86	.58	166
Greece	32.0	38.9	37.11	12.27	-.33	.66	1.66	.60	96
Hungary	28.3	48.6	37.02	6.99	-.36	.76	1.72	.79	71
Ireland	41.1	56.2	28.17	11.03	-.14	.89	1.90	.29	190
Iceland	47.0	78.9	34.05	8.95	.30	.93	2.24	.81	75
Italy	29.1	53.9	28.94	10.65	-.34	.65	2.05	.33	76
Luxembourg	35.4	57.5	30.90	12.86	-.21	.78	1.79	.41	107
Netherlands	38.3	71.5	20.16	9.88	.28	.90	1.99	.38	176
Norway	41.0	72.7	32.25	10.03	.17	.94	2.18	.73	168
Poland	35.7	51.6	37.22	11.01	-.19	.88	2.13	.82	112
Portugal	33.7	69.9	38.21	9.29	-.40	.72	1.78	.41	160
Spain	30.5	61.8	35.14	10.63	-.05	.79	2.26	.28	102
Sweden	36.0	79.8	35.02	8.30	.16	.90	2.24	.82	166
Slovakia	33.7	53.7	39.69	7.99	-.20	.86	2.28	.86	94
Switzerland	35.1	68.1	23.56	14.69	.17	.88	1.66	.47	171
Turkey	46.2	11.0	42.86	15.88	-.29	.65	1.75	.20	40
United Kingdom	48.6	52.7	25.72	11.21	.05	.88	1.76	.64	156

Source: ESS 2004/2005; Notes: Means are calculated over all 5 imputed data sets. The standard deviation (S.D.) was calculated for each of the 5 imputed data sets. The mean of these 5 S.D. is shown in the table. [a] Percentage of all women aged 18-55.[b] Percentage of all mothers with children <=12.[c] Only working mothers with children <=12.

Table B: State support by country

	Expenditure on formal day care	Effective parental leave	Child benefits	Availability of part-time work
	% of GDP	in weeks	% increase in disposable income due to child benefits	% of men working part time (<=34 hours) in ESS 2004
Austria	.4	64	18	9.9
Belgium	.1	18	15	10.3
Czech Republic	.0	58	12	3.5
Denmark	1.7	47	8	11.4
Finland	1.2	99	9	10.2
France	.7	50	9	8.0
Germany	.4	49	12	7.9
Greece	.4	13	1	6.7
Hungary	.1	114	21	2.6
Ireland	.2	11	5	10.4
Iceland	.8	26	7	6.3
Italy	.2	24	5	11.2
Luxembourg	.4	54	17	6.1
Netherlands	.2	11	8	16.7
Norway	.8	68	8	7.4
Poland	.0	50	4	6.4
Portugal	.2	21	7	5.5
Spain	.1	50	2	5.2
Sweden	1.3	78 [a]	10	8.9
Slovakia	.1	58	10	6.7
Switzerland	.1	16	10	9.6
Turkey	.0	8	0	9.7
United Kingdom	.1	25	9	12.1

Sources: OECD 2003; OECD Family Database; Plantenga and Remery 2005; Plantenga and Siegel 2004; ESS 2004;
Notes: a) The value for Sweden is based on personal communication with Chantal Remery.

Table C1: Correlation matrix individual-level variables

	Age	Age²	Years of education	Self-employed	Number of children living at home	Age youngest child living at home	No partner	Partner does not work	Partner works: low status	Partner works: middle status	Partner works: high status	Supportive work-place arrange-ments	Help outside house-hold	House-hold help partner	Suppor-tive role models
Working hours	-.101***	.035	.008	-.138***	-.093***	-.005	.012	.046*	.026	.017	-.075***	-.057**	-.065***	.120***	.137***
Age		.018	.095***	.005	.292***	.526***	.023	-.023	-.065***	-.045*	.102***	.121***	-.116***	-.034	-.104***
Age2			-.048**	-.006	-.135***	.016	.054**	.067***	.018	-.046*	-.047*	-.052**	-.058**	.013	.011
Years of education				-.030	-.045*	-.107***	-.039*	-.048*	-.196***	-.035	.284***	.189***	.090***	.141***	.118***
Self-Employed					.069***	-.057**	-.089***	-.022	.026	.014	.041*	.444***	.024	-.071***	-.028
Number of children living at home						.073***	-.102***	-.003	.062***	-.005	.029	.045*	-.045*	-.024	-.048**
Age youngest child living at home							.172***	-.027	-.022	-.016	-.090***	-.029	-.077***	-.109***	-.016
No partner								-.098***	-.249***	-.264***	-.258***	-.066***	-.002	-.377***	-.003
Partner does not work									-.134***	-.142***	-.138***	-.062***	-.067***	.162***	.004
Partner works: low status										-.359***	-.351***	-.056**	-.031	.027	-.059**
Partner works: middle status											-.372***	.006	.023	.076***	.011
Partner works: high status												.134***	.043*	.124***	.047*
Supportive work-place arrange-ments													.083***	.031	.077***
Help outside household														-.001	.066***
Household help partner															.055**

Source: ESS 2004/2005; Notes: *p < .05 **p < .01 ***p < .001; Average results over 5 imputed data sets.

Table C2: Correlation matrix – country-level variables

	Parental leave	Child benefits	Availability of part-time work
Publicly funded child care	.36	.02	.18
Parental leave		.55**	-.44*
Child benefits			-.18

Sources: OECD 2003; OECD Family Database; Plantenga and Remery 2005; Plantenga and Siegel 2004; ESS 2004

Notes: *p < .05 **p < .01 ***p < .001

Table D1: Testing for influential countries

	Dir. hyp.	All countries	Without Austria	Without Belgium	Without Czech Rep.	Without Denmark	Without Finland	Without France	Without Germany
Constant		34.483***	34.521***	34.379***	34.306***	34.704***	34.551***	34.774***	34.439***
Control Variables									
Age		-.082*	-.089*	-.080*	-.072	-.079*	-.075	-.083*	-.095*
Age²		.002	.000	.002	.002	.002	.001	.003	.001
Years of education		-.008	-.004	-.050	.003	-.014	-.002	-.008	-.011
Self-Employed or working for own family business		-2.483**	-2.295*	-2.011	-2.434**	-2.529**	-2.594**	-2.472**	-2.186*
Number of children living at home		-.913**	-.900**	-.884**	-.972***	-1.006***	-.952**	-.906**	-.842**
Age youngest child		.055	.056	.055	.043	.046	.024	.059	.058
Partner situation (no partner):									
Partner does not work		-.861	-.556	-.563	-1.171	-.732	-1.036	-1.204	-.452
Partner works: low status		-1.205	-.998	-1.339	-1.216	-1.391	-1.403	-1.267	-.955
Partner works: middle status		-1.289	-1.204	-1.381	-1.419	-1.339	-1.502*	-1.649*	-1.225
Partner works: high status		-2.473**	-2.219**	-2.628**	-2.631**	-2.677**	-2.731**	-2.719**	-2.215**
State Support									
Publicly funded child care	+	.609	.701	.657	.269	.910	.386	1.099	.768
Parental leave	+	.038	.038	.059°	.044	.039	.015	.036	.034
Child benefits	-	-.451*	-.485*	-.556**	-.457**	-.479*	-.381*	-.447*	-.424*
Availability of part-time work	-	-1.125***	-1.156***	-1.124***	-1.091***	-1.111***	-1.243***	-1.140***	-1.147***
Workplace Support									
Supp. workplace arrangements	+	-.127	-.213	-.412	-.115	-.082	-.024	-.107	-.277
Family Support									
Care and household help outside household	+	-1.341	-1.265	-1.177	-1.362	-1.658	-1.313	-1.565	-1.171
Household help partner	+	1.097***	1.037***	1.137***	1.166***	1.125***	1.133***	1.185***	1.045***
Supportive role models	+	.964**	.883*	.945**	.911**	1.011**	.895**	1.067**	.973**
Interaction effects									
Supportive role models_Workplace support	+	1.166*	1.206*	1.264*	1.182*	1.208*	1.080°	1.173°	1.264*
Public funded childcare_Workplace support	+	.927*	.871*	.983*	.855*	1.130*	.969*	.850*	.881*
Household help partner_Workplace support	+								.334°
Random part									
Level 1: Individuals									
Variance first level		99.630	100.098	99.683	102.279	102.565	101.782	100.282	98.596
Level 2: Country									
Variance second level		8.879	9.207	8.287	9.379	9.001	8.813	9.051	7.535

Source: ESS 2004/2005

Notes: a) °p < .1 *p < .05 **p < .01 ***p < .001; One-sided test for theoretically important variables (Dir. hyp. = Directed hypothesis); b) Continuous variables were centered around the mean; c) Only significant interactions are shown. Other interaction-effects are included in the models but not shown; d) The effects of workplace and family support are allowed to vary between individuals in different countries (random slope) in order to calculate cross-level interactions between the individual and country level.

Table D2: Testing for influential countries

	Dir. hyp.	**Without Greece**	**Without Hungary**	**Without Iceland**	**Without Ireland**	**Without Italy**	**Without Luxemb.**	**Without Netherland**	**Without Norway**
Constant		34.374***	34.410***	34.544***	35.079***	34.825***	34.137***	34.895***	34.276***
Control Variables									
Age		-.072*	-.082*	-.082*	-.098**	-.082*	-.102**	-0.088*	-.081*
Age²		.002	.003	.003	.003	.003	.001	0.003	.002
Years of education		.017	-.008	-.012	-.029	.008	-.011	-0.021	-.042
Self-Employed or working for own family business		-2.740**	-2.459**	-2.576**	-2.485**	-2.467**	-2.834***	-1.996*	-2.736**
Number of children living at home		-.933**	-.915**	-.892**	-.752**	-.869**	-1.009***	-0.831**	-0.899**
Age youngest child		.041	.051	.050	.065	.066	.081	0.066	0.052
Partner situation (no partner):									
Partner does not work		-.879	-.929	-.911	-1.155	-.900	-.549	-1.093	-0.799
Partner works: low status		-1.252	-1.201	-1.163	-1.615*	-1.209	-.896	-1.103	-1.216
Partner works: middle status		-1.400	-1.261	-1.277	-1.400	-1.411	-.931	-1.116	-1.102
Partner works: high status		-2.559**	-2.492**	-2.571**	-2.506**	-2.491**	-1.996**	-2.425**	-2.461**
State Support									
Publicly funded child care	+	.245	.133	1.525	.704	.219	.810	0.432	0.623
Parental leave	+	.045	.048	.023	.022	.038	.035	0.038	0.040
Child benefits	-	-.428*	-.452*	-.431*	-.467*	-.485*	-.474*	-0.463*	-0.477*
Availability of part-time work	-	-1.093***	-1.123***	-1.216***	-1.118***	-1.074***	-1.103***	-1.040***	-1.123***
Workplace Support									
Supp. workplace arrangements	+	-.111	-.020	-.165	.042	-.028	-.235	-0.085	0.027
Family Support									
Care and household help outside household	+	-1.265	-1.330	-1.374	-1.615	-1.623	-1.199	-1.285	-1.302
Household help partner	+	1.077***	1.092***	1.076***	1.106***	1.109***	1.085***	1.028***	1.080***
Supportive role models	+	.977**	.917**	.943**	.903*	.990**	1.028**	0.848*	1.173**
Interaction effects									
Supportive role models_Workplace support	+	1.345*	1.164*	1.252*	.721	1.139°	1.353*	1.036°	1.180*
Public funded childcare_Workplace support	+	.823*	.684°	1.009*	.960*	.911*	1.011**	0.997*	0.863*
Random part									
Level 1: Individuals									
Variance first level		97.993	100.965	100.112	98.780	99.459	97.374	100.464	99.631
Level 2: Country									
Variance second level		9.400	9.428	8.962	8.849	9.106	9.074	9.297	8.769

Source: ESS 2004/2005

Notes: a) °p < .1 *p < .05 **p < .01 ***p <.001; One-sided test for theoretically important variables (Dir. hyp. = Directed hypothesis); b) Continuous variables were centered around the mean. c) Only significant interactions are shown. Other interaction-effects are included in the models but not shown. d) The effects of workplace and family support are allowed to vary between individuals in different countries (random slope) in order to calculate cross-level interactions between the individual and country level. e) The results for the analysis without the Netherlands are based on four imputed data sets due convergence problems, which are likely if random slopes have small variances (Muthén and Muthén 2010:416).

Table D3: Testing for influential countries

	Dir. hyp.	Without Poland	Without Portugal	Without Slovakia	Without Spain	Without Sweden	Without Switzerland	Without Turkey	Without UK
Constant		34.603***	34.265***	34.209***	34.293***	34.243***	34.531***	33.875***	34.582***
Control Variables									
Age		-.088*	-0.078*	-.085*	-.073*	-.077*	-.081*	-.076*	-.075*
Age²		.003	.001	.003	.002	.002	.003	.002	.002
Years of education		.027	0.038	-.008	-.017	-.011	-.005	-.002	-.019
Self-Employed or working for own family business		-2.521**	-2.580**	-2.591**	-2.590**	-2.393**	-2.373**	-2.455**	-2.286*
Number of children living at home		-.939**	-0.987***	-.945**	-.962***	-.919**	-.903**	-.959**	-.878**
Age youngest child		.042	0.052	.059	.061	.059	.078	.070	.034
Partner situation (No partner)									
Partner does not work		-1.259	-0.775	-1.201	-.837	-.917	-.736	-.849	-.305
Partner works: low status		-1.411	-1.312	-1.149	-1.059	-1.189	-1.326	-1.155	-.998
Partner works: middle status		-1.415	-1.205	-1.135	-1.287	-1.396	-1.241	-1.288	-1.112
Partner works: high status		-2.599**	-2.470**	-2.416**	-2.464**	-2.649**	-2.363**	-2.344**	-2.283**
State Support									
Publicly funded child care	+	-.224	0.283	.977	-.123	-.247	.691	2.266°	.342
Parental leave	+	.048	0.050°	.032	.054°	.036	.041	.030	.040
Child benefits	-	-.462*	-0.453*	-.428*	-.563*	-.446*	-.449*	-.242*	-.445*
Availability of part-time work	-	-1.129***	-1.051***	-1.131***	-1.159***	-1.127***	-1.121***	-1.222***	-1.061***
Workplace Support									
Supportive workplace arrangements	+	.294	-0.015	-.253	-.180	-.252	.040	-.280	-.648
Family Support									
Care and household help outside household	+	-1.475	-1.379	-1.325	-1.330	-1.239	-1.029	-1.205	-1.268
Household help Partner	+	1.122***	1.137***	1.131***	1.087***	1.126***	1.043***	1.117***	1.036***
Supportive role models	+	.828*	1.029**	.842*	1.009**	1.052**	1.061**	1.105	.887*
Interaction effects									
Supportive role models_Workplace support	+	1.240*	1.126°	1.167*	1.094°	1.170*	.835	1.105°	1.479**
Public funded childcare_Workplace support	+	.797*	0.878*	.993*	.980*	.996*	.915*	.964*	.978*
Random part									
Level 1: Individuals									
Variance first level		98.742	100.392	100.720	99.179	101.484	93.494	97.606	98.802
Level 2: Country									
Variance second level		9.579	9.415	8.248	8.404	9.184	9.164	3.971	9.128

Source: ESS 2004/2005

Notes: a) °p < .1 *p < .05 **p < .01 ***p <.001; One-sided test for theoretically important variables (Dir. hyp. = Directed hypothesis); b) Continuous variables were centered around the mean. c) Only significant interactions are shown. Other interaction-effects are included in the models but not shown. d) The effects of workplace and family support are allowed to vary between individuals in different countries (random slope) in order to calculate cross-level interactions between the individual and country level. e) The results for the analysis without Portugal are based on four imputed data sets due convergence problems, which are likely if random slopes have small variances (Muthén and Muthén 2010:416).

Chapter III: The Parity Penalty in Life Course Perspective. Motherhood and Occupational Status in 13 European Countries[7]

[7] This chapter is co-authored by Judith Treas and Matt Huffman and is currently under review.

1. Introduction

Occupational status increases over one's career, driven by a quest for greater job rewards (Maume 1999; Rosenfeld 1992), returns to human capital accumulation (Becker 1975; Mincer and Polachek 1974), and organizational mechanisms such as seniority rules and career ladders (Maume 1999; Rosenfeld 1992). Because women are largely responsible for household and caring tasks (Treas and Drobnič 2010), their career trajectories are also related to their family situations, including changes occasioned by the birth of a child. For example, motherhood may hinder moves to jobs with higher occupational status or prompt shifts to less demanding, lower-status jobs (Dex, Ward and Joshi 2008). Following life course paradigms, a birth is not only an event demanding immediate occupational adjustments. It is also the precipitator of a life status, motherhood, which affects occupational status developments over an extended career (Elder and Giele 2009a).

Empirically, the family is linked to labor market outcomes in the growing body of survey and experimental research demonstrating a wage penalty associated with motherhood (e.g. Budig and England 2001; Budig and Hodges 2010; Correll, Benard and Paik 2007; Gangl and Ziefle 2009; Rippeyoung, Noonan and Mary 2012). In Norway and the U.K., the motherhood wage penalty is due, in part, to the sorting of mothers and non-mothers into different occupations rather than to pay differentials within occupations (Gangl and Ziefle 2009; Petersen, Penner and Høgsnes 2010). In the U.S., the findings are mixed on whether job shifts into more poorly paid, "mother-friendly" occupations account for the motherhood wage penalty (Budig and England 2001; Budig and Hodges 2010; Gangl and Ziefle 2009). Although the wage penalty seems to work partly through occupational sorting, we know little about how motherhood affects occupational status trajectories, particularly in terms of long-run consequences over women's careers.

Focusing on occupational status directs attention to considerations (e.g., the convenience of part-time work) that may lead mothers to accept jobs with lower wages or prestige. Although changes in working hours help explain the motherhood wage penalty in the U.S. (Budig and England 2001; Waldfogel 1997), it is unclear whether this is due to the lower pay of part-time work within occupations or to moves to lower-status occupations that, say, offer part-time jobs. Similarly, the labor force withdrawals that partly explain the motherhood wage penalty (Budig and England 2001; Budig and Hodges 2010; Staff and Mortimer 2012; Waldfogel 1997) may work by hindering income increases within an occupation or by leading to an occupation with lower pay at re-entry. If only because occupations are apt to be

implicated in the maternal wage penalty, attention to occupational status developments is overdue in research on the motherhood penalty. Particularly if motherhood involves a long-run, rather than short-term, penalty for the status of women's paid work, this finding would broaden the concern with mothers' employment disadvantage to job-related status rewards that are not strictly pecuniary (Ganzeboom, de Graaf and Treiman 1992).

Motivated by a life course perspective on family dynamics and labor market outcomes, we draw on theories of human capital depreciation, occupational adjustment, and employer and institutionalized discrimination to explain the association between motherhood and occupational status developments over the life course. Based on these theoretical insights, we formulate and test a set of original hypotheses linking births to women's occupational trajectories over a critical segment of the career. Our analysis is based on the richest available data, the European Community and Household Panel (ECHP), which includes thirteen European countries and eight time points between 1994 and 2001. Including occupational and birth histories that predate the survey, we can study the long-run implications of motherhood over nearly a quarter century for some women. We focus on occupational status changes measured by the International Socio-Economic Index (ISEI) (Ganzeboom et al. 1992; Ganzeboom, de Graaf and Treiman 1992). Applying a stringent fixed effects approach to panel data, we evaluate the occupational status penalty over an extended period, while controlling for unobserved heterogeneity, which biases results if important, unmeasured factors are omitted from analysis. This allows us to address critical unanswered questions about whether women can overcome the motherhood penalty over time or whether negative consequences of motherhood compound over a career.

At the national level, countries differ with respect to their motherhood wage penalty (Misra, Budig and Moller 2007; Sigle-Rushton and Waldfogel 2007), and national policies shape gender inequalities in the labor market (e.g Gornick, Meyers and Ross 1998; Mandel and Semyonov 2006; Uunk, Kalmijn and Muffels 2005). Moreover, the motherhood penalty may vary over time as in the case of Norway where new policies seem to have decreased the maternal wage effect (Petersen, Penner and Høgsnes 2010). Given these issues, we capitalize on the cross-national ECHP data to produce new evidence on whether national-level policies can mitigate negative occupational outcomes associated with motherhood.

Expanding prior research on the motherhood penalty (e.g. Aisenbrey, Evertsson and Grunow 2009; Dex, Ward and Joshi 2008; Grunow, Hofmeister and Buchholz 2006), we make four major contributions. First, we demonstrate the implications of motherhood for

another job reward – occupational status. Second, addressing the efficacy of work-family integration strategies within couples that women use to mitigate the career costs of motherhood, we test theoretically-motivated hypotheses on whether the motherhood penalty differs by parity between first and higher-order births. Third, by explicitly recognizing the life course dimension of occupational attainment, we evaluate outcomes over a longer term to determine whether occupational status eventually rebounds from the immediate impact of a birth or suffers an enduring or even increasing penalty. And, relatedly, we test whether the timing of a birth in the mother's life course matters for her occupational status. Fourth, by exploiting unique cross-national data, we show the importance of country context for women's careers by evaluating two public policies hypothesized to be consequential for the long-run motherhood penalty on women's occupational achievement.

2. Theory and hypotheses

2.1 Motherhood and occupational status developments

Supply-side theories emphasize the career costs associated with mothers' employment behavior. Demand-side theories stress the costs arising from workplace discrimination against mothers. Both perspectives predict that a birth will depress a woman's occupational status. Prior research, while limited, is consistent with this expectation (Aisenbrey, Evertsson and Grunow 2009; Benard and Correll 2010; Correll, Benard and Paik 2007; Dex, Ward and Joshi 2008; Jacobs 1999). Of interest to us are the long-term life course implications of births and motherhood for women's careers. Supply-side theories allow for the long-run possibility that mothers can overcome the early career damage from having children. Demand-side arguments imply a less optimistic prognosis.

Following supply-side theories, motherhood retards occupational status by limiting human capital accumulation and, thus, job productivity (Filer 1985; Mincer and Polachek 1974). Employers hire and promote workers with employment experience and on the-job-training (Rosenbaum 1979a). Employment interruptions or periods of part-time work depress mothers' occupational gains, by fostering depreciation of employment skills and slowing the acquisition of job experience (Mincer and Polachek 1974; Abendroth, Maas, and Van der Lippe 2011). Mothers are, indeed, more likely to work reduced hours (e.g. Rosenfeld and Birkelund 1995; Uunk, Kalmijn and Muffels 2005; Van der Lippe 2001) and to interrupt employment, a practice institutionalized with maternal leaves (Baum 2002; Bruning and Plantenga 1999; Klerman and Leibowitz 1994). Often providing public childcare and leave

arrangements (Plantenga and Remery 2005), advanced industrialized countries approve of mothers' returns to employment, particularly when children are in school or grown (Treas and Widmer 2000; Waldfogel, Higuchi and Abe 1999). Whether mothers can make up for earlier human capital losses later in the career is an open question.

Focusing on women's preferences, another supply-side explanation emphasizes occupational adjustments or "compensating differentials" (Filer 1985). In other words, mothers accept lower-status occupations to secure jobs which, being less demanding or part-time, mesh better with family commitments. This argument suggests a retreat around the time of a birth from higher-status occupations involving longer hours and greater responsibilities, albeit perhaps having greater flexibility to balance work and family life (Blank 1990). The empirical evidence is inconclusive. It is uncertain whether mothers' occupations are actually less demanding and whether occupational adjustments drive the wage penalty (Budig and England 2001; Desai and Waite 1991; Glass 1990; Okamoto and England 1999).

Whether due to human capital or occupational adjustment mechanisms, career interruptions due to childcare demands do lead to lower occupational status when women return to work after a birth (Aisenbrey, Evertsson and Grunow 2009; Dex, Ward and Joshi 2008; Grunow, Hofmeister and Buchholz 2006; Staff and Mortimer 2012), especially if they take a part-time job (Dex, Ward and Joshi 2008). Jacobs (1999) reports an upward trajectory in British women's occupational status over time, but a decline for mothers employed part-time. As Blackwell (2001) confirms, changes from full-time to part-time work are linked with downward mobility. Occupational adjustments toward less demanding work are apt to occur around the time of a birth when the challenges of integrating work and family life peak (Byron 2005). As children age, women may advance their careers by working longer hours, taking on more responsibility, and pursuing on-the-job training. According to research on occupational status before and after a birth, there is an occupational status penalty around the time of birth (e.g. Aisenbrey, Evertsson and Grunow 2009; Grunow, Hofmeister and Buchholz 2006; Smeaton 2006), but few studies address the long-term occupational consequences of motherhood (Dex, Ward and Joshi 2008). Moreover, wages before and after birth do not indicate whether the penalty is especially high around the time of a birth but declines as a child grows older (Budig and England 2001; Budig and Hodges 2010; Waldfogel 1997). From the supply-side perspective, studies of the motherhood penalty may overstate the career effects of motherhood if they consider only the immediate consequences of a birth, ignoring the longer term implications.

Both human capital and occupational adjustment arguments imply that the penalty to motherhood will peak around the time of a birth, when work-family issues are most intense. Theoretically, both supply-side explanations allow for some rebound in occupational status with the passage of time. As children grow older and household responsibilities diminish, mothers are better positioned to intensify their work effort, augment job skills and experience, and shift to more demanding and higher-status work (Anderson, Binder and Krause 2003).

Demand-side arguments offer an alternative explanation: mothers are less likely than childless women to work in high status occupations, because employers view them as less productive, committed, and competent (Correll, Benard and Paik 2007; England 2010). Even if mothers' higher household demands do not affect their work, motherhood is a generalized status characteristic which impacts performance expectations due to perceived conflicts between maternal and work roles (Ridgeway 1997). These perceptions may be triggered by the birth of a child or by simply having small children at home (Budig and England 2001; Gangl and Ziefle 2009). Varying the motherhood status of hypothetical job applicants, experiments document discrimination against mothers (Benard and Correll 2010; Correll, Benard and Paik 2007). Survey results also attribute the negative association between births and wages (net of human capital) to employer discrimination (Budig and England 2001; Gangl and Ziefle 2009; Waldfogel 1997).

Even if employers' perceptions of mothers were not prejudicial, institutionalized discrimination would impede their career progress. The clockwork of male careers is a poor fit with women's family responsibilities (Hochschild 1975). Occupations are age-graded (Lawrence 1984; Warr and Pennington 1994), and early career mobility is important for later career advancement (Heinz et al. 2005; Rosenbaum 1979b). By the time a mother is in a position to put work first, she may have missed the chance to be labeled a "fast-track" employee, sat out the qualifying rounds in workplace contests of tournament mobility, and missed the normative deadlines (formal and informal) for training and promotion. Foregone opportunities are often lost forever, and occupational disadvantages cumulate over a career (Dannefer 1987).

In contrast to supply-side arguments, demand-side arguments on employer and institutionalized discrimination imply the cumulation of long-run costs to motherhood, even after children have grown older and less demanding. Borrowing life course terminology, motherhood would be described as a status with long-term consequences, rather than a transition with short-term implications. If motherhood is a generalized status characteristic, it

may constitute a spoiled identity (Goffman 1963), forever branding a woman in the eyes of employers as less able, committed, hirable, and promotable. If motherhood sidelines women even briefly at critical career junctures, there may be no institutionalized roads back from the "mommy track" to the career ladder. In contrast to supply-side arguments, demand-side theories predict no rebound in occupational status after a birth. In fact, the negative consequences of motherhood will increase in the long term due to the cumulative effects of foregone opportunities and missed promotions. Empirical evidence on longer-run effects of motherhood provides no definitive answer on whether occupational status will rebound or continue to decline. Comparing the occupation following the first return to work after a birth with the most recent occupation, Dex, Ward and Joshi (2008) find downward occupational mobility, which suggests a lingering negative effect of motherhood for long-run careers. For earnings, however, support for a rebound is seen in the finding that longer career interruptions are more negative for initial career re-entries than they are for longer-term wage prospects (Baum 2002) and that older children cause a smaller motherhood wage penalty than younger children (Anderson, Binder and Krause 2003).

The supply-side and demand-side arguments justify alternative hypotheses regarding the longer-run implications of motherhood for women's occupational status. First, we hypothesize:

H1A: The motherhood penalty to occupational status will decrease over a woman's career (*Supply-side rebound hypothesis*).

In contrast, demand-side arguments predict that the motherhood penalty will grow stronger. Thus, we hypothesize:

H1B: The motherhood penalty to occupational status will increase over a woman's career (*Demand-side cumulative disadvantage hypothesis*).

2.2 Parity and timing considerations

The magnitude of the motherhood penalty likely depends on parity. The wage penalty increases with the number of children (Petersen, Penner and Høgsnes 2010; Taniguchi 1999; Waldfogel 1997). Women with more children at home also have a higher risk of downward occupational mobility when they return to work after an employment interruption (Aisenbrey,

Evertsson and Grunow 2009). Studies do not address whether the career costs to each birth are the same, but we would expect the marginal career costs to higher-order births to be smaller than for the first birth. The major occupational adjustments will likely be made at the first birth when childcare responsibilities first arise. Similarly, employers may well stereotype a mother as a deficient worker when the first child is born with additional children having little effect on this perception. If a higher-order birth leads to additional depreciation of human capital, we might expect some status loss, but the consequences should be less dramatic than for a first birth. Thus, we hypothesize:

H2: The motherhood penalty will be larger for the first birth than for higher order births (*Declining penalty with parity hypothesis*).

According to the life course paradigm, the significance of an event depends on when in the life course it occurs (Elder and Giele 2009a). As women increasingly delay childbirth (Mills et al. 2011), the timing of a birth in a woman's career may well determine its effect on her occupational status trajectory. A stiffer penalty might be expected for early motherhood, because it coincides with the critical career-building stage. Women who opt to delay childbirth will have accumulated, on average, more work experience and will have more established careers (Esping-Andersen 2009; Taniguchi 1999). Moreover, employers can use information on previous performance (rather than motherhood *per se*) to make inferences about the future productivity of late child-bearers with established careers. Women who had children earlier do seem to experience a higher wage penalty than do late child-bearers (Taniguchi 1999; Miller 2011). Furthermore, Americans and Germans who had a birth in their 30s showed fewer occupational status losses than those who gave birth in their 20s (Aisenbrey, Evertsson and Grunow 2009). Therefore, we anticipate:

H3: The motherhood penalty for a birth at older ages will be smaller than at younger ages (*Young mother penalty hypothesis*).

In addition, parity effects should differ by the mother's age at the birth. We would expect the beneficial career effect of deferring a birth to an older age to be greater for the first birth than for higher order births. The later the first birth in the woman's life course, the longer her period of uninterrupted human capital accumulation and job experience will be.

Given a later first birth, a woman is more likely to have achieved a springboard job offering further advancement and to have established a positive reputation as a worker (untainted by negative performance expectations for mothers). Net of first birth timing, higher-order births at older ages may have a particularly pernicious effect on mothers' career achievements. At a time when the demands of older children are lessening, higher-order late births reset the clock on intensive mothering responsibilities, requiring occupational adjustments and reminding employers of a woman's master status as a mother.

2.3 Country-level differences

Countries differ in institutional context. Among the 13 countries we study, women's labor force participation ranges from 44 percent in Italy to 75 percent in Denmark (Table 1). Part-time employment ranges from 13 percent in Finland and Greece to 56 percent in the Netherlands. The occupational disadvantage for mothers compared to non-mothers ranges from a scant .28 occupational status points in Denmark to 7 points in Portugal. According to welfare state typologies (Esping-Andersen 1990, 1999) and to cross-national analyses of female employment (Gornick and Meyers 2008; Stier, Lewin-Epstein and Braun 2001), the state provides key support for employed mothers by implementing social policies that assist women in reconciling paid and unpaid work. Petersen, Penner and Høgsnes (2010) argue that the historical decrease in the motherhood wage penalty in Norway is likely due to the development of family-friendly policies, which reduce mothers' human capital depreciation by promoting their employment. Data for 10 countries confirm that the motherhood wage penalty is the smallest in the Scandinavian countries, where highly supportive state policies encourage women's paid work (Misra, Budig and Moller 2007).

Esping-Andersen (2009) points to the need for family-friendly policies which "defamilialize" caring responsibilities, allowing women to have children without sacrificing careers. Gornick and Meyers (2008) stress the relevance of early education and child care policies, which permit couples to share caregiving and breadwinning responsibilities. With implications for the degree of job skill depreciation, public child care reduces the negative effect of a birth on mothers' working hours (Uunk, Kalmijn and Muffels 2005). Following the adjustment argument, public-funded child care mitigates pressures on women to switch to lower-status, part-time employment to accommodate children's needs for care. If public child care promotes maternal employment, as argued by Sigle-Rushton and Waldfogel (2007), mothers should see less human capital depreciation and, thus, experience less downward occupational mobility.

Table 1: Country-level descriptive statistics

	Occupational status differences mothers vs. non-mothers	Public expenditures in kind: day care and home help service	Public cash benefits to family: family allowances; maternity, parental leave; other cash benefits	Total fertility rate	Women's part-time employment in %	Female labor force participation in %
	Mean difference; Average 1994-2001	% of GDP; Average 1994-2001	% of GDP; Average 1994-2001	Average 1994-2001	Average 1994-2001	Average 1994-2001
Austria	-5.07	0.38	2.45	1.39	23	62
Belgium	-1.17	0.35	1.99	1.63	32	54
Denmark	-0.28	1.81	1.62	1.76	24	75
Finland	-2.91	1.06	2.19	1.76	13	71
France	-2.36	0.93	1.53	1.77	25	61
Germany	-2.36	0.36	1.34	1.33	32	62
Greece	-5.77	0.14	0.69	1.30	13	47
Ireland	-0.94	0.13	1.63	1.91	30	52
Italy	-1.22	0.32	0.48	1.23	22	44
Netherland	-3.63	0.55	0.83	1.61	56	62
Portugal	-7.07	0.15	0.60	1.47	15	62
Spain	-1.80	0.23	0.29	1.19	16	50
UK	-4.88	0.46	1.78	1.69	41	68

Sources: ECHP and OECD Statistics 2012

Notes: a) The mean occupational status differences between mothers and non-mothers are calculated for every year of the survey;
b) UK public expenditures in kind for the years 1994 and 1995 imputed with information for 1996; c) Austrian part-time employment average for 1995-2001

From a demand-side perspective, public childcare might also reduce discrimination against mothers by countering expectations that childcare problems will negatively affect their job performance. Following supply-side and demand-side theories, the motherhood penalty will be smaller where states provide public childcare.

We do not anticipate that country-to-country differences in state spending on child care will have much effect on occupational status around the time of the birth when mothers are most likely to stay home anyway to care for newborns. They return to work as the child gets older. Thus, there will be less cross-national variation in work status of mothers who have recently had a birth, as compared to those for whom more time has passed and for whom parental leave and child care policies will be more relevant. Therefore, our theoretical expectations focus on longer-term implications as the children grow old enough to enter child care and as cumulative career costs mount.

H5: The long-run occupational status penalty to a birth will be smaller where states spend more on public childcare *(Childcare hypothesis).*

While family-friendly in their intent, other state policies may increase the motherhood penalty, particularly they reduce mothers' labor supply. If they encourage mothers to interrupt employment or to work part-time rather than full-time (Abendroth, Van der Lippe and Maas 2012; Korpi 2000), policies may translate into greater human capital depreciation and lost promotional opportunities, particularly in age-graded employment systems. Thus, they may work against upward occupational mobility. As Mandel and Semyonov (2006) report, a woman's likelihood of holding a management position is lower in countries with well-developed, female-friendly policies. Their likelihood of working in a female-typed occupation is higher. Family cash benefits reduce economic incentives for mothers to work for pay while allowing them to spend more time with their children. Indeed, child benefits partly offset the income losses due to part-time work (Rosenfeld and Birkelund 1995). Furthermore, cash transfers allowing mothers to stay home give greater visibility to the maternal role, which employers assume compromises job performance. Thus, transfers may inadvertently trigger employer discrimination against mothers (Mandel and Semyonov 2006; Mandel and Shalev 2009). If family allowances are one expression of a broader ideological system of beliefs about motherhood, we would expect the motherhood penalty to persist over the career. Thus, both supply-side and demand-side arguments lead to the same hypothesis.

H6: The long-run occupational status penalty to a birth will be greater where states spend more on family cash benefits *(Cash benefit hypothesis).*

Summarizing arguments on country-level policy predictors of the motherhood penalty, supply-side and demand-side arguments anticipate that public child care will minimize the long-run occupational penalty by promoting more continuous and full-time employment and minimizing employer discrimination. Both theories suggest family allowances will be associated with larger occupational penalties for mothers, because cash benefits reduce mothers' labor supply and to promote discrimination against mothers.

3. Data and Methods

3.1 Data

We test our hypotheses by analyzing the representative national samples from the European Community and Household Panel (ECHP) (Eurostat 1996; Verma and Clémeanceau 1996). The ECHP is a unique, multi-country survey recording individual and household information over eight waves (1994-2001). We analyze data for Austria (1995-2001 only), Belgium, Denmark, Finland (1996-2001), France, Germany (German Socio-Economic Panel Study), Greece, Ireland, Italy, the Netherlands, Portugal, Spain and the UK (British Household Panel Study). For 1994-2001, all countries were characterized by low total fertility rates ranging from 1.19 in Spain to 1.91 in Ireland (Table 1). Although strict access protocols have limited their use in cross-national analyses, these data are ideally suited to testing our hypotheses, because they provide observations on women's occupations at multiple time points, as well as information on motherhood transitions and status, including parity-specific births and their timing. Our analysis focuses on women, ages 18-40 when first observed in the survey, employed, and living in a couple household. Sample restrictions and missing data resulted in information on 12,997 women in 13 countries (see Appendix A). Women average over five observations each for a total of 68,111 person-years of data.

3.2 Measurement

Dependent Variable. Occupational status is observed over the eight years of the survey. It is measured with the International Socio-Economic Index (ISEI) (Ganzeboom, de Graaf and

Treiman 1992), as based on the woman's two-digit code in the International Standard Classification of Occupations (ISCO). In the sample, occupational status ranges from 16 to 74.5. The mean ISEI value is assigned for the few categories of the two-digit ISCO codes that ECHP combined for confidentiality reasons. When not currently working, respondents were assigned their most recent occupational status score, a necessary approach that may underestimate status penalties, because women out of the labor force with a birth do not register the immediate status loss they might face if they had to work.

Motherhood Independent Variables. We reconstruct fertility histories based on information on births during the survey and children living in the household at the first observation. There are two time-varying, independent variables for motherhood.

Parity-specific births are measured by three dummy variables indicating that the woman has a first, a second, or a third child born during the survey (We do not consider the 1 percent of births that were fourth or higher-order). To ascertain the birth-order for a child born during the survey, we consider not only this child and others born during the survey, but also older children present when the household was first observed. A parity-specific dummy is set to one if the woman has a child of that birth order and zero otherwise. Thus, the third child indicator captures the association of a third birth with occupational status, given the first two births and compared to the situation without a third child.

Second, parity-specific *time since birth* is recorded in years for the first, second, and third child born before or during the survey. This variable indicates whether the effect on a woman's career for a child of given parity remains constant, increases, or decreases as the child grows older. Time since birth is calculated from the age of the child when first observed. Thus, we know whether a birth has negative consequences for occupational status developments in the long-run (i.e., for as much as 24 years following a birth in the case of a mother who has a 17-year-old child in the first wave and participates in all eight surveys). Time since birth is set to one initially for children born during the survey and updated annually thereafter. For women without children, time since birth is set to zero.

Woman's *age* and *age-squared* are time-varying variables which control for the underlying time trajectory for all women's occupational status. To test for timing-of-birth differences in the motherhood penalty, we evaluate interactions between the time-invariant mother's age at a given birth and the time-varying child parity. We calculate mother's age (in years) at the birth of the first, second and third child. Age at birth receives the mean value of age at birth if no birth was observed.

Motherhood Penalty Mechanisms. Although the data do not allow us to evaluate directly the demand-side discrimination explanations for the motherhood penalty, time-varying indicators speak to the supply-side mechanisms. Top coded at 70, total weekly *working hours* reflect human capital accumulation and occupational adjustments. If the woman is not employed, hours are set to her previous working hours. *Work experience* equals the woman's age at the time of the survey minus her age at the start of her first job. We adjusted work experience for career interruptions during the survey and the five years before the survey: (1) Survey years in which the woman was not employed were subtracted from the years since the woman started her first job; (2) For non-employment spells of one year or less before the survey, a single year was subtracted; (3) If, during the five years before the survey, the woman reported a non-employment spell longer than one year, two years were subtracted.

Descriptive statistics averaged over the waves appear in Table 2. At the first observation, the average respondent is 32 years old. Fully 80 percent of respondents have ever given birth to a child in the couple household. On average, the women were 26 years old when they had their first birth. During the survey itself, 13 percent of women report having a first birth, 12 percent a second, and 4 percent a third.

Country context. Two time-varying variables are available for each country in every year of the survey (OECD Statistics 2012). To measure policies facilitating maternal employment, we use *public expenditures on formal day child care and home help services* as a percent of GDP. To measure policies enabling mothers to forego employment (or at least full-time employment), we use *public cash benefits to the family* as a percentage of GDP. This variable includes child benefits, leave benefits and other cash benefits. Although supportive leave arrangements encourage women to return to the labor market after a birth (Waldfogel, Higuchi and Abe 1999) and may encourage earlier returns protecting against the loss of human capital (Sigle-Rushton and Waldfogel 2007), leaves permit longer career interruptions (Pettit and Hook 2005), which have negative implications for occupational advancement. Therefore, we classify leave expenditures with other family cash transfer policies reducing women's human capital accumulation. Table 1, summarizing the indicators for the state policies, shows marked country-to-country differences in expenditures. Day care spending ranges from .13 percent of GDP in Ireland to 1.81 percent in Denmark. Family cash benefits range from .29 percent in Spain to 2.45 in Austria.

The interaction between a country-level expenditure variable and a parity-specific birth assesses whether the country context has an impact on the motherhood penalty around

birth. The interaction between the macro-level indicators and time since a birth tests for hypothesized differences in the long term consequences of motherhood between institutional country contexts. As a sensitivity test we lagged the two country indicators by 1 year, which did not produce different results.

Table 2: Descriptive Statistics for Individual and Country Variables

	Mean	S. D.	%	Range
Respondent characteristics				
(N= 12,997)				
Mean age at first observation	32.00			
Child ever born into household				
First birth during survey			13	
Ever had first birth			80	
Second birth during survey			12	
Ever had second birth			57	
Third birth			4	
Ever had third childbirth			14	
Mean observations per person	5.20			
Person-year observations (N=68,111)				
Dependent variable				
Occupational status (ISEI)	45.47	13.63		16-74.50
Independent variables				
Age	34.87	5.77		18-47
Child born into household				
First birth	.79			0-1
Second birth	. 54			0-1
Third birth	.13			0-1
Time since birth in years				
First birth	9.26	7.41		0-30
Second birth	5.38	6.43		0-29
Third birth	1.07	3.30		0-23
Age at birth				
First birth	25.63	4.13		14-44
Second birth	28.63	3.41		15-46
Third birth	31.30	1.70		18-47
"Supply-side mechanisms"				
Weekly working hours	33.37	12.25		1-70
Work experience in years	14.92	7.34		0-37
Country context variables (N=101)				
Public expenditures on day care	.49	.46		0-2.02
Public cash benefits to family	1.18	.59		.28- 2.63

Sources: ECHP, 1994-2001; OECD Statistics 2012

3.3 Methods

Consistent with previous research on the motherhood wage penalty (e.g. Budig and England 2001; Budig and Hodges 2010; Waldfogel 1997), we test hypotheses based on individual fixed effects regression models explaining the change in respondents' occupational status over time. Focusing only on within-individual variation, these longitudinal models control for all unchanging characteristics of individuals (e.g., educational attainment, having a supportive partner). This eliminates potential biases due to unmeasured factors (e.g., personality) (Allison 2005). Purged of these confounding effects, our models provide stringent tests of longitudinal within-person change (Castilla 2007; England et al. 1988), because they control for a major source of endogeneity, the self-selection into motherhood based on stable characteristics. Implicitly, our fixed effect models have two levels: time (level 1) nested within individuals (level 2). Similar to including dummy variables for countries, the model also adjusts the standard errors to account for the clustering of individuals within countries.

Fixed effects models allow us to consider whether women's occupational status trajectories vary according to time-varying characteristics, namely, motherhood. We begin by documenting the motherhood penalty and testing the declining-penalty-with-parity hypothesis, which is addressed in all models. With age and age-squared controlling for the overall occupational status developments, we consider the average change in occupational status associated with having a birth of given parity during the course of the survey (Model 1). We then add parity-specific time since birth (Model 2). With these additional controls, the first, second, and third birth indicators illustrate the motherhood penalty occurring around the time of each birth. A negative coefficient for time since birth supports the supply-side rebound hypothesis of diminishing occupational penalties. A positive coefficient supports the demand-side cumulative disadvantage hypothesis.

To test the young-mother-penalty hypothesis about birth timing, mother's age at the time of each parity-specific birth is added next (Model 3). A positive interaction between age at birth and first, second, or third child would be consistent with the particular disadvantage of early childbearing. (The main effects of age at birth are not included, because fixed effects models only estimate the effects of time-varying covariates). Differences by parity in the effects of age at birth address the age-and-birth-order-interaction hypothesis, which anticipates particularly negative career consequences for higher order births to older mothers. The model is re-estimated to include only statistically significant interactions between age at birth and birth order (Model 4). Although no direct measures of demand-side discrimination

are possible, *work experience* and *working hours* control for supply-side mechanisms proposed to explain occupational status declines (Model 5).

Finally, in Table 3, national spending indicator interactions with parity-specific birth and with time since parity-specific birth test the hypothesis regarding the relationship between state policies and the effects of motherhood, short- and long-term. First, we show differences in the motherhood penalty in countries with different levels of expenditures on public funded childcare and on cash benefits to the family. Then, these differences are shown in Model 2, while controlling for work experience and working hours. This offers evidence on whether these supply-side mechanisms are sufficient to explain family allowance differences in the motherhood penalty or whether there is still room for unmeasured factors, particularly demand-side explanations such as employer discrimination.

4. Results

4.1 Pooled results

Table 3 presents results from our fixed effects models predicting changes in occupational status. Model 1 shows whether there are differences in occupational status before and after a child is born. The first and second births observed are associated with a statistically significant decrease in occupational status (about one-half point each). The effect sizes are expectedly small, because our models only address over-time variation within respondents, but they indicate relatively large status losses when we compare the coefficient with the status gains over time.

Net of having the first, second and third births, age and age-squared capture the underlying time trend and show an upward occupational status trajectory. This trend flattens out slightly at older ages. It becomes essentially linear when years since birth and age at birth are factored into Model 3.

Controlling in Model 2 for parity-specific births and for the time elapsed since these births, the average woman's occupational status increases by nearly three status points [$(10\times.299) + (10^2\times-.003) = 2.69$)] over a decade, an increase congruent with research on women's occupational mobility (e.g., Jacobs 1999). A change of three ISEI points would constitute a modest status upgrade from a general office clerk (45 points) to a cashier or teller (48 points).

Table 3: Motherhood penalty for occupational status developments: Partnered women, 18-40, in 13 countries (Fixed effects regression coefficients).

	Model 1: Motherhood Penalty (Control and Child Variables)		**Model 2:** Time since birth		**Model 3:** Timing of birth		**Model 4:** Timing of birth		**Model 5:** Supply-side mechanisms	
	B	SE	B	SE	B	SE	B	SE	B	SE
Constant	46.203***	.151	47.302***	.318	47.134***	.340	47.212***	.319	46.917***	.319
Time										
Age	.193***	.012	.299***	.029	.304***	.030	.302***	.029	.228***	.038
Age²	-.004**	.001	-.003*	.001	-.002	.001	-.002	.001	-.002	.001
Parity-specific birth										
First birth	-.347*	.137	-.359*	.141	-.244	.206	-.342*	.141	-.055	.142
Second birth	-.497***	.134	-.377**	.139	-.350	.182	-.371**	.139	-.208	.139
Third birth	-.351	.219	-.268	.231	.349	.284	.343	.283	.490	.283
Time since birth										
First birth			-.125**	.039	-.132**	.039	-.129**	.039	-.123**	.039
Second birth			-.013	.031	-.015	.031	-.014	.031	-.029	.031
Third birth			.010	.036	.007	.036	.007	.036	.001	.036
Timing of birth										
Age at birth*First birth					-.022	.034				
Age at birth*Second birth					-.004	.034				
Age at birth*Third birth					-.221***	.060	-.221***	.060	-.214***	.059
Supply-side mechanisms										
Work experience in years									.079**	.026
Weekly working hours									.061***	.004

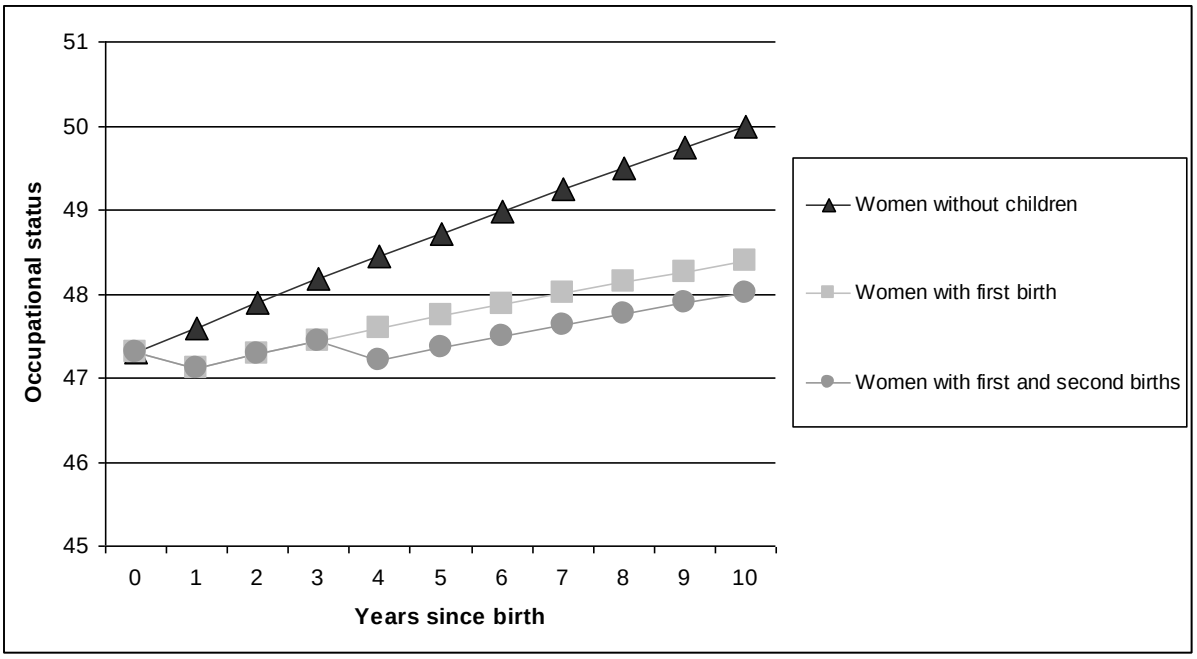
Source: ECHP, 1994-2001

Note: *p < .05 **p < .01 ***p < .001, two-tailed test; Age, age at birth, work experience and working hours were centered around the mean: B=coefficient; SE=standard error of the coefficient

How does the motherhood penalty change as a child ages? Because the immediate cost of a birth may under- or over-estimate its long-run impact, Model 2 controls for time since birth in order to investigate the implications over the life course of having had each parity-specific birth. Importantly, time since the birth of the first child is negative, which indicates that occupational status does not rebound as the child grows older. In fact, if higher-order births are controlled, the first birth penalty increases as the child grows older. With each year since the first birth, the mother is penalized an extra .125 status points in addition to the .359 point penalty around the birth itself. Thus, with one child born at the beginning of a ten year period, occupational status is expected to increase by only 1.081 status points instead of 2.69 status points--that is, only 40 percent of the gain expected in the case of no birth.

Figure 1 visualizes these results. It shows the less favorable occupational status developments over ten years for women with (line with squares) and without (line with triangles) a first birth.

Figure 1: Occupational status developments for women with and without a birth



Source: ECHP, 1994-2001

A second birth also shows a drop in occupational status (dotted line). Having a second birth three years after the first birth would result in an occupational status increase of only .704 status points after ten years [1.081-.377 = .704], a scant 26 percent of the gain expected for women without birth. As a second child grows older, we find no increase in the negative effect of a second birth, but neither do we find a decrease. Given the first birth, the negative

consequences of a second child seem to date to its birth and remain constant over time. In short, for first births, we find evidence for the cumulative disadvantage hypothesis of increasing penalties. We find no support for the rebound hypothesis nor do we find any effect for the third birth.

In Model 3, the interaction terms between the mother's age and the first, second, and third births indicate the relevance of the timing of motherhood in the life course. The results are surprising. Contrary to the young mother penalty hypothesis, the effects of first and second births do not vary significantly with age of the mother. However the timing of birth matters for third births. There is only an occupational status penalty for third births when they are born later in the mother's career. Dropping non-significant interactions, Model 4 reaffirms the negative status implications of merely having had a first or second birth.

Does the motherhood penalty differ between first- and higher-order births? All five models are relevant to the hypothesis arguing a declining penalty with higher parity. This declining penalty is not seen for the second birth, which is not associated with a smaller overall penalty to occupational status than is the first birth (see Models 2 and 4). Unless the mother is older, the penalty to a third birth is not statistically significant, providing limited evidence for the hypothesis. Only for the first child does the penalty increase over time, consistent with the declining-penalty-with-parity hypothesis, which pointed to the first birth as particularly important for status loss. Based on the results of negative long term consequences for the first child, the critical distinction for occupational mobility is between women with and without children, not between women who differ in their number of children.

Model 5 controls for work experience and working hours, which capture supply-side explanations for the motherhood penalty. Increases in years of work experience are associated with occupational status gains. Not surprising given the marginalization of part-time work, an increase in working hours is also associated with an increase in occupational status. The effects of the first and second births cease to be statistically significant when supply-side explanations are included in analysis. This suggests that reductions in working hours and work experience are mainly responsible for the immediate status decline associated with a birth. As Model 5 shows, the negative effects seen in Model 4 for having a first birth and a second birth are completely explained by mothers' shifts into jobs with shorter working hours and to lost work experience due to career interruptions. Work experience and working hours account for downward mobility at the time of the birth, but there is no attenuation in the increasingly negative effect of first birth over the life course. Although the direct penalty of

becoming a mother may reflect occupational adjustments in working hours, the long-run penalty cannot be explained by these initial adjustments or by a depreciation of human capital with lost work experience. The increasing motherhood penalty to a first birth over time may still be related to unmeasured employer and institutional discrimination.

4.2 Country-Level differences

Table 4 presents the results of institutional context differences in the motherhood penalty for occupational status developments. Because the models include interactions, the main effects of a parity-specific birth and the time since a parity-specific birth can be interpreted as the motherhood penalty to occupational status in countries with average expenditures on day care and average expenditures on family cash benefits. In Model 1, mothers in average countries suffer a penalty of .286 status points around a first birth, which increases over time by .176 status points each year. For a second child, we see a motherhood penalty of .300 status points around the birth. As we argued, country expenditures have no effect on the penalty surrounding the birth, as indicated by the interactions of parity and the country-level variables.

Long-run consequences are a different story. In Model 1, the positive interactions between time since a first birth and day care expenditures show that the country matters for the long-term motherhood penalty to occupational status. In countries with higher public spending on child care, having a first birth has less severe career consequences than it does in countries with average or lower expenditures. Ten years after a first birth, we would expect a penalty of one status point [-.286 + (10 ×-.176) + (10 × 0.075 × 1.51) = -0.91] in a country with the highest expenditures on day care, two status points [-.286 + (10 × -.176) = -2.046] in a country with average expenditures, and 2.4 status points in a country with the lowest expenditures [-.286 + (10 × - .176) + (10 × 0.075 × -.51) = 2.43]. Thus, we find evidence for the supply-side hypothesis H5, which argued that the long-run penalty to a birth would be smaller where states invested more in public childcare.

By contrast, there is a negative interaction between time since first birth and family cash benefit expenditures. Long-term consequences of a first birth are more severe in countries with the highest spending than in countries with average spending. Ten years after a first birth, the motherhood penalty is three status points [(-.286 + (10 × -.176) + (10 × -.099 × 1.38)) = -3.41] in countries with the highest cash benefit spending, two status points in countries with average spending, and one status point [(-.286 + (10 × -.176) + (10 ×-.099× -

.98)) = -1.10] in countries with minimum expenditures. This supports hypothesis H6, which predicted the long-run occupational status penalty to a birth would be greater where states spend more on cash benefits to families.

Table 4: Motherhood penalty to occupational status developments with cross-national spending: Partnered women, 18-40, in 13 countries (Fixed effects regression coefficients)

	Model 1		Model 2	
	B	SE	B	SE
Constant	47.666***	.350	47.280***	.350
Time				
Age	.344***	.034	.253***	.042
Age²	-.004**	.001	-.004**	.001
Parity-specific birth				
First birth	-.286*	.143	-.003	.144
Second birth	-.300*	.141	-.139	.141
Third birth	.345	.296	.486	.295
Time since child born				
First birth	-.176***	.043	-.162***	.043
Second birth	-.021	.036	-.032	.036
Third birth	.012	.043	.010	.043
Timing of birth				
Age at birth*Third birth	-.221***	.060	-.213***	.060
Supply-side mechanisms				
Work experience			.089**	.026
Weekly working hours			.060***	.004
Country context indicators				
Public expenditures day care	-.685**	.232	-.530*	.232
Public cash benefits to family	.527	.349	.504	.348
Interactions:				
Public expenditures day care with parity-specific birth				
First birth	-.077	.262	-.155	.261
Second birth	.144	.259	.100	.258
Third birth	.266	.419	.208	.418
Public expenditures day care with time since birth				
First birth	.075*	.032	.073*	.032
Second birth	.015	.040	.013	.040
Third birth	-.058	.057	-.057	.056
Public cash benefits to family with children				
First birth	.463	.251	.459	.251
Second birth	.361	.240	.399	.240
Third birth	-.148	.425	-.080	.424
Public cash benefits to family with time since birth				
First birth	-.099*	.044	-.092*	.043
Second birth	.063	.052	.058	.052
Third birth	-.004	.061	-.005	.061

Source: ECHP, 1994-2001; Note: *p < .05 **p < .01 ***p < .001, two-tailed test; Age, age at birth and public expenditures centered around the mean; Minimum and maximum for centered day care expenditures = -.51 and 1.51, respectively, and for centered cash benefit expenditures = -.98 and 1.38. B=coefficient; SE=standard error of the coefficient

5. Discussion

This study investigated the relevance of births for women's occupational status developments in 13 European countries. Because our models control for unchanging individual characteristics, a major source of self-selection into motherhood, we offer a stringent test of theoretically-motivated hypotheses on the motherhood penalty over the life course. Capitalizing on rich cross-national and longitudinal data, our analysis makes four substantive contributions.

First, complementing research on the motherhood wage penalty, we find that motherhood also exacts a cost in terms of women's occupational status. At least for the first and second child, a birth depresses the occupational status trajectory of a mother.

Second, we demonstrate that the motherhood penalty to a birth differs by parity. Consistent with the declining-penalty-with-parity hypothesis, the first birth is most damaging as it is only the first one which is related to negative long term consequences. Moreover, the marginal status costs of motherhood decline with parity. Other research has shown a stiffer motherhood penalty for women with more children compared to those with fewer (e.g. Petersen, Penner and Høgsnes 2010), but our study addresses the relative costs of each birth. Given that some women consciously limit fertility to one child to minimize motherhood's career costs, this finding on the steep cost to a first birth merits serious attention.

Third, taking a life course perspective, we demonstrate that motherhood has not only short-term costs, but also long-term ones. Supporting the cumulative disadvantage hypothesis over the rebound alternative, the analysis demonstrates that the passage of time does not compensate for the negative consequences of a first birth: occupational status losses even increase as the first child grows older. Thus, motherhood is not merely an event leading to direct occupational status costs, but also a life status compounding status losses over a much longer period (Elder and Giele 2009b). For the second birth, occupational penalties do not worsen over time, but neither does occupational status rebound.

Nor is there evidence for the young-mother-penalty hypothesis. This goes against the belief that career costs are minimized by postponing births to later ages when careers are more established. However negative first and second births may be for occupational status, their timing in the woman's life course does not seem to matter. Because we observe changes over women's careers, rather than simply comparing early and late childbearers, our conclusion is decidedly less optimistic about the benefits of late birth timing than the conclusions reached by Taniguchi (1999) and Aisenbrey, Evertsson, and Grunow (2009). However, timing does

matter at higher parity. Merely having a third birth does not trigger a status loss, but having a third child at an older age is actually associated with downward mobility. This late birth resets the family clock for a woman whose other children no longer require intensive care – no doubt demanding new occupational adjustments and reminding the employer of impediments to the mother's productivity. A third birth presents older mothers with disadvantages more typically associated with a first birth.

Fourth, we offer the first explicit cross-national evidence of public policy implications for the motherhood penalty. Given the demonstrated limits to personal agency and individual solutions in mitigating the costs of motherhood, the impact of country context is of particular interest. The motherhood penalty is lower in countries where expenditures on public child care are higher. Presumably, with public child care, women have less need to switch to family friendly, but lower status, occupations after a birth. Mothers need fewer workplace accommodations, job performance is not compromised by child care problems, and employers have less incentive to discriminate against mothers. By contrast, spending on cash benefits to the family seems to exacerbate the motherhood penalty for occupational status. Family benefits subsidize mother's employment withdrawals, and they may encourage employer discrimination by calling attention to women's caregiver role (Mandel and Semyonov 2006).

Paralleling its substantive contributions, this research also advances our theoretical understanding of the motherhood penalty. To formulate our five original hypotheses, we integrated life course theory—with its attention to the timing and long-run consequences of life events—with the demand-side and supply-side explanations that have been widely invoked to account for mothers' employment disadvantages. On the supply-side, we find support for the occupational adjustment argument that the women who experience a birth work fewer hours, perhaps settling for lower status occupations where part-time work is more readily available. Following the human capital supply-side argument, we also find that women's occupational status seems to suffer because they fall behind in accumulating years of work experience due to career interruptions after a birth. Controlling for the two supply-side variables accounts for the status penalties at the time of the births, but does not explain the increasing penalty to a first birth over the life course. We are unable to test directly the demand-side theories of employer and institutional discrimination against mothers, but they remain plausible explanations for the long-run career costs of motherhood.

Our results leave unanswered other questions, such as whether the occupational status costs of motherhood are borne equally across social classes and the extent to which particular

occupations are at higher risk of negative outcomes. If the effect of motherhood depends on occupational status before a birth, floor and ceiling effects may apply. Considering additional occupational characteristics would allow tests of alternative explanations of the motherhood penalty to occupational status. Direct evidence on employer and institutional discrimination would be especially useful. Finally, a comparison between men and women would indicate the extent to which the motherhood penalty to occupational status explains persistent gender inequalities in occupational trajectories.

Complementing and extending previous work, this research shows that motherhood exacts a cost in occupational status as well as wages although we excluded those with the worst job prospects (those who have not yet returned to work after a lengthy period). This lead to a more conservative test of the hypothesis that motherhood negatively impacts occupational status. In emphasizing a life course perspective on the motherhood penalty, we demonstrate the importance of distinguishing different parities and considering the long term consequences of motherhood. Births are not only associated with an immediate shock to occupational status, but may also involve continuing status losses. Focusing on the immediate implications of a birth, previous studies have likely underestimated the long-run career costs of motherhood. Not only is there no reprieve over time from the motherhood penalty, but it is the first birth that inflicts the most career damage. Because of the limited efficacy of individual career strategies of limiting fertility to one child, delaying births, and playing career catch-up after the children are older, country-level policies that level the playing field for mothers remain an important issue.

6. Appendices

Appendix A: Sample Restrictions

Two countries were dropped altogether. Sweden did not have a panel design, and the Luxembourg sample was too small for reliable estimates. Thus, we began with 14,515 respondents and 79,060 person-year observations. Women were dropped if occupational data were lacking, namely, those not having at least two waves of occupational data and those who did not return to work after a birth. This reduced the sample to 13,936 respondents and 77,107 person-year observations. Deletion of missing data and outliers resulted in a final sample of 12,997 respondents and 68,111 person-years. Observations with an ECHP-specific "miscellaneous" occupational code were dropped, because it was not possible to assign an ISEI status score. We deleted 91 cases that lacked information on all members in the household, in addition to the less than 1 percent of cases with inconsistent information on partnership status. Women reporting a first birth before age 14 are excluded. On working hours and work years, nine complete cases and 1000 person years were deleted due to missing data. Also dropped were respondents with no information on previous working hours before a career interruption and those reporting a first job before age seven. Missing information on work experience resulted in the loss of 12 percent of person-year observations but only 5 percent of complete cases.

Chapter IV: Female Income in Europe. The Influence of Male Partner Income[8]

[8] This chapter is currently under review.

1. Introduction

It is well known that women continue to earn lower incomes than men on the labor market, indicating persistent gender inequalities (Jarrell and Stanley 2004; Mandel and Semyonov 2005; Rosenfeld and Kalleberg 1991). Previous research attempted to explain this inequality by focusing mainly on individual differences between men and women (e.g. in the human capital they accumulated or their position or occupation) and on discriminatory behavior by employers against women or mothers (Becker 1981; Benard and Correll 2010; Correll, Benard and Paik 2007; England 1992, England 2010; Ridgeway 1997; Roos and Gatta 1999; Tomaskovic-Devey 1993). Research has been less inclined to consider the income situation of the partner as a further restriction on female income, although the working lives of partners are likely to be interlinked (Moen 2003). Together, partners coordinate jobs, hours of work or parenthood, but often in a gendered way (Moen 2003:10). For example, Pixley and Moen (2003) find that men's careers are often prioritized in American dual-earner couples. Moreover, it is still common for the male partner to earn more than the female partner, and this difference influences joint decisions on the division of paid and household labor (Becker 1991; Moen 2003; Winslow-Bowe 2009). We therefore apply a couple perspective investigating the relevance of male partner income for women's income and women's wage rate in working couples. We consider both women's income and wage rate as they are both important indicators for income inequalities. Women's wage rate refers to labor market success but women's income also considers the fact that many women do not work full-time, which can also be influenced by the income of the male partner.

We use New Home Economics (e.g. Becker 1991; Blau and Ferber 1986; Bryant 1990) and social capital theory (e.g. Coleman 1990) to develop contrasting hypotheses on positive and negative partner income effects in line with Verbakel (2008). Moreover, we investigate country differences in the relation of partners' incomes and link possible positive or negative relationships to the cultural and economic country context. The cultural and economic contexts are likely to stimulate certain family models and thus interrelations between careers of partners. For example, the cultural context includes ideas and norms concerning the division of labor between partners and the role of women on the labor market (Blossfeld and Drobnič 2001; Sainsbury 1994; Treas and Widmer 2000). This cultural context may affect whether partners choose to specialize between household and paid labor or if they try to equally invest in a career. The economic context can affect whether one income is enough for a decent standard of living or whether a second income, provided by a partner

working part time or full time, is useful (Blossfeld and Drobnič 2001). The "need of income" effect has been put forward by England (2010, p. 152) for female employment when comparing low educated couples and high educated couples.

In view of these considerations, we pose the following research questions: (1) How does male partner income affect female income and wage rate and does this differ between European countries? (2) To what extent can the cultural and economic context explain differences between countries in the effect of male partner income on female income and wage rate?

We aim to contribute to existing research in three different ways. First, this study adds a couple perspective to research on the gender income gap. Second, this study will focus on partner income influences that are not confounded by assortative mating based on income or education, or by shared and stable resources and restrictions in the couples' surroundings. This will be done by investigating the relevance of changes in the male partner's income for female income and wage rate changes with the use of fixed effect models, which control for all unobserved stable characteristics (Allison 2005; Castilla 2007; Musick and Meier 2012 England et al. 1988; Waldfogel 1997). Third, we not only describe country differences in the effect of male partner income on female income and wage rate, but also test whether such differences are related to the cultural and economic context.

To answer the research questions, the present study makes use of panel data from the European Community and Household Panel (ECHP), involving eight waves (between 1994 and 2001) and 13 countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, and the UK), and combines these data with information on the economic situation from the ECHP and the cultural situation from human development reports (UNDP 2012).

2. Theory and hypotheses

2.1 The relevance of the partner's income for female income and wage rate

According to New Home Economics (e.g. Becker 1991; Blau and Ferber 1986; Bryant 1990), partners specialize either in paid or household labor in order to maximize joint family utility, i.e. family well-being. Although complete specialization between partners is less common nowadays, specialization is still visible to some degree e.g. one partner is often only seen as

an additional earner, but spends less time and effort at work and invests less in a career. Which partner specializes in paid labor depends on the comparative advantage on the labor market. Becker (1991) assumes that women have an advantage in childbearing and men in paid labor, which would result in women specializing in household labor and men in paid labor.

Based on this assumption, the comparative advantage of men on the labor market grows over the life course as they gain more work-related skills by specializing on the labor market, and as women are deprived of their work-related skills by specializing in household and care tasks. This implies that male partner income will increase over time and female income will decrease over time due to these specialization tendencies. The more the partner earns, the more it becomes possible for the female partner to specialize in household labor, because it takes less additional income to maintain a decent standard of living.

Specialization is possible in respect to time and effort on the labor market (Becker 1991; Becker and Moen 1999; Bernasco, de Graaf and Ultee 1998). Spending less time in paid work would reduce women's total income. Expending less effort on paid work would reduce women's wage rate and income because less effort implies fewer opportunities for promotion and pay raises, less bargaining about wages, or having to accept jobs below a certain skill level (Bernasco, de Graaf and Ultee 1998). In conclusion, New Home Economics suggests a negative relationship between the income of the male partner on female income and wage rate because male partners specialize in paid work and female partners in housework (Becker 1991; Bernardi 1999; Bernasco, de Graaf and Ultee 1998; Verbakel 2008). We hypothesize:

H1: Income of the male partner is negatively related to the income and wage rate of the female partner.

Drawing mainly on social capital theory (e.g. Coleman 1990), the resource perspective suggests that people benefit from resources of others within their social network (e.g. Bernardi 1999; Bernasco, de Graaf and Ultee 1998; Verbakel 2008). As part of the female partner's network, the male partner might offer her beneficial contacts, skills or knowledge that are helpful in her own wage rate negotiations or in her search for jobs with higher earning potentials (Bernardi 1999; Bernasco, de Graaf and Ultee 1998; Verbakel 2008). For example, a partner who earns a high income and sees his income rise steadily is likely to have skills and

experience in income negotiations with employers and knowledge about the appropriate income for certain job positions. Moreover, these characteristics suggest a beneficial network that provides access to highly paid positions. Granovetter (1974) argues that weak ties in the network are especially beneficial because they link people who would otherwise be unconnected. However, there are also conditions in which strong ties can be profitable. As a strong tie, the partner is more available and more likely to be motivated to assist e.g. by activating his own contacts to search for highly paid jobs (Granovetter 1974). In addition, the literature suggests that women have less valuable networks when it comes to job information and fewer memberships of voluntary associations than men (Beggs and Hurlbert 1997). Thus, the male partner might function as a bridge between the female partner and contacts who have job-related information, for example about jobs that pay a higher wage, which would allow career advancement in terms of earnings. As a consequence, women can increase their wage rate and income. A high income and income gains on the part of the male partner might further imply positive attitudes with respect to career advancement that can stimulate the career ambitions of the female partner (Bernasco, de Graaf and Ultee 1998). This is likely to result in higher career investments, increasing women's wage rate and income. The male partner's higher income can also make it possible to outsource certain household and care tasks. Women can thus spend less time at home and have more time available to work. As a consequence, women can increase their income because they are able to spend more time for working. In conclusion, the resource perspective suggests that a higher income for the male partner increases female income and wage rate. We hypothesize:

H2: Income of the male partner is positively related to the income and wage rate of the female partner.

Previous research has revealed both negative and positive relationships between partners' incomes depending on the country context we look at (Cancian and Schoeni 1998; Henz and Sundström 2001; Juhn and Murphy 1997; Schwartz 2010; Verbakel 2008). For example, Verbakel (2008) demonstrates that the male partner's income has a negative relationship with female's income in the Netherlands. In Cancian and Schoeni (1998), spouses' earnings correlated negatively in Switzerland but positively in Sweden, Norway, France, Canada, Israel and the US. Small positive correlations were found for Germany, the UK, and Australia. This suggests that the relation between partners' incomes and the

applicability of the two described theories depend on certain country characteristics. In the following part we suggest that the cultural and economic context might be of importance.

2.2 Country differences

2.2.1 The relevance of the cultural context

Countries differ in the prevalence of traditional or egalitarian gender ideologies (Blossfeld and Drobnič 2001; Crompton and Harris 1999; Panayotova and Brayfield 1997; Treas and Widmer 2000). Traditional ideas imply that the male partner is more responsible for income and the female partner for care and household tasks. More egalitarian ideas indicate that both men and women share these responsibilities and invest equally in work and in caring and household tasks (Blossfeld and Drobnič 2001; Crompton and Harris 1999; Treas and Widmer 2000). The former are more prevalent in countries such as Germany or Belgium and the latter in countries such as Denmark or Sweden (Blossfeld and Drobnič 2001).

Existing values, traditional versus egalitarian, can shape the preferences of men and women with respect to their involvement in the labor market and in caring and household tasks (Verbakel 2008; Verbakel 2010) or, in economic terms, the value they place on time spent in paid labor and at home (Blau and Ferber 1986). For example, traditional ideas stress the value of family and household time for women and of work for men. Thus, Becker's specialization processes coincide with traditional gender ideologies indicating that men specialize in paid labor and women in unpaid labor (see also Verbakel 2010). This is likely to decrease women's income and wage rate especially when male partner's income increases. This also implies that in more traditional cultural contexts, it will be less common or less accepted to use the higher household income (resulting from male partner income increases) to outsource household and care tasks, or for women to use their partner's contacts and skills for their own career advancement. Similarly, more traditional gender ideologies may encourage the male partner to expect that the female partner specializes in household and care tasks, because it is common for men to be responsible for earning money for the family.

In contrast, egalitarian gender ideologies stress the value of both work and the family; the predominant idea is that both partners should have a career and should be involved at home. As a consequence it is more likely that it is accepted that women use their partner's available resources for their own career advancement. Moreover, it is more common that a

higher household income is used to outsource care and household tasks, enabling the female partner to invest more time and energy in the labor market. Male partner's career ambitions are more likely to spill over to the female partner, because there might also be more career opportunities for women on the labor market when employers expect that also women want to pursue a career. This would affect women's hourly wages. We thus assume that egalitarian gender ideologies are more likely to stimulate positive relationships between incomes of partners (resource perspective) and that more traditional gender ideologies stimulate more negative relationships between partners' incomes and wage rates (restrictive perspective). We hypothesize:

H3: In countries with more traditional gender ideologies, the income of the male partner is more negatively related to the female income and wage rate than in countries with more egalitarian gender ideologies.

2.2.2 The relevance of the economic context

The economic affluence hypothesis states that economic circumstances within countries shape the economic necessity of women to invest time and effort on the labor market (Steiber and Haas 2012; Uunk, Kalmijn and Muffels 2005). More specifically, the degree to which a single income in a couple household is enough to maintain a decent standard of living is known to differ between countries (Blossfeld and Drobnič 2001; Steiber and Haas 2012). In countries with relatively high purchasing power, one income is enough to meet the needs of the whole family. The purchasing power of the average male income is low in countries such as Portugal and Greece. In contrast, the purchasing power of the average male income is high in countries such as the Netherlands or Denmark.

Thus, the economic context is relevant for partner income relationships because differences in the purchasing power of the average male income are expected to result in differences in the degree of specialization that is most valuable in terms of increasing family utility. A high level of specialization is most valuable for family well-being in countries where one income is enough for a decent standard of living, because there is less need for an additional income. In contrast, in countries where the purchasing power of average earnings is low, an additional part-time or full-time income is required, alluding to the "need for income" effect (England 2010:152). Women would therefore invest less energy and time at work in the former situation than in the latter, something that is likely to affect their career advancement.

The economic need might even stimulate positive partner effects (resource perspective), because the additional income of the female partner would improve the couple's standard of living from less than adequate to comfortable or luxury. As a consequence, we assume that low purchasing power of the average male income is more likely to stimulate positive relationships between incomes and wage rates of partners (resource perspective) and that high purchasing power of the average male income is more likely to stimulate more negative relationships between incomes and wage rates of partners (restrictive perspective). We hypothesize:

H4: The male partner's income is more negatively related to the female income and wage rate in countries with high purchasing power than in countries with relatively low purchasing power.

3. Data and Methods

3.1 Data

We test our hypotheses with national samples from the European Community and Household Panel (ECHP) (for more details, see Eurostat 1996; Verma and Clémeanceau 1996). The ECHP is an annual multi-country panel that includes individual and household information collected in eight waves (1994-2001). We analyze data for 13 countries: Austria, Belgium, Denmark, Finland, France, Germany (German Socio-Economic Panel Study), Greece, Ireland, Italy, the Netherlands, Portugal, Spain and the UK (British Household Panel Study). Seven waves (1995-2001) are available for Austria and six (1996-2001) for Finland. Lacking a panel design, Sweden is omitted, as is Luxembourg, which has a too small sample for reliable estimates. These data are ideally suited to our questions because they allow us to consider the income situation of both partners over time.

We selected a sample of women living with their partner, aged 18-50 and working at the time of the first observation. Similarly, the sample was restricted to women whose partner was 18-50 years old and also working at the time of the first observation. We added partners as they formed unions and ceased observing the respondents if their partnership ended or if the partner no longer wished to take part in the survey (30%). Thus, respondents whose partnership ended during the survey are in the analysis for the time period of their partnership. This resulted in 11,761 respondents and 66,571 person-year observations. Deletion of missing

data, of observations of respondents or partners who were still in school in addition to working, and of observations with 0 incomes (see details below) resulted in information on 11,692 women with 53,801 person-year observations. Because fixed effect models require a minimum of two observations of women living with the same partner and with information on all the dependent and independent variables, the final sample was 9,373 women. Averaged over five observations each, this produced a total of 49,382 person-years of data.

3.2 Measurement

Dependent Variables

The dependent variable female income was measured with help of the natural log of her monthly gross income for each year of the survey, converted to purchasing power parities based on the exchange rates provided by the ECHP (as recommended by the ECHP provider, we took the exchange rate from the year prior to the year when income was measured; the ECHP imputed missing information on the income variables). Observations in which the respondent was not working and thus reported 0 income or 0 working hours were not considered in the analysis (14%; 7536 observations; 0 respondents). Including them would have resulted in too much deviation from a normal distribution of the female income variable and would have mixed the relevance of male income for women entering or leaving the labor market with the relevance of male income for female partner's income. We therefore do not consider extreme specialization, where one partner earns the whole household income and the other one does not contribute any income. This is likely to mean that partner income effects have been underestimated, because including women who do not work would increase the variance in the income situation of both partners. Previous research has already shown that the partner's socio-economic position influences women's entry into and exit from the labor market (e.g. see Blossfeld and Drobnič 2001 for a summary).

To measure the female wage rate, the monthly gross income converted to purchasing power parities was divided by monthly working hours and converted to the natural log afterwards. 25 observations and 1 respondent were deleted due to missing information on working hours.

Independent Variables

Male partner income was measured with the help of the natural log of the monthly gross income for each year of the survey, converted to purchasing power parities based on the exchange rates provided by the ECHP. Observations in which the respondent was not working and thus reported 0 incomes or 0 working hours were not considered in the analysis (215 observations; 0 respondents).

Control Variables

Women's work experience and *work experience²* variables control for the underlying trajectory of female income based on seniority and experience. Work experience equals the woman's age at the time of the survey minus her age at the start of her first job. We adjusted work experience for career interruptions during the survey and the five years before the survey: (1) Survey years in which the woman was not employed were subtracted from the years since the woman started her first job; (2) For non-employment spells of one year or less before the survey, a single year was subtracted; (3) If, during the five years before the survey, the woman reported a non-employment spell longer than one year, two years were subtracted. We divided women's work experience by 10 to show average income developments over a 10 year period. Changes from one year to another are rather small. Respondents with no information on the start of their first job were deleted from the analysis (501 respondents[9]). To control for the motherhood wage penalty, we consider changes in the *number of children* in our analysis, including own and adopted or foster children. Observations with missing information (32 observations; 1 respondent) were deleted from the analysis. *Marital status* is a dummy variable, with a value of 1 for married and a value of 0 for cohabiting without marriage (missing: 25 observations; 0 respondents), which captures the relevance of marriage for changes in income.

Country Context

In order to measure the time varying cultural context, we used the Gender Empowerment Measure (GEM) from the Human Development reports (UNDP 2012) of the United Nations Development Programs (see Table A for average GEM values for each country over time). The GEM is based on the percentage of parliamentary seats held by women, the percentage of

[9] We also did the analysis with the age variable instead of the work experience variable which had no missing information. The results however remained quite stable.

administrators and managers who are women, the percentage of professional and technical workers who are women, and women's share of earned income compared to that of men. The advantage of this measurement is that it is available for each year of the survey. An exception is France, where the GEM is only available until 1997 and again from 2005 on. We therefore imputed the GEM scores for 1998, 1999, and 2001 for France using interpolation. The GEM ranges between 0.37 and 0.83. Although the GEM does not directly measure gender ideologies, it captures the consequences of gender ideologies within countries. The GEM indicator has already been used by Fuwa (2004) to explain the division of household labor in 22 countries, and by Fischer et al. (2004) to measure gender roles within countries.

The time varying economic context is measured by the purchasing power (PP) of average male wages in different countries at the different time points based on the ECHP (see Table A for average PP values for each country over time). To calculate the PP, the monthly gross male income was converted to purchasing power parities based on the exchange rates provided by the ECHP and then divided by monthly working hours. We top-coded the purchasing power of male income to 1000 and then took the mean per country. PP and GEM are significantly correlated (.65). Table 1 provides the means and standard deviations for the dependent and all independent variables.

Table 1: Description of Dependent and Independent Variables

	M	SD	Range
Person-year observations (N=49,382)			
Dependent variables			
Ln(female income)	7.07	.64	1.37 to 10.75
Ln(female wage rate)	3.64	.52	-1.29 to 7.32
Independent variable			
Ln(male partner income)	7.57	.51	2.76 to 11.01
Control variables			
Female work experience/10	1.92	.89	0 to 4.70
Female (work experience/10)^2	.79	.88	0 to 7.75
Number of children	1.39	1.03	0 to 8
Married[a]	.88		0/1
Time varying country context variables (N=101)			
Cultural context			
Gender Empowerment Measure (GEM)	.632	.11	0.37 to 0.83
Economic context			
Purchasing power of average male salaries (PP)	45.13	12.47	15.47 to 73.91
Observations per person (N=9,373)	5.30		2-8

Sources: ECHP 1994-2001, UNDP 2012; Notes: [a]Married: 0 = *cohabiting*, 1 = *married;*
M=mean; SD=standard deviation; Ln=natural log

3.3 Methods

There are several possible mechanisms behind the relation between the incomes of partners that have not been clearly distinguished in prior research. The first mechanism – and the one we are interested in in our study – is that male partner income and resources which are related to male partner income (e.g. beneficial networks, income negotiation skills) influence female income for example by restricting it or by enhancing it. The second mechanism that causes a relationship between partners' income is that men and women with high incomes are more likely to meet and form a couple, with the same being true of men and women with low incomes. This could for example be because people find their partners in the workplace. Similarly, it is well known that men and women with a similar educational background are likely to become partners and education is an important predictor of future income. The third

mechanism refers to shared resources and restrictions in the surroundings. For example, some regional labor markets make it difficult to get a better paid job, whereas others offer various career prospects. Because both partners experience the same regional labor market conditions this is a further reason why incomes of partners are likely to be interrelated. Only the first mechanism implies that male partner income influences female income. In this study we will separate the first effect from the other two mechanisms by using fixed effect models (Allison 2005; Castilla 2007; England et al. 1988; Waldfogel 1997). Fixed effect models eliminate bias due to time-invariant unobserved factors which determine the dependent or independent variables by looking only at individual change (Allison 2005; Castilla 2007; Musick and Meier 2012; England et al. 1988). Thus, it is likely that they eliminate possible bias due to income homogamy or educational homogamy between partners as well as shared resources and restrictions in the environment which remain stable. This is important as we do not have proxies or bad proxies to control for all possible other mechanisms. Not controlling for these aspects could lead to either an overestimation or an underestimation of male partner income effects on female income. Note that those models are not able to control for shared resources and restrictions in the environment which change over time or for possibilities of reversed causation (Musick and Meier 2012). Thus, if local labor markets within countries change over time this might be an alternative explanation of positive or negative correlation in partners' income.

Our models are conservative tests of the hypotheses because they only capture the relevance of the male partner's income changes for female income and wage rate changes within a household. They do not consider the effects of the male partner's income on female income by comparing couples. The variance in the dependent variable is thus much lower than if we had also considered differences between women. This means that the effects could be larger when we consider both within and between individual variance. Fixed effect models are also common in studies on the motherhood wage penalty (e.g. Waldfogel 1997).

In our first analysis (Table 2), we examine the relevance of partner's income for female income and wage rate per country, controlling for work experience, work experience^2, marital status and number of children. Table 3 tests the relevance of the cultural and economic contexts for differences in the effect of the male partner's income on female income and wage rate. This is done using interaction effects between the GEM and partner income as well as the PP and partner income. All continuous variables were mean centered because this makes interaction effects and the constant easier to interpret.

4. Results

4.1 The relevance of the partner in different European countries

Table 2 shows the effect of male partner income on female income and wage rate in 13 European countries. We find that incomes of partners have a negative relationship in the Netherlands. There, a 1% increase in male partner income decreases female income by .091%. This relationship is not visible for women's wage rate in the Netherlands, showing that male partner income in the Netherlands only affects women's total income because women adjust their working hours[10]. Hypothesis 1, which argued that the income of the male partner is negatively related to the income and wage rate of the female partner, is partly supported in the Dutch context, but not in the other country contexts.

In most of the countries, we find that male partner income is positively related to female income. That is visible in Austria, Belgium, Denmark, Finland, France, Greece, Italy, Portugal, and Spain. The largest positive relationship is found in Portugal, where a 1% increase in the male partner's income increases the income of the female partner by .478%. The smallest positive association is found in Belgium, where a 1% increase in the male partner's income increases the income of the female partner by .079%. No significant effect of male partner income on female income is found in Germany, Ireland, and the UK.

Investigating the relevance of male partner income for women's wage rate in the same countries shows that male partner income is also positively associated with women's wage rate. In the UK and Germany, we find that male partner income is only positively related to women's wage rates. The latter association was suppressed by women's changes in working hours in the model on women's income, implying that in these countries male partner income increases are positive for women's wages but negative for women's working hours. In Belgium, the significant positive relationship between the incomes of partners disappears in the models on women's wage rates, which suggests that male partner income in Belgium only affects women's total income because women adjust their working hours. No significant relationships between the wages of partners are found in Ireland. Overall, this provides some evidence for hypothesis 2, which argued that the income of the male partner is positively related to the income and wage rate of the female partner. We can further conclude that countries differ in the relevance of male partner income for female income. Section 4.2 will investigate whether this is due to the cultural and economic context.

[10] Additional analysis with working hours as a predictor for women's income showed the same.

Table 2: Fixed effect models of male partner income influences on female income and wage rate - results per country

	Austria	Belgium	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Nether-lands	Portugal	Spain	UK
Ln(female income)													
Constant	6.862***	7.212***	7.403***	7.240***	6.927***	7.075***	7.230***	7.132***	7.246***	6.999***	6.978***	7.198***	7.054***
Ln(male partner income)	.235***	.079**	.281***	.151***	.337***	.032	.250***	-.003	.267***	-.091***	.478***	.241***	-.017
Work experience/10	.372***	.314***	.471***	.399***	.160***	.441***	.427***	.538***	.207***	.627***	.278***	.317***	.543***
(Work experience/10)²	-.001	-.060***	-.054***	-.092***	.085***	-.040**	-.030	.012	.022*	-.048**	-.003	-.060***	-.013
Number of children	-.080***	-.072***	-.025**	-.024*	.013**	-.147***	-.001	-.090***	-.030**	-.166***	.004	-.070***	-.177***
Married (Ref. Cohabiting)	.077	.141***	.022	.007	.060*	-.058 *	-.065	-.050	-.066	-.023	-.057	-.023	-.059*
R2 (within)	.140	.123	.424	.151	.172	.145	.370	.111	.172	.122	.352	.140	.160
F statistics	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Ln(female wage rate)													
Constant	3.461***	3.821***	3.854***	3.634***	3.367***	3.640***	3.530***	3.715***	3.735***	3.903***	3.319***	3.605***	3.644***
Ln(male partner income)	.287***	.038	.250***	.132***	.344***	.064***	.237***	.026	.303***	-.021	.467***	.241***	.042*
Work experience/10	.367***	.377***	.454***	.354***	.170***	.474***	.418***	.559***	.201***	.525***	.318***	.254***	.455***
(Work experience/10)²	-.029*	-.038**	-.036***	-.067***	.100	-.045***	.005	-.003	.018	-.050***	.041**	.009	-.043***
Number of children	-.012	-.011	-.014*	-.007	.053***	-.009	.029	.005	.003	.031**	.037**	-.021	-.034**
Married (Ref. Cohabiting)	.099*	.075*	.016	-.014	.084**	-.005	.070	-.020	-.033	.044*	-.051	-.004	.012
R2 (within)	.169	.167	.455	.149	.162	.180	.263	.187	.180	.149	.338	.132	.171
F statistics	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Number of observations													
Person-year observations	2320	3686	4045	3186	4380	6163	1571	1815	4155	7237	3478	2550	4796
Respondents	463	653	742	738	837	1156	299	385	747	1360	634	522	837

Source: ECHP, 1994-2001; Notes: *p < .05 **p < .01 ***p < .001; Continuous variables were centered around the mean; Ln=natural log

4.2 The relevance of the cultural and economic context

In the following step, presented in Table 3[11], we investigate the relevance of the cultural and economic context for the association of incomes and wages of partners. Because these models include interactions, the main effect of male partner income now represents the relationships of partner incomes in countries with average GEM scores and where the purchasing power of the average male income is also average. In model 1 we see that a 1% increase in male partner income in these country contexts results in an increase in female income by .084%. Model 2 shows that wage rates of those women increase by .107% due to male partner income increases.

The positive interaction between male partner income and GEM in model 1 means that in countries with more egalitarian gender ideologies, male partner income is even more positively related to female income than in countries with low or average GEM scores. This effect is not visible on women's wage rates in model 2. Male partner income is not more positively related to female wage rates in countries with more egalitarian gender ideologies. This implies that the larger association between incomes of partners in countries with higher GEM scores is due to women increasing their working hours as their male partner's income rises. We therefore find some support for hypothesis 3, which argued that the income of the male partner is more negatively related to female income and wage rate in countries with more traditional gender ideologies than in countries with more egalitarian gender ideologies (H3).

The interaction between male partner income and purchasing power of the average male income in model 1 shows that the relationships between male partner income and female income are smaller in country contexts with a higher PP. This interaction effect is also visible on women's wage rate in model 2. This is in line with hypothesis 4, which suggested that the income of the male partner is more negatively related to female income and wage rate in countries with high purchasing power than in countries with relatively low purchasing power (H4).

[11] Additional models are presented in Table B in the Appendix. They illustrate the direct effects of the country indicators without interactions and the interaction effects without direct effects of the country indicators.

Table 3: Fixed effect models of male partner income influences on female income and wage rate - the influence of the cultural and economic context

	Model 1		**Model 2**	
	Ln(female income)		Ln(female wage rate)	
	B	SE	B	SE
Constant	7.073***	.009	3.613***	.007
Ln(male partner income)	.084***	.006	.107***	.005
Work experience/10	.094***	.013	.071***	.011
(Work experience/10)²	-.018***	.005	-.017***	.004
Number of children	-.081***	.004	.008*	.003
Married	-.016	.009	.018	.008
Country Indicators				
GEM	.297***	.047	.319***	.041
PP	.018***	.001	.018***	.000
Interactions Ln(male partner income) with …				
GEM	.143**	.049	-.018	.043
PP	-.008***	.000	-.007 ***	.000
R2 (within)	.175		.220	
F statistics	.000		.000	

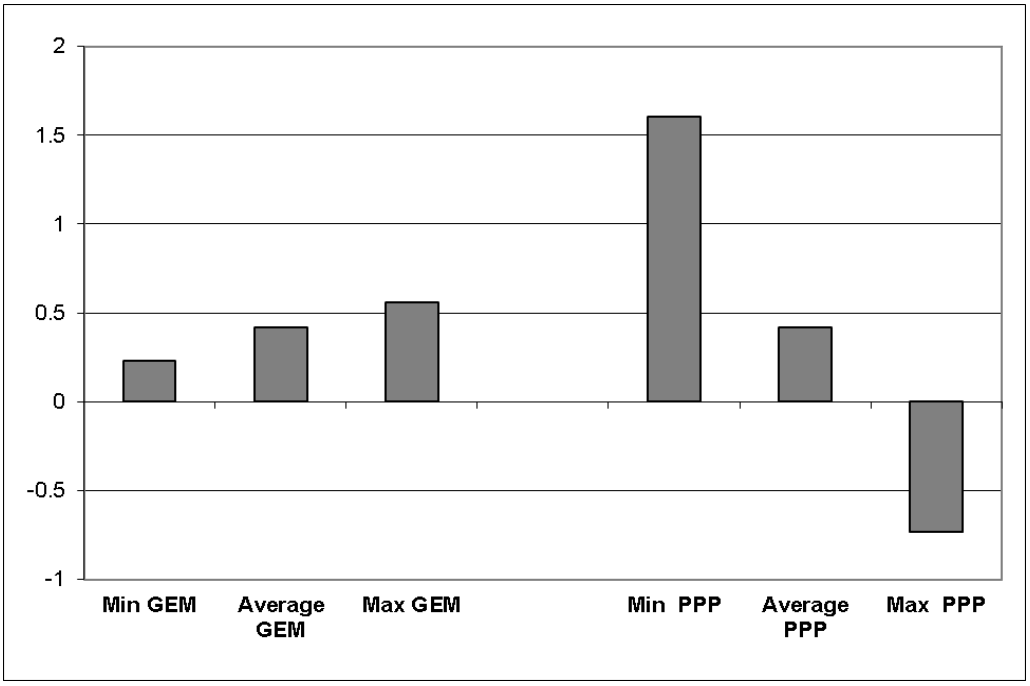
Source: ECHP, 1994-2001; Notes: *p < .05 **p < .01 ***p < .001; Continuous variables were centered around the mean; Min of centered GEM variable: -.262; Max of centered GEM variable: .193; Min of centered PP variable: -29.661; Max of centered PP variable: 28.787; B=coefficient; SE=standard error of the coefficient; Ln=natural log

Figure 1 illustrates the relevance of the cultural and economic context for the relationships between incomes of partners. We considered a 5% increase in partner income and the situation with average GEM scores (GEM=0), minimum GEM scores (GEM=-.262), and maximum GEM scores (GEM=.193) as well as average PP scores (PP=0), minimum PP scores (PP=-29.661), and maximum PP scores (PP=28.787). The following formulas are used:

$$\text{Female Income} = .084 \times \text{Partner Income} + .143 \times \text{Partner Income} \times \text{GEM}$$

$$\text{Female Income} = .084 \times \text{Partner Income} + -.008 \times \text{Partner Income} \times \text{PP}$$

Figure 1: The relevance of the cultural and economic country context: Increases in female income due to 5% partner income increases



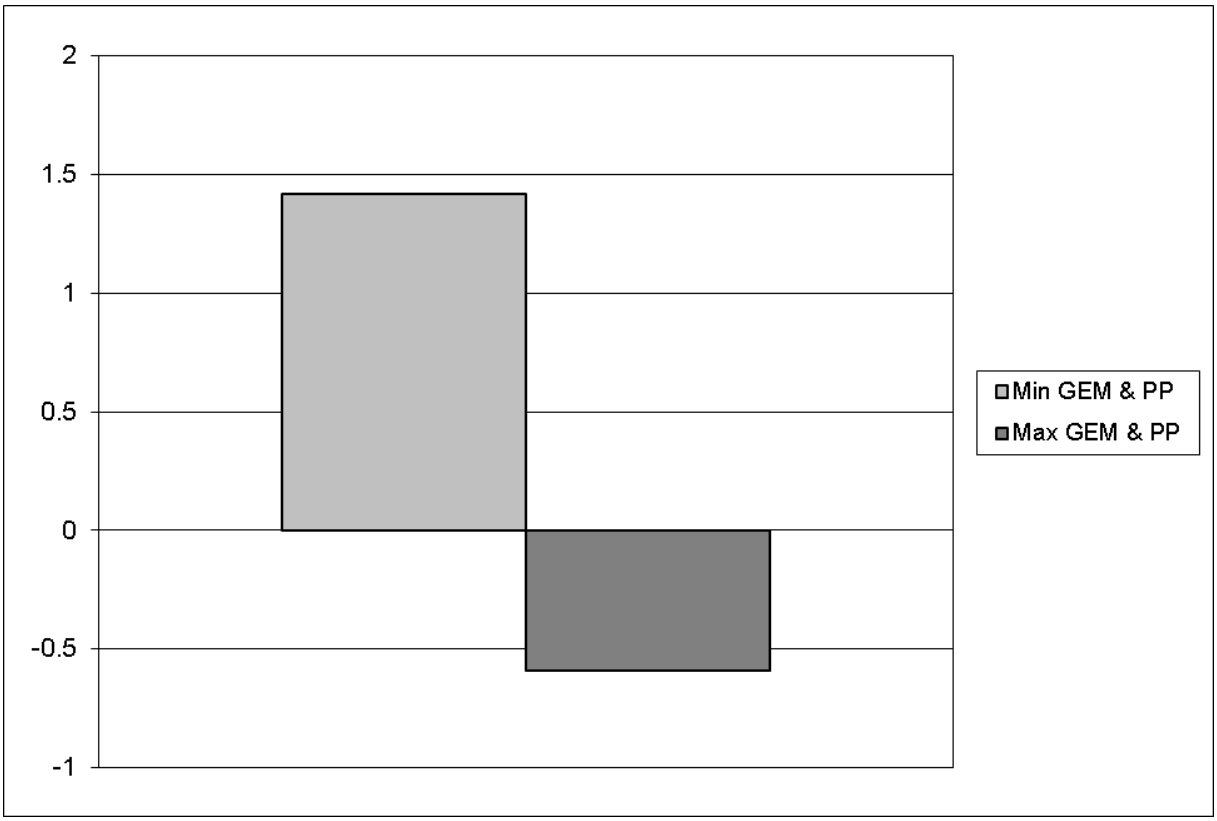
Source: ECHP, 1994-2001; Note: GEM=Gender Empowerment Measure; PP= Purchasing Power of average male income

All other variables being constant, a 5% increase in the income of the male partner increases women's income by 0.420% in country contexts with average GEM scores (5×.084=.420), by .233% in country contexts with minimum GEM scores (.420+(5×.143×-.262)=.233) and by .558% in countries with maximum GEM scores (.420+(5×.143×.193)=.558). Thus, the results show that the relationships of partners' incomes are not negative in countries with more traditional gender ideologies but still less positive than in countries with more egalitarian gender ideologies. With respect to the economic context, the model predicts that women's income increases by .420% in country contexts with average PP (5×.084=0.420) and by 1.606% in country contexts with minimum PP (.420+(5×-.008×-29.661)=1.606), and that it decreases by .732% in countries with maximum PP (.420+(5×-.008×28.787)=-.732).

The Netherlands scores very high and Greece very low on the GEM and PP measures (see Table A). We therefore also investigate the situation in countries with maximum GEM and PP scores and minimum GEM and PP scores in Figure 2, offering additional insight into the influence of the cultural and economic context. Countries with a very high score on one country characteristic and a very low score on the other country characteristic do not exist

(note that the correlation between GEM and PP was .65). In a country context with maximum scores on both indicators, a 5% increase in male partner income decreases women's income by .594% ((5×.084)+(5×.143×.193)+(5×-.008×28.787)=-.594). In a country context with minimum PP and a minimum GEM score, a 5% increase in male partner income increases women's income by 1.419% ((5×0.084)+(5×0.143×-0.262)+(5×-0.008×-29.661)=1.419). Thus, the economic country context seems to be more influential than the cultural context. This implies that even if the Netherlands scores relatively high on the GEM indicator the high scores on the PP indicator lead to negative partner income influences as shown in the separate analysis for the Netherlands. Similarly, for Greece especially the low PP scores seem to lead to relatively large positive partner income effects.

Figure 2: Comparing the relevance of the cultural and economic context: Changes in female income due to 5% partner income increases



Source: ECHP, 1994-2001; Note: GEM=Gender Empowerment Measure; PP= Purchasing Power of average male income

Since Portugal seems to be an outlier with very low PP and an exceptionally large positive male partner income coefficient in Table 2 we re-estimated the results of Table 3 without Portugal. This indeed changed the effect of the interaction between the cultural context and male partner income. In the model on women's income the interaction turned out to be not significant. In the model on women's wages the effect turned out to be even negative. This was not the case when deleting one of the other countries. Only deleting the Netherlands also turned the interaction effect between GEM and male partner income on women's income into non-significant. Therefore, future research with more countries needs to investigate whether these inconsistent findings are due to the limited amount of countries or if indeed the cultural context is less important for the relationship of incomes and wage rates of partners.

5. Discussion

In this study, we investigated the relevance of male partner income for female income and wage rate in different European countries applying economic and social capital theory. Moreover, we were interested in the question whether the cultural and economic country context causes differences in the influence of male partner income on female income and wage rate.

We conclude that, in line with the idea of partners' linked lives (Moen 2003; Pixley and Moen 2003), the income of the male partner is likely to influence the income and wage rate of the female partner. Thus, the correlations between the incomes of spouses shown in previous research (Henz and Sundström 2001; Juhn and Murphy 1997; Schwartz 2010; Verbakel 2008) are at least partly due to male partner income influences. We tried to make this effect visible with the help of fixed effect models. Fixed effect models only consider the relevance of changes in income by the male partner affecting income changes of the female partner (Allison 2005; Castilla 2007; England et al. 1988; Waldfogel 1997), thus controlling for income and educational homogamy as well as stable shared resources and restrictions in the surrounding. However, it is possible that our results are partly due to shared restrictions or resources which change over time e.g. local labor markets which improve over the years. Thus, an alternative interpretation of our results could be that changes in the local labor market have increased the income of both partners.

Our results do not imply that income homogamy and stable shared resources and restrictions in the environment do not also cause the correlations between the incomes of

spouses. It remains an open question which mechanisms are most influential: partner income influences, educational homogamy or shared resources and restrictions in the surrounding.

We further conclude that the relationship between incomes and wage rates of partners are mostly positive. It seems that women profit from a partner who is successful on the labor market. Women with such a partner are more able to increase their hourly wages and to invest more hours on the labor market increasing their total income. Thus, we find more evidence for the resource perspective based on social capital theory (Coleman 1990; Granovetter 1974) and little evidence for the restriction perspective based on economic theory (Becker 1991; Blau and Ferber 1986; Bryant 1990). The finding that male partner income is positively related to female income in most of the countries implies that the male partner's income situation is less likely to explain the gender income gap. To the contrary, the gender income gap seems to reduce due to processes within households.

The results of this study also imply that a country's economic context is an important moderator of the relationship between partners' incomes. Our results suggest that when the average income in a country holds a high purchasing power, couples will tend to specialize more in respect to time and effort on the labor market and at home. In contrast, the need for an additional income (England 2010) appears to encourage the female partner to use her male partner's resources for her own career advancement. Economic necessity therefore appears to work against specialization. These insights seem to explain why positive income influences of the partner were especially large in countries such as Portugal, Greece or Italy. This seems to be due to a relatively low purchasing power of average income within the countries. That only in the Netherlands male income negatively affected female income can be explained by the fact that it is the country with the highest purchasing power of average income. These circumstances encourage part-time employment by female partners which is also highly available in the Netherlands, a country where the one and a half earner family is quite common. This variation in male partner income effects might be an explanation for country differences in women's income.

Contrary to our expectations the results on the relevance of the cultural context for male partner income effects were less stable. Considering all countries in the analysis, we found that in more egalitarian contexts male partner income is more positively associated with female income than in more traditional cultures. This is in line with the arguments of Blossfeld and Drobnič (2001) and Verbakel (2010) and the findings of Fuwa (2004) which has revealed the importance of an egalitarian country context for a more equal division of

household labor within couples. However, the moderating influence of the cultural contexts disappeared when we deleted Portugal or the Netherlands from the analysis. Whether this is caused by the limited number of countries or whether the cultural context is indeed of less relevance for the relationships of incomes of partners needs to be investigated in future research with more countries. Moreover, it would be interesting to investigate regional differences in the relationships of incomes of partners as it is likely that gender cultures and norms also vary within countries.

In line with Bernardi (1999), Bernasco, de Graaf and Ultee (1998) and Verbakel (2008), we assumed that positive partner income influences take the form of social network contacts, help with income negotiation skills, or spillover of work ambition between partners. Moreover, we argued that a high household income is used to outsource care and household tasks, enabling women to work more hours. Future research could investigate whether these processes indeed exist and which of these mechanisms is most important. Moreover, further interesting insights about linked lives of partners could be gained by researching whether partners coordinate their work decisions or whether income influences between partners are more implicit and indirect. This could be done with the help of interviews asking partners to describe their decision making in respect to the division of labor and own career investments.

Our analysis did not include women who had never an income throughout the whole period. This is likely to mean that partner income effects have been underestimated, because including women who do not work would increase the variance in the income situation of both partners. Previous research has already shown that the partner's socio-economic position influences women's entry into and exit from the labor market (e.g. see Blossfeld and Drobnič 2001 for a summary). Future research is necessary to investigate how male partner influences on labor market participation and earnings are interrelated.

Overall, our results show the importance of incorporating the economic situation in country comparative research on gender inequalities and women on the labor market. Previous research has mainly considered the institutional context (e.g. Gornick, Meyers and Ross 1998, Gornick, Meyers and Ross 2003; Mandel and Semyonov 2006). Considering the cultural and economic context next to the institutional context would further allow investigating the relationship between them. Future research could further consider the institutional context for partner income influences if data on tax incentives for a dual earner, male breadwinner or one and a half earner family get available for all countries and all years of the ECHP.

6. Appendices

Table A: Time varying country indicators

	Gender Empowerment Measure (GEM)	Purchasing power of average male salaries (PP)
	M of period 1994-2001	*M* of period 1994-2001
Austria	.71	44.18
Belgium	.65	53.82
Denmark	.76	60.13
Finland	.77	46.71
France	.52	44.51
Germany	.72	49.53
Greece	.45	29.19
Ireland	.59	47.99
Italy	.55	40.28
Netherlands	.72	64.58
Portugal	.59	20.79
Spain	.62	36.10
UK	.62	49.12

Source: ECHP, 1994-2001; UNDP 2012

Table B: Pooled results: Fixed effect models of income influences of the male partner for female income and wages

	Ln(female income)		**Ln(female wage rate)**	
	Model 1	**Model 2**	**Model 1**	**Model 2**
Constant	7.064***	7.049***	3.605***	3.589***
Ln(male partner income)	.053***	.152***	.078***	.176***
Work experience/10	.109***	.376 ***	.085***	.358***
Work experience²	-.022***	.016***	-.020***	.018***
Number of children	-.081***	-.069***	.008*	.020***
Married	-.024**	.019*	.010	.054***
Time varying country indicators				
GEM	.299**		.336***	
PP	.016***		.016***	
Interaction Partner Income with …				
GEM		.316***		.155**
PP		-.006***		-.005***
R2 (within)	.165	.135	.209	.169
F statistics	.000	.000	.000	.000

Notes: *p < .05 **p < .01 ***p < .001; Continuous variables were centered around the mean; Ln=natural log

Chapter V: Human Capital and the Gender Gap in Authority in European Countries[12]

[12] This chapter is in press and has been published online, European Sociological Review 2011; doi: 10.1093/esr/jcr059 41, co-authored by Ineke Maas and Tanja Van der Lippe.

1. Introduction

Men are still much more likely than women to occupy an authority position. However, European countries differ considerably in the size of the gender gap in authority (European Commission 2008; Mandel and Semyonov 2006; Moore and Shackman 1996; Rosenfeld, van Buren and Kalleberg 1998; Yaish and Stier 2009). For example, in the United Kingdom, 35% of the employees in authority positions were female in 2006, whereas in Denmark this was the case for 24% (European Commission 2008). Since positions of authority in companies are related to higher income and more influence, this suggests an ongoing gender inequality on the labor market (Rosenfeld, Van Buren and Kalleberg 1998; Wright, Baxter and Birkelund 1995).

In this chapter, we investigate why women are less likely than men to hold a position of workplace authority and why countries differ in this respect. We do so by studying more closely differences in male and female human capital, which is perceived as a main predictor for access to authority (Mandel and Semyonov 2006; Hultin 1998; Mueller, Kuruvilla and Iverson 1994; Rosenfeld, Van Buren and Kalleberg 1998; Schippers 1995). The findings of previous research have been inconsistent in this respect. In some studies, human capital played a substantial role in explaining the gender gap in authority (Hopcroft 1996; Wolf and Fliegstein 1979), whereas in others its explanatory power was marginal (Hultin 1998; Mueller, Kuruvilla and Iverson 1994). In addition, McGuire and Reskin (1993) and Hultin (1998) found that the return on investment in educational attainment and overall work experience is lower for women than for men when it comes to achieving a position of authority. Wolf and Fliegstein (1979), on the other hand, showed that women enjoyed a higher return than men on overall work experience and specific experience with the current employer and that there was no difference between the sexes in the return on education when it comes to attaining a position of authority.

There seem to be several possible reasons for these contradictory findings. First of all, they may be related to different national contexts. Hultin (1998) and Mueller, Kuruvilla and Iverson (1994) tested the relevance of human capital in the Scandinavian countries, whereas Wolf and Fliegstein (1979) and Hopcroft (1996) used an American sample. Secondly, authority has several dimensions, and research on the gender gap in authority has focused on different aspects of authority, such as supervisory authority, sanctioning authority, decision-making, or a formal hierarchical position (Hopcroft 1996; Rosenfeld, Van Buren and Kalleberg 1998; Wolf and Fliegstein 1979; Wright, Baxter and Birkelund 1995; Yaish and

Stier 2009). Thirdly, studies differ as to how they operationalize human capital. Regarding work experience, for example, Mandel and Semyonov (2006), Mueller, Kuruvilla and Iverson (1994) and Rosenfeld, Van Buren and Kalleberg (1998) used only age as a proxy for experience, whereas Hopcroft (1996) used the period of time since the individual had started his or her first job. McGuire and Reskin (1993) used information about current job tenure, and Hultin (1998) and Wolf and Fliegstein (1979) used the time the individual had been working, adjusted for work interruptions.

We will improve upon previous research in several ways. In our study, we will explore the gender gap in authority in a broad range of contexts, i.e. 24 European countries. We define an authority position as a job in which an individual supervises employees since this is the most common focus in recent research on the gender gap in authority (e.g. Rosenfeld, Van Buren and Kalleberg 1998; Yaish and Stier 2009). Supervisory authority most clearly describes what a person with authority does and how he or she relates to other employees (Rosenfeld, Van Buren and Kalleberg 1998). Moreover, supervisory authority is broader than sanctioning authority or decision-making authority since it includes the supervision of work of subordinates but can also include hiring, firing, pay raises, promotions as well as sanctioning. A formal hierarchical position would under represent authority positions on the labor market since positions which are not named manager or supervisor can and do include supervising roles (Yaish and Stier 2009). The degree of authority in this chapter will be indicated by the number of employees supervised.

Furthermore, we will not only use the indicators of human capital from previous studies but also extend these by a number of new indicators. Previous research on the relevance of differences in human capital in explaining the gender gap in authority focused mainly on educational attainment, the accumulation of work experience and experience with the current employer, neglecting other aspects of human capital. For example, studies rarely considered gender differences in human capital depreciation due to career interruptions (Becker 1985; Mincer and Polachek 1974). The same holds true for obvious gender-specific distinctions in the type of educational program men and women choose. Women are more likely to enrol in humanities and social sciences, and men in economics and technical programs (Bock and Van Doorne-Huiskes 1995; Kalmijn and Van der Lippe 1997). Educational specialization has been found to be relevant for gender income inequality and labor market entry (Daymont and Andrisani 1984; Gerhart 1990; Kalmijn and Van der Lippe 1997; Tam 1997; Van de Werfhorst 2001). Educational specialization may therefore also be

relevant within the context of the gender gap in authority. So far, Hultin's Swedish study (1998) is the only one to have used the field of highest educational attainment as a control variable, but it did not report the results.

Differences in men's and women's human capital and varying returns on that capital may explain not only the gender gap in authority within a country but also differences in the gender gap between countries. This is the second topic of our study. Countries differ with respect to gender inequality in human capital, partly as a result of explicit state policies, for example leave rules, partly resulting from country characteristics that are only indirectly affected by the state, such as gender segregation in education, and the availability of part-time work. Results are not conclusive yet whether this impacts the gender authority gap. Mandel and Semyonov (2006), and Rosenfeld, Van Buren and Kalleberg (1998) showed that long leave arrangements have negative consequences for women's likelihood of attaining a position of authority. Yaish and Stier (2009), however, did not find this effect. Summarizing, we pose the following research questions: To what extent do differences between men and women in human capital and their return on investment in human capital explain the gender gap in authority in Europe? And to what extent do gender differences in the composition of human capital and the return on investment in human capital, as well as differing country characteristics affecting that composition explain cross-national differences in the gender gap in authority?" To answer the research questions, data from the European Social Survey 2004/2005 will be used.

2. Theory and hypotheses

2.1 Differences between men and women in the amount of human capital

Human capital theory (Mincer 1974; Becker 1993) suggests that individuals with a larger amount of human capital have a better chance of achieving a position of workplace authority since human capital is used as a predictor for future productivity. For example, individuals with extensive work experience are expected to be more productive in a position of authority than individuals with only little experience. Several empirical studies confirm that human capital is a main predictor of the chance to hold an authority position (e.g. Mandel and Semyonov 2006; Rosenfeld, Van Buren and Kalleberg 1998; Wolf and Fliegstein 1979).

Human capital theory further suggests that the stock of human capital depends on the formation of new and the depreciation of the existing stock of human capital (Becker 1985; Mincer and Polachek 1974; Schippers 1995). In order to accumulate human capital,

individuals invest in education and in continuous employment participation, which allows them to learn new and relevant skills and to upgrade old ones. According to human capital theory, these investments are a result of a cost–benefit calculation, which is likely to differ between men and women. Although gender differences in educational attainment between men and women have been found to have diminished or even disappeared in recent years (European Commission 2007), one obvious gender-specific distinction can be seen in the type of educational program men and women invest in. Women are overrepresented in care-related and sociocultural programs and men in technical and economic ones. According to the theory, women take later child-care responsibilities into account in their cost–benefit calculation and thus invest in educational programs that end up in occupations that are more compatible with later caring tasks, e.g. a caring or socio-cultural education, and not in technical and economic education (Bock and Van Doorne-Huiskes 1995; Desai and Waite 1991; England 2005). The latter specializations appear to be advantageous for professional career paths (England 2005; Kalmijn and Van der Lippe 1997). For example, economics programs often include management training, which allows those enrolled to accumulate necessary knowledge for a position of authority. In contrast, socio-cultural and care-related programs prepare students for segments of the labor market that often offer fewer positions of authority (e.g. schools) than those segments associated with an economics or technical education program. We therefore hypothesize:

H1: The gender gap in authority can be partly explained by women's tendency to invest in socio-cultural and care-related educational programs and men's tendency to invest in technical and economic–administrative ones.

Women and men also show different investments in work experience. Compared to men women build up less work experience because they more often interrupt their career and more often work part time. According to New Home Economics and human capital theory, this is the result of an efficient division of tasks between men and women, in which men specialize more in paid labor and women more in caring. We hypothesize:

H2: The gender gap in authority can be partly explained by the fact that women have less work experience than men, such as less overall work experience, less experience with the current employer, and fewer working hours.

In addition, it has been argued that career interruptions lead to a depreciation of accumulated human capital due to non-use during the period spent outside paid labor (Becker 1985; Mincer and Polachek 1974). Since career interruptions are more typical for women due to their greater care related and household responsibilities, we hypothesize:

H3: The gender gap in authority can be partly explained by the fact that women have longer career interruptions than men.

2.2 Men's and women's differing returns on the investment in human capital

The second explanation for the gender gap in authority is related to the demand of female candidates for positions of authority. Human capital theory implies that employers choose applicants with the highest expected productivity. Women are seen as bearing more responsibility than men for care-related tasks at home and as more likely to take leave and work part time and they are therefore expected to be less productive in the future (England 1994; Phelps 1972). The whole process will result in lower return on women's investment in the different aspects of human capital than her male counterpart. The different returns on human capital of men and women will be tested separately for each indicator of human capital. We hypothesize:

H4: Women receive lower returns than men on their investment in a high level of education, in technical and economic–administrative education, overall work experience, experience with their current employer and working hours.

2.3 Cross-national differences

Differences in the investments in human capital between men and women are unlikely to be the same across Europe. European countries differ in their institutional structures (Esping-Andersen 1990, 1999), which can affect the investments in human capital of men and women. In this section, we focus on three country characteristics that can—in principle—be affected by state policies: leave policies, the availability of part-time work, and the level of segregation in education. Of these three, leave policies are most directly influenced by the state. The

availability of part-time work and level of segregation in education depend on many things, among which the individual choices of men and women.

However, through laws, as a main employer, and as the main financer of education, the state can potentially affect these country characteristics as well. Leave policies differ in length and benefit amount from one country to the next (Plantenga and Remery 2005), affecting how much experience women accumulate and the length of their career interruptions compared with men. Similarly, the availability of par-time work for women in a country facilitates the combination of work and care. It can increase the difference between men and women in number of working hours and consequently the amount of work experience each one has. Countries also differ with respect to the likelihood that girls study more masculine-typed subjects (European Commission 2007). Moreover, differences in workplace and family support for the integration of work and care between countries (Abendroth and Den Dulk 2001; Abendroth, Van der Lippe and Maas 2012) are likely to cause differences of the accumulation of human capital between countries. We hypothesize:

H5: Differences between countries in the gender gap in authority can be partly explained by differences in men's and women's human capital between countries.

H6: Differences between countries in the gender gap in authority can be partly explained by leave policies, the availability of part-time work, and segregation in education by affecting the composition of men's and women's human capital.

2.4 Other explanations

In this section, we draw attention to the fact that some of the hypotheses that we derived from human capital theory can also be formulated based on other theoretical argumentation. Theories on gender ideology (e.g. Shelton and John 1996) suggest that traditional gender attitudes will cause a more unequal division of household labor with the women being mainly responsible for household and caring demands and the men for income and financial needs. Because they bear more family responsibilities than men, women's career profiles more often include career interruptions and part-time employment, reducing investments in work experience. Likewise, gender ideologies can stimulate women to choose female-typed educational programs. Traditional gender roles can trigger employer discrimination and lead to lower returns to human capital for women. At the country level, not only different policies

but also different gender ideologies can cause a variation in men's and women's human capital between countries [although Yaish and Stier's (2009) findings did not support this]. Note that these cultural explanations to some extent overlap with human capital theory. They also stress the importance of education and an uninterrupted working career. The difference between the two theoretical approaches lies in the explanation of why men and women differ with respect to their accumulation of these types of human capital. In the present research, we will not be able to solve this issue.

The self-selection argument gives a different reasoning for lower returns of women to the different aspects of human capital in comparison to men. Since women still bear the main responsibility for household and care-related tasks, and since a position of authority is highly demanding and often requires overtime and flexibility, it may be more difficult for a woman to choose such a position even if she is highly educated and experienced (Eurofound 2009; Wright, Baxter and Birkelund 1995). In addition, stereotypes suggesting that a management position requires more masculine traits can result in stereotype threat, making highly educated and experienced women less confident about applying for such a position (Bergeron, Block and Echtenkamp 2006; Steele 1997). In line with this, previous research has shown the relevance of the family situation for a position with authority for women (e.g. Mueller, Kuruvilla and Iverson 1994; Yaish and Stier 2009). The self-selection mechanism is really an alternative to human capital theory. In order to take this alternative explanation into account, we will control for being married or cohabiting and for the number of children in the household.

3. Data and Methods

3.1 Data

We tested our hypotheses by using data from the European Social Survey (ESS) 2004/05 and information about state policies from various other sources (e.g. OECD 2003; Plantenga and Remery 2005). The second round of the ESS in 2004/05 collected data from 49,066 respondents in 26 countries. This round includes rich data on various aspects of human capital, making this survey suitable for our research. The response rates for the participating countries ranged between 44% for France and 79% for Estonia.

Since all hypotheses in our study are formulated for working men and women, a subsample of the ESS 2004/05 was selected for the analysis. We have chosen employed women and men aged 18–65 years who reported being in paid labor as their main activity.

Self-employed are excluded. Missing information on the dependent or independent variables, which will be described in the following section, was imputed five times per country and gender using multiple imputation procedures in Stata (ICE). Only those cases (19) without information on the respondent's gender were deleted. The subsample comprises respondents from 24 countries: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Slovenia, Switzerland, Turkey, United Kingdom, and Ukraine. Data from France and Slovakia were dropped, France because there was no information on the specific field in which the respondent had attained his/her highest level of education (one of the key variables in this research), and Slovakia because respondents mainly answered that they had had a general education, making multiple imputation on this variable impossible. This left us with 17,775 cases.

3.2 Measurement

Dependent Variable

The ordinal dependent variable *supervisory position* was operationalized by combining the question 'In your main job do/did you have any responsibility for supervising the work of other employees?' and—if the respondent answered yes to the previous question—'How many people are/were you responsible for?' Since our sample is restricted to employed respondents our measurement only captures a supervisory position at the time point of the interview and not in the past. The number of people supervised was not normally distributed. We therefore constructed four categories: responsible for 0, 1–5, 6–10, and more than 10 people (see Table 1).

Independent Variables

Being *female* was coded 1 and being male 0 in this study. Level of education was operationalized by asking how many *years of full-time education* the respondent had completed. To measure *educational specialization*, we summarized information on educational field into: general, technical (technical and engineering, science/mathematics/computing/etc.; public order and safety), economic–administrative (economics/commerce/business administration, law and legal services, transportation and

telecommunication, agriculture/forestry), socio-cultural (art, fine/applied, humanities, teacher/training/education, social studies/administration/media culture), and care related (personal care services, medical/health services/nursing, etc.) (see Kalmijn and Van der Lippe 1997). If this information was missing, we incorporated information on the highest level of education that sometimes indicated a technical or general education.

Table 1: Descriptives individual-level variables (N=17775)

	Male	Female	T-Test/ Pearson Chi²
	Mean/%	Mean/%	P-value
Dependent variable			
Supervisory Authority			.000
Supervising 0 employees	63.87	75.60	
Supervising 1 to 5 employees	17.61	14.35	
Supervising 6 to 10 employees	8.13	4.75	
Supervising more than 10 employees	10.39	5.30	
Independent variables			
Gender	51.44	48.56	
Years of education	12.81	13.28	.000
Educational specialisation:			.000
General	24.04	23.71	
Technical	42.61	9.78	
Economic-administrative	16.69	21.40	
Socio-cultural	10.12	21.01	
Care-related	6.54	24.10	
Total years of work experience	19.99	18.59	.000
Years of experience with current employer	10.41	9.72	.000
Working hours	39.29	34.81	.000
Months of interruptions due to child care	.00	23.27	
Interruptions due to unemployment:			.000
0-3 months	71.81	73.10	
3-12 months	19.66	17.16	
More than 12 months	8.53	9.74	
Control variables			
Married/cohabiting[a]	69.13	64.98	.000
Number of children	.89	.90	.445
Firm size	144.89	123.32	.000

Source: ESS 2004/2005; Note: Mean and percentage based on imputed data sets; not possible to calculate standard deviations
Notes: [a]Married/cohabiting: 0 = not married or cohabiting, 1 = married/cohabiting

To measure total *work experience*, we used information on the total number of years in full-time or part-time work. Since total work experience was highly correlated with age, we did not use age as a further control variable. To measure *experience with the current*

employer, we subtracted the year the respondent started working for his/her current employer from the year of the interview.

We measured *working hours* as the number of hours the respondent is supposed to work. Ideally, we would have had information about the respondent's working hours throughout his/her employment history in order to weight total years of experience. Unfortunately, this information was not available. We treated current working hours as an indicator for previous working hours. Thus, reverse causality is possible. Employees with an authority position might work more hours than those without such a position. As a consequence, we have to interpret the effect of working hours on the chance to hold a higher supervising position with care. Outliers of over 60 hours a week were recoded into 60 working hours.

We constructed a continuous variable regarding months of *interruption due to childcare*, taking the mid-value of the categories 'never spent time at home full time because of children (0 months)', 'up to six months (3 months)', 'more than 6 and less than 12 months (9 months)', 'more than one and less than 2 years (18 months)', 'more than 2 and less than 4 years (36 months)', 'more than 4 and less than 10 years (84 months)' and the lowest value for the final category, 'more than 10 years (120 months)'. Men were recoded into 'no interruption due to childcare' since they were not asked the question; it is well known that men hardly ever take up leave (OECD Family Database 2010). *Interruptions due to unemployment* were operationalized by three dummy variables: never been unemployed or unemployed for less than 3 months; unemployed for more than 3 months; and unemployed for 12 months or more. More detailed information on the length of these career interruptions was not available.

Control Variables

We used information about relevant family characteristics as control variables, for example, whether the respondent is *married* or cohabiting and the *number of children* living at home. Moreover, we constructed a continuous variable, *firm size*, taking the mid-value of the categories 'fewer than 10 employees (5)', '10–24 employees (17)', '25–99 employees (62)', '100–499 employees (300)' and the lowest value for the final category, '500 or more employees (500)'. This variable indicates the potential number of people that respondents could actually supervise, although it might also lead to an endogeneity problem, as people who want a position in a higher supervisory category might move to a larger firm for that reason.

State Policies

The supportiveness of leave arrangements was measured as effective parental leave, as provided by Plantenga and Remery (2005). *Effective parental leave* was calculated by weighting the total weeks of maternity and parental leave by the level of payment. The level of payment was set to 33% if the benefit was between 0% and 33% of minimum wage, 66% if the benefit was between 34% and 66% of minimum wage and 100% if the benefit was between 67% and 100% of minimum wage. Since Plantenga and Remery (2005) did not provide this information for Turkey, Estonia, Switzerland, and Ukraine, we calculated effective parental leave for these countries using information from the OECD Economic Study (2003), OECD Family database (2012), and Rostgaard (2004). We used the index of dissimilarity (Duncan and Duncan 1955) to measure the overall *gender segregation in education* in countries. The index measures the proportion of women who would have to change educational specialization in order to eliminate gender segregation (ID = $1/2\Sigma$ | [(w/W)-(m/M)]) (w=women in a study field; W=the total number of women; m=men in the study field; M=the total number of men). To measure *availability of part-time work*, we took the percentage of working women (18–65 years) in part-time employment (≤34 h) in the ESS 2004. Appendix Table A summarizes the indicators for the state policies per country.

3.3 Methods

In order to study the relevance of gender differences in human capital for the gender gap in authority and the differing returns on human capital between men and women, we used hierarchically ordered logistical regression. Not applying a hierarchical analysis would result in biased standard errors because of the dependence of individuals within countries. An ordered logistical regression is necessary because the dependent variable has four-ordered categories. We estimated several models with gender, the various aspects of human capital, and the interaction effects between human capital and gender. In the final model, we added the control variables because they can be part of a combined decision; choosing to work for a small company, for example, may reflect the decision not to aim for a position in a higher supervisory category, which may include supervising many employees. Moreover, reversed causality is possible. For example, women with an authority position might be less likely to get children.

Secondly, to study the relevance of human capital and related state policies for cross-national differences in the gender gap in authority, we used a hierarchically ordered logistical model in which the effect of gender can vary between countries (i.e. including a random slope for gender). The variance of the effect of being female captures differences in the gender gap in authority between countries. We investigated to what extent we can explain the variance of the effect of being female by adding individual and country-level characteristics. Several models were estimated. The first model only shows if there are country differences in the gender gap in authority. In the second model, we tested if differences between countries in the gender gap in authority are due to differences in men's and women's human capital between countries. Therefore, we added all the indicators of the previous analysis (human capital, interactions between human capital and gender, and the control variables) to the first model. In the third model, we only included country characteristics. The final model included all the indicators (human capital, country context, and control variables). Comparing the last two models allowed us to determine whether the effect of the country characteristics works through human capital and whether there is an additional direct effect.

4. Results

4.1 Relevance of gender differences in human capital and the return on human capital

Table 2 includes tests of our individual-level hypotheses. There was significant variation between countries in the likelihood of holding a position of authority, confirming the need to perform multilevel analysis. The change in the log likelihood showed an improvement of model fit from model-to-model. Model 1 shows that overall women have a poorer chance than men of reaching a position of greater authority. The odds of attaining a position in a higher supervisory category are almost two times lower for women than for men (Exp(-.620)=.537).

Model 2 included educational attainment. Years of education have a significant and positive effect on the likelihood of attaining a position in a higher supervisory category. After taking the educational level of men and women into account, the gender gap in authority is even larger than visible at first. This is because women nowadays are higher educated than men, which can also be seen in Table 1.

Model 3 included educational specialization. As expected, a technical and economic–administrative education more often results in a position in a higher supervisory category than a socio-cultural education. Including the indicators of educational specialization in the model decreased the difference between men and women in the gender gap in authority. The change

is small, however, providing little support for Hypothesis 1, which stated that women's investments in socio-cultural or care-related education and men's investments in technical or economic–administrative education helps explain the gender gap in authority.

Examining the effect of the work experience indicators in Model 4 shows that total work experience, experience with the current employer and working hours have significant positive effects on the likelihood of holding a position in a higher supervisory category. Furthermore, work experience plays a considerable role in explaining the gender gap in authority. The effect of gender changed from -.633 in Model 3 to -.501 in Model 4. This is in line with Hypothesis 2, which argued that the gender gap in authority can be explained partly by differences in men's and women's work experience.

Career interruptions due to unemployment, added in Model 5, are negatively related to the amount of authority. Interruptions due to childcare show no significant relationship. The very small change in the effect of being female provides little support for Hypothesis 3, which argued that the gender gap in authority can be explained partly by women having longer career interruptions than men. In total, 20% of the gender gap in authority ((.620 - .497) / .620 × 100) can be attributed to differences in men's and women's human capital, due mainly to differences between them in work experience.

Model 6 includes the interaction effects between being female and human capital. We find that men and women benefit equally from educational attainment and specialization in technical or economic–administrative education. Men and women also have the same returns on total experience and working hours. Experience with the current employer, however, appears to be less beneficial for women in reaching a position in a higher supervisory category. In contrast, men are penalized more severely than women for long interruptions due to unemployment. This provides only scant evidence for Hypothesis 4, which argued that women benefit less than men from a high level of education, investments in technical or economic–administrative education, overall experience, experience with the current employer, and working hours.

The final model included the control variables. Marital status, number of children, and size of firm have a positive effect on the likelihood of holding a position in a higher supervisory category, explaining an additional small part of the gender gap in authority. The effects of the human capital variables hardly change in this model. The interaction effect between being female and unemployment becomes insignificant, although the effect size hardly changes.

Table 2: Relevance of the composition of men's and women's human capital and returns to human capital for the gender gap in authority

	Model 1: effect of gender		**Model 2:** + years of education		**Model 3:** + educational specialisation		**Model 4:** + work experience indicators		**Model 5:** + interruption indicators		**Model 6:** + interaction effects		**Model 7:** + control variables	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Female	-.620***	.062	-.688***	.059	-.663***	.062	-.501***	.062	-.497***	.061	-.421***	.119	-.388**	.121
Years of education			.113***	.010	.102***	.011	.121***	.012	.119***	.011	.122***	.014	.117***	.014
Educational specialisation (ref. socio-cultural):														
General					-.202	.108	-.236*	.120	-.230	.119	-.210*	.105	-.236*	.104
Technical					.195*	.080	.164	.087	.165	.088	.210*	.098	.177	.096
Economic-administrative					.295***	.083	.264**	.088	.256**	.089	.373**	.108	.355**	.110
Care-related					.186	.096	.183	.100	.174	.099	.115	.113	.096	.114
Total years of work experience							.016***	.003	.016***	.003	.017***	.003	.015**	.003
Years of experience with current employer							.020***	.003	.016***	.003	.020***	.003	.019***	.004
Working hours							.036***	.004	.035***	.004	.037***	.005	.036***	.004
Months of interruptions due to childcare									-.004	-.007	-.006	.007	-.015	.008
Interruptions due to unemployment (ref. 0-3 months):														
3-12 months									-.216***	.057	-.218**	.070	-.211**	.070
More than 12 months									-.441***	.087	-.548***	.112	-.528***	.109
Interactions female with:														
Years of education											-.007	.016	-.007	.015
Educational specialisation (ref. socio-cultural):														
General											-.025	.168	-.029	.169
Technical											-.093	.119	-.100	.119

Economic-administrative											-.232	.127	-.243	.127
Care-related											.066	.155	.055	.154
Total years of experience											-.002	.004	.001	.004
Years of experience with current employer											-.010*	.005	-.010*	.005
Working hours											-.002	.005	-.001	.005
Interruptions due to unemployment (ref. 0-3 months):														
3-12 months											.013	.112	.013	.109
More than 12 months											.241*	.122	.233	.123
Control Variables														
Married/cohabiting													.116**	.042
Number of children													.072***	.020
Firm size													.005***	.001
Cutpoints														
1	.607		.579		.688		.767		.689		.729		.804	
2	1.613		1.612		1.724		1.834		1.759		1.801		1.879	
3	2.303		2.314		2.427		2.557		2.482		2.527		2.607	
Country-level variance	.272***	.059	.211***	.041	.198***	.041	.251***	.057	.239***	.055	.233***	.054	.233***	.055
Log likelihood	-15880		-15597		-15551		-15255		-15227		-15215		-15184	

Source: ESS 2004/2005; Notes:*p < .05 **p < .01 ***p < .001; Coefficients from hierarchical ordered logit, N=24, n=17775; Continuous variables were centred around the mean; B=coefficient; SE=standard error of the coefficient

4.2 Explaining cross-national differences in the gender gap in authority

Table 3 presents the results regarding cross-national differences in the gender gap in authority. As can be seen in Model 1, such differences do indeed exist. The variance of the effect of being female is .052, which is significant at the 0.01 level.

Model 2 includes all variables from the final model of Table 2, namely human capital, differing returns on human capital for men and women, and the control variables (effects not shown). This increases the cross-national differences in the gender gap in authority (random slope of being female: .063). Thus, differences in the gender gap in authority between countries cannot be explained by the differences in men's and women's human capital between countries. Considering the composition of the population in respect to human capital even reveals bigger differences in the gender gap in authority between countries. Thus, no evidence is provided for Hypothesis 5, which argued that differences between countries in the gender gap in authority can be partly explained by differences in men's and women's human capital between countries.

We added only the country indicators and their interactions with the variance of the effect of being female to Model 3. Model 4 includes all human capital and policy indicators. Comparing Models 3 and 4 shows that the policy indicators do not influence the gender gap in authority through the composition of human capital, providing no evidence for Hypothesis 6. The interactions of the policy indicators with the effect of being female in Model 3 are not significant and do not reduce in their effect size while adding all aspects of human capital in Model 4. In contrast, there even seems to be a suppressor effect. In Model 4, a preponderance of part-time jobs is shown to reduce differences between men and women in the likelihood of holding a position in a higher supervisory category when we control for men's and women's human capital. The main effect of being female is still negative, but this negative effect is .320 smaller in countries with high amounts of part-time jobs than in countries with low amounts of such jobs (compare Appendix Table A: 40 × .008 = .320). This effect is not found in Model 3 where we did not control for all aspects of human capital. Leave arrangements and gender segregation in education do not explain differences between countries in the gender gap in authority. The difference between Models 2 and 4 in the variance of the effect of being female (.063 versus .050) indicates that 21% of the random slope (differences in the gender gap in authority between countries) was explained. However, only the availability of part-time work contributes to this explanation.

Table 3: Explaining cross-national differences in the gender gap in authority

	Model 1: Effect of gender and random slope of gender		**Model 2:** Human capital, interactions between human capital and gender and control variables		**Model 3:** Policy indicators		**Model 4:** Final model	
	B	SE	B	SE	B	SE	B	SE
Female	-.616***	.061	-.445***	.125	-.619***	.060	-.430***	.126
Variance of the effect of being female	.052**	.018	.063**	.022	.048**	.016	.050**	.015
Country-specific variables								
Availability part-time work					.021***	.004	.017***	.004
Leave policies					-.000	.003	-.003	.002
Gender segregation in education					.027***	.007	.017**	.007
Interaction Female with …								
Availability part-time work					-.002	.003	.008*	.004
Effective parental leave					-.000	.002	.000	.002
Gender segregation in education					-.004	.005	-.002	.005
Cutpoints:								
1	.626		.812		.599		.803	
2	1.634		1.889		1.608		1.880	
3	2.325		2.617		2.299		2.609	
Country-level Variance	.273***	.062	.194***	.054	.068***	.018	.070***	.021
Correlation Intercept and Slope	-.022	.024	.033	.020	-.000	.012	-.003	.013
Log Likelihood	-15869		-15170		-15854		-15157	

Source: ESS 2004/2005; Notes: *p < .05 **p < .01 ***p < .001; Coefficients from hierarchical ordered logit regression; N=24, n=17775; The effects of human capital, interactions between human capital and gender, and control variables are included in Model 2 and 4, but not shown; B=coefficient; SE=standard error of the coefficient

5. Discussion

In this study, we investigated the relevance of men's and women's human capital and the return on that capital for the gender gap in authority in Europe and for cross-national differences in that gender gap.

In line with the notion of deviating career profiles (Mincer and Polachek 1974; Schippers 1995), we conclude that differences between men's and women's work experience play a considerable role in explaining the gender gap in authority. Differences in the depreciation of human capital due to women's longer leave periods or unemployment (Mincer and Polachek 1974; Schippers 1995) do not appear to matter. A possible explanation is that

career interruptions are more expected and accepted of women than of men. This is in line with our finding that men are penalized more than women for long periods of unemployment. Although we also found that educational segregation affects the likelihood of reaching a position in a higher supervisory category, this has only marginal relevance in explaining the gender gap in authority and is therefore not in line with results regarding the gender pay gap (England 2005; Kalmijn and Van der Lippe 1997; Van de Werfhorst 2001). This may be because it is women who dominate in economic–administrative educational programs and not men as we expected. Thus, not all aspects of human capital are relevant for the explanation of the gender gap in authority. Important are only those which are related to the accumulation of work experience. All in all, a big part of the gender gap in supervisory authority remains unexplained.

We can further conclude that women do not gain lower returns on all their investment in human capital than men. Women only seem to benefit less from the accumulation of experience with the current employer. This suggests that employers favor male applicants to female internal applicants. This provides some evidence for a lower demand for female candidates (Bergeron, Block and Echtenkamp 2006; England 1994; Rosenfeld, Van Buren and Kalleberg 1998).

Finally, we have shown that European countries differ in the gender gap in authority but that cross-national variations in the composition of human capital cannot explain these differences. Taking these variations into account even increases visible cross-national differences in the gender gap in authority. This may be related to the differing role that human capital plays in human resource selection processes across countries. It may be, for example, that experience with the current employer is more important in some countries than in others. Our models allowed the returns on human capital to differ between men and women but not between countries. Such country differences would also explain the contradictory findings in the literature regarding the relevance of the composition of human capital in different countries.

A further conclusion is that the country characteristics included in this study do not affect the gender gap in authority through the composition of human capital in the various countries. However, a direct effect—not through human capital—was found for the availability of part-time work. The availability of part-time work explains a sizable share of the cross-national differences in the gender gap. The differences between men and women were smaller in countries that had a greater number of part-time jobs available than in

countries that provided less support for part-time work. This result contrasts with the idea of sheltered labor markets (Mandel and Semyonov 2006; Rosenfeld, Van Buren and Kalleberg 1998; Yaish and Stier 2009), which are thought to increase discrimination by employers. The availability of part-time work net of individual working hours instead appears to give women who aspire a position of authority the chance to demonstrate their ambition by working full time. In countries where part-time work is not generally available, this is less possible.

In line with the results of Yaish and Stier (2009) and contrary to the idea of sheltered labor markets (Mandel and Semyonov 2006; Rosenfeld, Van Buren and Kalleberg 1998), leave arrangements do not help explain the gender gap in authority. Moreover, we can conclude that gender segregation in education also does not influence the gender gap in authority. This implies that political attempts to desegregate education do not help to reduce the gender gap in authority.

Future research might investigate the role of part-time work in greater detail. We showed that supervisory positions are more likely to be held by men and women who work full time. However, we cannot rule out the possibility that they actually worked part-time before entering that position. Moreover, a higher number of working hours can also be a consequence of a supervisory position. Future research could collect information on the number of hours worked in previous jobs.

In addition, men in some countries are increasingly taking childcare leave. Studying the consequences of their doing so would give us a better understanding of how men's and women's career interruptions are evaluated by employers.

6. Appendix

Table A: Descriptives at country level

	Effective parental leave	Gender segregation in education	Availability of part-time work
	in weeks weighted by payment	index of dissimilarity (in %)	% of part-time working (<=34 hours) in ESS 2004
Austria	64	31	40.21
Belgium	18	38	48.66
Czech Republic	58	35	8.76
Denmark	47	43	31.93
Estonia	76	32	11.66
Finland	99	43	15.76
Germany	49	42	41.06
Greece	13	11	21.88
Hungary	114	38	8.81
Iceland	26	57	32.26
Ireland	11	33	46.87
Italy	24	31	36.37
Luxembourg	54	29	42.52
Netherlands	11	40	66.12
Norway	68	39	34.46
Poland	50	45	18.86
Portugal	21	21	17.34
Spain	50	22	20.89
Sweden	78	43	27.60
Slovenia	38	52	9.20
Switzerland	16	45	46.13
Turkey	8	23	18.30
United Kingdom	25	33	49.44
Ukraine	90	34	19.15

Sources: ESS 2004/2005, OECD Economic Study (2003), OECD Family database (2012), Plantenga and Remery (2005), Rostgaard (2004)

Chapter VI: Conclusion and Discussion

1. Summary of research findings

The topics of the previous research chapters were diverse because we wanted to research women's differing career outcomes and because we focused not only on differences between men and women in labor market outcomes, but also on differences between mothers, between women with and without children, and between women with differing partners. The research chapters also had several things in common. First, each chapter had a country comparative design and researched how context-related characteristics (of the country, workplace, or the family) shape the individual processes that explain women's labor market opportunities. Second, most of the chapters considered how the characteristics of the specific contexts interrelate in influencing women's opportunities on the labor market. The following elaborations summarize the findings of the previous research chapters.

Chapter II studied the influence of state, workplace, and family support on the working hours of employed mothers and how these different support sources interact. We argued that women work longer hours when policies facilitating the dual earner family, such as publicly funded child care and leave arrangements, are available. In addition, we suggested that they work shorter hours due to policies facilitating the male breadwinner or one and a half earner family, for example child benefits and the availability of part-time work. We further hypothesized that resources within workplaces and families that mitigate care demands at home or facilitate a better integration of work and family life allow mothers to work longer hours as well as role models within the family (being raised by a working mother). Finally, we provided arguments for possible substitutive or reinforcing relationships between the support sources. Data taken from the European Social Survey 2004/2005 as well as country-specific information were used to estimate several hierarchical models. We found evidence that the availability of supportive workplace arrangements, the partner's help with household and care tasks, and being raised by a working mother all have a positive impact on the working hours of employed mothers, and that state policies facilitating the male breadwinner or one and a half earner family have a negative impact. There is weak support for a general positive relationship between state policies facilitating the dual-earner family and the working hours of employed mothers. Publicly funded child care was only beneficial when workplace support was available and leave arrangements were only beneficial in some countries. Similarly, care and household help provided by family members outside the household did not appear to benefit mothers' working hours. We further showed that the support sources do not have a substitutive relationship. We found a reinforcing relationship between family role

models and supportive workplace arrangements in terms of their relevance for mothers' working hours, as well as a reinforcing relationship between publicly funded child care and supportive workplace arrangements.

In *Chapter III* we investigated the short-term and long-term impact of motherhood on the occupational status of women, and how these influences are moderated by work-family integration strategies (postponing birth, reducing parity) and family-friendly policies (expenditure on publicly funded child care and cash benefits to the family). We contrasted supply-side and demand-side arguments that lead to contradictory hypotheses about the likelihood of the motherhood penalty for occupational status rebounding or increasing over time. Moreover, we argued that the motherhood penalty would be larger for the first birth than for higher-order births and larger for births at younger ages than at older ages where a career has already been established. We further expected that state policies which reduce the double burden of mothers and boost mothers' labor supply (e.g. publicly funded child care) would weaken the motherhood penalty for occupational status, whereas state policies that restrict mothers' human capital accumulation because they allow mothers to specialize in care-related activities would even increase the long-term motherhood penalty for occupational status (e.g. cash benefits to the family). We used fixed effect models to exploit the longitudinal features of the European Community and Household Panel for thirteen European countries and eight time points between 1994 and 2001. We found that there is an occupational status penalty for first and second births. Our research results further demonstrated that the status losses for a first birth are not just short-term, but accumulate over the course of a career. The timing of a birth in a woman's life course mattered only for third births, which were only harmful for women's occupational status at older ages. This suggests that postponing birth or reducing parity will not minimize the negative impact of motherhood on occupational status over time. Cross-national evidence showed that publicly funded childcare is effective at diminishing the negative long-term consequences of motherhood for occupational status. Cash benefits to the family (child benefits or income replacement rates for a leave period) seem instead to increase the negative long-term consequences of motherhood for women's occupational status.

Chapter IV studied the effect of male partner income on women's income and wage rate in different country contexts. New Home Economics suggests that male partner income negatively affects female income and wage rate, whereas social capital theory suggests the opposite. We explored whether the applicability of these theories depends on the cultural and economic country context. Data taken from the European Community and Household Panel,

which comprises information on partner income trends between 1994 and 2001, were used to estimate fixed effect models. The Gender Empowerment Measure and the purchasing power of average male income were used as indicators for the cultural and economic country context. We found that the partner matters for women's income and wage rates. Only in the Netherlands did we find a negative relationship between the incomes of partners. Overall, having a partner who is successful on the labor market is more likely to be beneficial for women's income and wage rates. We further showed that the relevance of the male partner's income depends on the economic country context. Women's income and wage rate benefit particularly from the male partner's resources (as indicated by his income) when the purchasing power of the average income in a country is especially low. Less evidence was found for the argument that also gender cultures moderate this process.

In *Chapter V*, we investigated why women are less likely than men to hold a position of workplace authority and why countries differ in this respect. We focused on the importance of investments in different types of human capital and the returns on them. We also explored whether different compositions of women's accumulated human capital and the state policies likely to affect this composition (e.g. leave policies, the availability of part-time work, and attempts at gender desegregation in education) help explain cross-national differences in the gender gap in authority. Data from the European Social Survey 2004/05 and country-specific information were used to estimate several hierarchical models. Looking at Europe as a whole, we found evidence that the gender gap in authority can be attributed in part to the fact that women have less overall work experience, less experience with their current employer, and work fewer hours than men. Of less significance are differences between men and women in educational specialization and career interruptions due to child care demands or unemployment. We found that women got a lower return on their investment in human capital than men only with respect to experience with current employer. The consequences of career breaks were even more severe for men than for women. Regarding differences between countries in the gender gap in workplace authority, the research showed that human capital composition in differing countries did not explain cross-national differences in the authority gender gap, nor did leave arrangements and gender segregation in education. We did find, however, that the gender gap in authority is smaller in countries where working part time is common.

In the following sections we provide an overall conclusion, an elaboration on theoretical implications, contributions, and limitations of this dissertation, as well as suggestions for directions of future research.

2. Overall conclusion

Based on the research chapters, we can draw four overall conclusions in this dissertation. First, differences in family-friendly state policies in European countries help explain differences in labor market involvement and career outcomes **between women**. More specifically, family-friendly policies were found to *directly* influence mothers' working hours, indicating their relevance for women's labor supply. This is in line with previous research that focused mainly on mothers' labor market participation and less on their working hours (Berninger 2009; Gornick, Meyers and Ross 1998; Mandel and Semyonov 2006; Pettit and Hook 2005). Similarly, we found that family-friendly policies *moderate* the motherhood penalty for occupational status. However, with respect to differences **between men and women** in labor market opportunities, only the net availability of part-time work (i.e. taking differences in individuals' working hours into account) was found to *directly* influence the gender gap in workplace authority between European countries. The availability of part-time work probably gives women who work full time career opportunities that are more in line with those of their male counterparts. This result contradicts the idea that family-friendly policies stimulate employer discrimination against women and thus increase the gender authority or gender income gap (Mandel and Semyonov 2006; Rosenfeld, Van Buren and Kalleberg 1998; Yaish and Stier 2009). Moreover, no evidence was found for "*compositional explanations*" of differences between European countries in labor market gender inequalities. We expected that family-friendly state policies would also influence women's human capital accumulation, and that cross-national differences in the accumulated human capital composition of the female population would help explain differences in the gender gap in workplace authority in Europe. However, this was not the case.

Second, we have shown that it is important to distinguish between state policies because they differ with respect to their effect on women's labor market involvement and career outcomes in different European countries. State policies which facilitate a dual-earner family are more likely to increase women's working hours (e.g. publicly funded child care or leave arrangements), whereas policies which facilitate a male breadwinner or one and a half earner family are more likely to decrease them (e.g. child benefits or the availability of part-

time work). In the same vein, family-friendly policies which negatively affect women's human capital accumulation are more likely to increase the negative consequences of motherhood for women's occupational status, whereas family-friendly policies which facilitate women's human capital accumulation are more likely to decrease them. This supports Pettit and Hook's (2005) argument that state policies should be researched separately rather than focusing on the general supportiveness of the welfare state.

Third, in line with previous research we can conclude that the male partner is important for women's career outcomes (e.g. Bernardi 1999; Bernasco, De Graaf and Ultee 1998; Verbakel 2008). According to the theory, he can be either a resource or a restriction, but we have shown that the male partner's resources are more likely to benefit women's career advancement than restrict it. This implies that the gender income and wage gap is reduced by processes within households. Our results further show that the relevance of the male partner's resources for women's careers depends on the country context, and especially on the economic circumstances within a country. In more affluent countries, the male partner's resources are less beneficial for women's career outcomes. In less affluent countries, on the other hand, the need for an additional income appears to encourage the female partner to use her male partner's resources for her own career advancement. Economic necessity works against specialization (England 2010). We investigated this with respect to female income and wage rate. The notion that a country's economic context can cause the male partner's income to have differing positive effects on women's careers may help explain why gender income and wage inequalities are smaller in some countries than in others.

Fourth, our research results support earlier conclusions that the workplace context influences women's ability to integrate work and family life (e.g. Abendroth and Den Dulk 2011; Byron 2005) and that women's occupational choices influence their career opportunities (e.g. Roos and Gatta 1999; Tomaskovic-Devey 1993). One important conclusion is – again – that the relevance of workplace and occupational characteristics for women's labor market involvement or career outcomes depends on the country context. When women become mothers, they are less likely to switch to occupations with worse career prospects if the state encourages women's integration of work and care by means of expenditure on day care. Presumably, women who have access to public child care have less need to switch to family-friendly but lower-status occupations after a birth. These mothers need fewer workplace accommodations, job performance is not compromised by child care problems, and employers have less incentive to discriminate against mothers. In contrast, cash

benefits to families exacerbate the motherhood penalty for occupational status. Family benefits facilitate mothers' withdrawal from employment, and they may encourage employer discrimination by calling attention to women's care-giver role (Mandel and Semyonov 2006). Moreover, we found that women only benefit from flexible working hours by having the opportunity to work longer hours, e.g. more than part time, when publicly funded child care is readily available. This implies that the country and workplace contexts do not have a substitutive relationship as possible sources of support for women's labor market involvement and career outcomes.

3. Theoretical implications of research results

The dissertation has several theoretical implications. First, *New Home Economics* (e.g. Becker 1991; Blau and Ferber 1986; Bryant 1990) states that men and women will specialize in paid and household labor in order to increase family well-being, and that the female partner tends to specialize at home. It was further argued that motherhood and a high income on the part of the male partner are incentives for specialization. In line with this, we showed that mothers with a partner who rarely helped out at home were less likely to work long hours. However, our research also produced some findings that cannot be derived directly from New Home Economics. We found that high-status male partners in particular help their female partners with care and household tasks, and that this support increases the likelihood of mothers working longer hours. Our results further show that a high income on the male partner's part is generally not an incentive for specialization. Only in the Netherlands did we find that male partner income is negatively associated with female income and wage rate. In most of the countries, a high male partner income was beneficial for women's income and wage rate. We can thus conclude that there may be other circumstances or processes important for the division of labor within couples in addition to those identified by New Home Economics. This implies that it is important to develop arguments within the field of sociology explaining the conditions under which specialization within couples (paid and household labor) – as suggested by New Home Economics (e.g. Becker 1991; Blau and Ferber 1986; Bryant 1990) – is more likely or less likely to occur, or becomes stronger or weaker.

Second, arguments based on social capital theory (e.g. Bernardi 1999; Bernasco, De Graaf and Ultee 1998; Coleman 1990; Granovetter 1974; Verbakel 2008) should be developed further, specifying under which circumstances social capital is beneficial or supportive, e.g. for women's career advancement. In this dissertation, male partner income (as

an indicator for beneficial resources) proved less beneficial for the female partner's own career advancement in affluent countries than in less affluent ones. This may imply that social capital is not always needed or wanted and thus not always beneficial for women's careers. Why social capital would not be needed or wanted might be related to the financial situation already secured by the male partner. Another explanation could be that in more affluent countries where the average income has a relatively high purchasing power, men and women do not pool their income but independently pursue a career and secure their own living standard. Theoretical arguments exploring differences in the usefulness of social capital might therefore offer a fruitful direction for future research.

Third, we strongly recommend that the time dimension should be more closely integrated into theories on women's labor market involvement and career outcomes, as has also been suggested in life-course paradigms (Elder and Giele 2009a, b). We did this only in Chapter *III*, which showed the importance of distinguishing between the short and long-term consequences of motherhood for women's occupational status as well as between differences in the motherhood penalty for occupational status between first and higher order births. This implies the need for more systematic thinking on how the time dimension can be added to existing theories on women's labor market involvement and career outcomes. Applying the time dimension, for example to the research focus in Chapter *II*, would suggest that the support available from the state, workplace, or family for women's working hours is likely to have differing degrees of relevance depending on a woman's life stage. Our results would therefore have been different if we had investigated women in another life stage and not only women with young children at home.

4. Contributions to the field

This dissertation contributes to previous research in several ways. First, it combines several research perspectives by looking at women's labor market involvement and career outcomes from several angles. More specifically, we considered individual-level processes, with women's life course situation and human capital accumulation, as well as support and restrictions in several life domains: the family context, the workplace context, and the country context. This approach had several advantages. For example, it allowed us to link macro-level and micro-level explanations, broadening our understanding of how country, family, and workplace characteristics affect women's labor market involvement and their career outcomes. Moreover, it allowed us to deliver a macro-micro design that tests the moderating,

compositional, and direct influences of the country, workplace, and family context on women's labor market involvement and career outcomes. Finally, investigating the relevance of country, workplace, and family characteristics in a single design allowed us to investigate their interaction.

Second, we compared theories that stress support and restrictions within the family, workplace, and country context. For example, we investigated the career outcomes of the male partner as an incentive for specialization within couples and as an indicator of resources conducive to female partners' own career advancement. Similarly, we considered two sorts of policies, those that are positive and those that are negative for women's labor market involvement and career outcomes.

Third, we considered several labor market outcomes: mothers' working hours, the short-term and long-term consequences of motherhood for women's occupational status, income, and their likelihood of holding an authority position. This gave us the opportunity to investigate whether the country, workplace, and family context differ in terms of their relevance to various labor market outcomes of women. This was especially important as countries tend to score differently on the various labor market indicators, as illustrated in the introductory chapter. Our research indeed implies that these contexts have differing influences, depending on the career outcome we look at.

Fourth, we shed light on the welfare state paradox that family-friendly policies can be positive and negative for women's labor market involvement and career outcomes by investigating single policies rather than the supportiveness of the welfare state, in line with Pettit and Hook's recommendation (2005). Progress has also been made on previous research by our studying how single policies affect women's labor market involvement and human capital accumulation. Consequently, we could differentiate the mechanisms behind family-friendly state policies and suggest why some policies might be positive and others negative in that regard. Some state policies facilitate a better integration of work and care, but also constrain mother's labor market involvement and careers (e.g. child benefits, availability of part-time work). This is because they encourage family models in which the mother bears the main responsibility for care and household tasks, restricting her human capital accumulation. However, this is not the case for publicly funded child care, which is indeed never negative and often beneficial for mother's labor market involvement and career outcomes. This finding also lead us to conclude that family-friendly policies can cancel out one another's influences,

because policies that positively and negatively affect mother's labor market involvement and career outcomes coexist within countries.

Fifth, this dissertation also contributes to methodology. Several macro indicators were collected to investigate the relevance of the country context for mothers' labor market involvement and career outcomes. Moreover, the use of fixed effect models, which has less often been considered in this field or research, offered new insights on the explanation of women's career development. Finally, we used different approaches to deal with the relative small number of countries covered in our data: 1) we pooled countries together and used the Jackknife procedure, always eliminating one country to investigate the stability of the results, 2) we compared results per country with the results of the pooled analysis, 3) we increased the N at the country level by using time-variant country indicators.

5. Limitations

This dissertation has some limitations. First, the number of countries available allows only cautious conclusions concerning the relevance of the country context for mothers' career investment and career outcomes. Moreover, the same limitation did not allow us to include all country indicators (different state policies, cultural and economic country characteristics) in one design. For each research chapter, we decided to use those that were the most important for the research focus.

Second, we focused on specific characteristics of state policies e.g. the expenditures of the state for public childcare. We did not consider the availability, quality, or opening hours of child care facilities due to the data available. Similarly, the availability of part-time work was based on the use of part-time work arrangements. A better indicator would be information on legislation offering the option of reducing working hours and switching back to full-time employment, as well as on the benefits paid for part-time work in comparison to full-time work. In addition, we were not able to consider the taxation system for families, as this information was not available for all the countries in our study. In some countries husbands and wives are taxed individually, whereas in other countries taxation is based on the family. The latter may mean that one and a half earner families are better off financially than dual earner families (OECD 2003).

Third, we considered workplace characteristics based on individual-level data, for example questions regarding flexible working practices within one's own work organization.

Ideally, we would have liked to have workplace-level information on the workplace context to compare individuals in different work organizations with each other.

Fourth, we did not research the selection argument for country differences in women's career outcomes. This argument suggests that the group of women who are employed or who have children already differ between countries due to existing constraints and resources and that this also causes differences in working hours and career outcomes of women in different countries. Nevertheless, in research chapter *II* we checked for a selection bias by using a Heckman Selection model for employment when we investigated the relevance of support for mothers' working hours. Moreover in chapter *III* we controlled for self-selection into motherhood with the help of fixed effect models.

Fifth, some results may be the result of reversed causality. For example, it may not be that help with household and care tasks by the male partner allows mothers to work longer hours, but that mothers' longer hours lead to the male being more closely involved in running the household. Similarly, it is also possible that the resources of the female partner influence the careers of the male partner and not the other way around. We dealt with reversed causality by measuring *available* support and not the support actually used when possible in chapter *II*. Moreover, in chapter *III* and *IV* we used longitudinal data which provides more insights in causal relationships than cross sectional data, but does completely allow disentangling causality with the methods used.

6. Directions for future research

Our study has several implications for future research. First, we recommend collecting country comparative data from more countries with better indicators on the country level. With data on more countries becoming available, more nuanced multi-level models would provide a clearer picture of the relevance of the country context because they would allow for more variation on the country level. Moreover, data on a larger number of countries would make it possible to include more country indicators and to test their interaction, for example between the cultural context and state policies or the economic context and state policies, or between policies facilitating different family models. This would help explain why specific family-friendly policies are more relevant in some countries than in others, as suggested by our research results. In a smaller effort, more extensive data on publicly funded child care could be gathered, including information about the availability and quality of child care and

the opening hours of child care facilities. The same holds true for information about legislation and benefits for part-time work.

Second, we recommend collecting internationally comparative data at three levels: the individual, the workplace, and the country level. Although this is a huge task, such data would allow a more accurate test of the effect of workplace support not only on mothers' working hours but on many other work outcomes as well. In addition, more insight could be provided into the interaction between country and workplace characteristics as well as into the variation in gender inequalities within and between workplaces. For the latter, research on the relevance of supervisor and colleague support might offer future pathways, or the comparison of organization with and without formalized staff selection and promotion processes or gender mainstreaming and gender diversity programs.

Third, this study explored the relevance of state policies for working mothers. However, in countries such as Sweden or Denmark, the state encourages fathers to take on the care role, with "daddy days" or leave periods especially reserved for fathers. Since our research indicates that partners' careers are likely to be interlinked, future research is needed to explore the relevance of these programs for men's participation in care and household tasks. Moreover, our results raise the question of whether men who want to take an active role in care tasks at home also experience discriminatory processes. This is a further important question for future research. Moreover, collecting data on the male partner's help with women's career advancement would reveal which mechanisms underpin the positive effects of the male partner's career outcomes on female income and wage rate.

Fourth, our results concerning differences in short-term and long-term consequences of motherhood for occupational status imply that it is important to use longitudinal data in future research on gender inequalities. This would allow to further test the applicability of theories on labor market involvement and career outcomes of women in different life stages and to further test whether disadvantages of women the labor market cumulate over time.

Finally, the overall conclusions of this dissertation imply that it is a promising pathway for future research to further investigate how processes within the country, workplace, and family context interrelate in their relevance for women's opportunities on the labor market.

Samenvatting in het Nederlands

Uit de verschillen die er tussen de landen in Europa bestaan op het gebied van de arbeidsparticipatie en loopbaanontwikkeling van vrouwen, blijkt dat voor een verklaring van deze verschijnselen niet alleen de individuele kenmerken van vrouwen van belang zijn, maar ook de kenmerken van de omgeving waarin zij wonen en werken. In dit proefschrift wordt nader gekeken naar de bestaande voorzieningen en beperkingen binnen een **nationale context** als mogelijke verklaringen voor de variatie in Europa in de arbeidsparticipatie van vrouwen en hun loopbaanontwikkeling. Aangezien voor vrouwen echter niet alleen de nationale context van belang is, maar ook hun **werk- en gezinsomgeving**, is daarnaast onderzocht in hoeverre deze contexten prikkels bieden dan wel beperkingen opleggen die een verklaring kunnen geven voor de variatie in de arbeidsparticipatie van vrouwen en hun loopbaanontwikkeling *binnen* en *tussen* Europese landen. Aan de hand van nationale factoren en werk- en gezinskenmerken is onderzocht hoe deze contexten onderling op elkaar inwerken bij het beïnvloeden van de arbeidsparticipatie van vrouwen en hun loopbaanontwikkeling.

Afgezet tegen de verschillende indicatoren voor de arbeidsparticipatie geven de diverse Europese landen een uiteenlopend beeld. Daarom is in dit proefschrift de nadruk gelegd op een aantal kerngegevens, te weten het aantal arbeidsuren van vrouwen, hun inkomen, de kans dat zij een leidinggevende positie bekleden en hun beroepsstatus. Bij het onderzoek naar de relevantie van de nationale factoren en de specifieke werk- en gezinskenmerken voor die indicatoren is getracht om zowel verschillen in de arbeidsparticipatie en loopbaanontwikkeling *tussen mannen en vrouwen* als verschillen *tussen vrouwen onderling* te verklaren. Hoewel er tegenwoordig ook meer variatie is in de arbeidsparticipatie en loopbaanontwikkeling van mannen, zijn die verschillen nog steeds relatief klein. Samengevat **was het doel van deze studie om inzicht te krijgen in het effect dat de gezins-, werk- en nationale context heeft op verschillen in het aantal arbeidsuren van vrouwen, hun inkomen, de kans dat zij een leidinggevende positie bekleden en hun beroepsstatus.**

Arbeidsparticipatie van moeders

In *hoofdstuk II* wordt onderzocht in hoeverre nationale factoren, de werkplek en gezinsondersteuning van invloed zijn op het aantal arbeidsuren van werkende moeders en hoe

de verschillende factoren op elkaar inwerken. Aangenomen wordt dat vrouwen meer uren werken wanneer er sprake is van concrete beleidsmaatregelen die het tweeverdienersmodel bevorderen, zoals overheidssteun voor kinderopvang en verlofregelingen. Daarnaast was de verwachting dat zij minder uren werken wanneer het beleid het mannelijk kostwinnerschap of het anderhalfverdienersmodel bevordert, bijvoorbeeld door middel van kinderbijslag en mogelijkheden om parttime te werken. Bovendien is de veronderstelling dat faciliteiten op de werkplek en afspraken binnen gezinnen die de zorgbehoefte thuis verminderen of die tot een betere integratie van werk en privéleven leiden, moeders ertoe aanzetten om meer uren te werken. Tevens wordt aangenomen dat de arbeidsparticipatie toeneemt wanneer vrouwen adequate rolmodellen hebben gehad (wanneer zij zelf opgevoed zijn door een werkende moeder). Tot slot zijn er argumenten aangevoerd voor een eventuele inwisselbaarheid van een elkaar versterkende relatie tussen de verschillende soorten faciliteiten om de arbeidsparticipatie en loopbaanontwikkeling van vrouwen te bevorderen. Om de hypothesen te toetsen is gebruik gemaakt van de *European Social Survey 2004/2005* en van landenspecifieke informatie. De resultaten laten zien dat ondersteuning op de werkplek, de hulp van de partner bij het huishouden en bij zorgtaken en het door een werkende moeder opgevoed zijn allemaal een positief effect hebben op het aantal arbeidsuren van werkende moeders. Overheidsbeleid dat gericht is op het bevorderen van de rol van de man als kostwinner of van het anderhalfverdienersmodel heeft daarentegen een negatief effect. Voor de hypothese dat er een algemeen positief verband bestaat tussen overheidsbeleid dat het tweeverdienersmodel bevordert en het aantal arbeidsuren van werkende moeders is slechts in geringe mate steun gevonden. Gesubsidieerde kinderopvang bleek uitsluitend een positief effect te hebben wanneer er ook ondersteunende faciliteiten op de werkplek beschikbaar waren. Verlofregelingen hadden slechts in een beperkt aantal landen een bevorderlijk effect op het aantal werkuren. Zo bleek ook ondersteuning in het huishouden en bij de zorg door familieleden van buiten het gezin geen positief effect te hebben op het aantal arbeidsuren van werkende moeders. Daarnaast is gebleken dat er geen sprake is van de veronderstelde inwisselbaarheid van de verschillende soorten ondersteunende faciliteiten. Er is wel geconstateerd dat rolmodellen in het gezin en werkplekfaciliteiten elkaar versterken in hun invloed op het aantal arbeidsuren van moeders en dat er ook een dergelijk verband bestaat tussen gesubsidieerde kinderopvang en ondersteunende faciliteiten op het werk.

Loopbaanontwikkeling van moeders

In *hoofdstuk III* zijn de effecten van het moederschap op de beroepsstatus van vrouwen op korte en middellange termijn onderzocht, evenals de wijze waarop deze effecten worden beïnvloed door strategieën gericht op een betere integratie van werk en privéleven (uitstellen van moederschap, verminderen van aantal zwangerschappen) en door gezinsvriendelijke beleidsmaatregelen (uitgaven voor gesubsidieerde kinderopvang en financiële tegemoetkomingen voor het gezin). Er zijn argumenten vanuit het perspectief van de vraagzijde en van de aanbodzijde tegenover elkaar gezet die tot tegengestelde hypothesen leiden over de kans dat het negatieve effect van moederschap op de beroepsstatus in de loop der tijd afneemt dan wel juist toeneemt. Daarnaast was de verwachting dat de negatieve effecten van het moederschap groter zijn bij het eerste kind dan bij latere kinderen en dat die effecten groter zijn voor vrouwen die op jongere leeftijd kinderen krijgen dan wanneer dat op latere leeftijd gebeurt omdat die vrouwen dan al een bepaalde carrière hebben opgebouwd. Bovendien was het uitgangspunt dat overheidsmaatregelen die de dubbele belasting (werk en zorg) van moeders reduceren en de beschikbaarheid van werkende moeders op de arbeidsmarkt stimuleren (bijvoorbeeld door gesubsidieerde kinderopvang) het negatieve effect op de beroepsstatus als gevolg van moederschap verminderen. Daarentegen was de verwachting dat overheidsmaatregelen die moeders beperken in het opbouwen van een beroepsleven (zoals financiële tegemoetkomingen) omdat zij moeders de mogelijkheid bieden om zich op zorggerelateerde activiteiten te richten, op langere termijn zelfs tot een groter negatief effect op de beroepsstatus leiden. Er zijn *fixed effect models* gebruikt om de longitudinale data van het huishoudpanel van de Europese Gemeenschap op acht tijdstippen tussen 1994 en 2001 te analyseren voor dertien Europese landen. Daarbij is geconstateerd dat er bij het eerste en tweede kind sprake is van een negatief effect op de beroepsstatus. Uit de onderzoeksresultaten blijkt daarnaast dat het statusverlies bij een eerste kind niet slechts een effect op de korte termijn is, maar zich in de loop van een carrière opstapelt. De leeftijd van de moeder waarop een kind werd geboren, is alleen bij het derde kind van belang, waarbij een derde kind slechts op oudere leeftijd een negatief effect heeft op de beroepsstatus van vrouwen. Dit duidt erop dat het uitstellen van het krijgen van kinderen of het kiezen voor minder kinderen het negatieve effect van het moederschap op de beroepsstatus in de loop der tijd niet minimaliseert. Gegevens uit verschillende landen wijzen erop dat gesubsidieerde kinderopvang een effectieve manier is om de negatieve gevolgen van het moederschap voor

de beroepsstatus op lange termijn te verminderen. Financiële tegemoetkomingen (zoals kinderbijslag of een gedeeltelijke inkomenstoeslag tijdens een verlofperiode) lijken daarentegen de negatieve gevolgen van moederschap voor de beroepsstatus op de lange termijn te vergroten.

Loopbaanontwikkeling van vrouwen en de invloed van de partner

In *hoofdstuk IV* wordt het effect van het inkomen van de mannelijke partner op het inkomen en het salarisniveau van vrouwen in verschillende nationale contexten onderzocht. Volgens de *New Home Economics Theory* heeft het inkomen van mannelijke partners een negatief effect op het inkomen en het salarisniveau van vrouwen, terwijl volgens de *Social Capital Theory* het tegenovergestelde het geval is. Onderzocht is of de toepasselijkheid van deze theorieën afhankelijk is van de culturele en economische nationale context. Op basis van *fixed effect models* zijn data geanalyseerd van het huishoudpanel van de Europese Gemeenschap over trends in het partnerinkomen tussen 1994 en 2001. De *Gender Empowerment Measure* en de koopkracht bij een modaal inkomen van mannen zijn als indicatoren gebruikt voor de culturele en economische nationale context. Er is geconstateerd dat de partner van invloed is op het inkomen en het salarisniveau van vrouwen. Alleen in Nederland is er sprake van een negatieve relatie tussen de inkomens van partners. In het algemeen is de aanwezigheid van een partner die succesvol is op de arbeidsmarkt, gunstiger voor het inkomen en het salarisniveau van vrouwen. Daarnaast is gebleken dat de relevantie van het inkomen van de mannelijke partner afhankelijk is van de economische nationale context. Voor het inkomen en het salarisniveau van vrouwen zijn de financiële middelen (afgemeten aan het inkomen) van de mannelijke partner vooral positief wanneer de koopkracht bij een modaal inkomen in een land bijzonder laag is. Er zijn minder aanwijzingen gevonden voor de stelling dat ook de gendercultuur van invloed is op dit proces.

Loopbaanontwikkeling van mannen en vrouwen

In *hoofdstuk V* is nader onderzocht waarom vrouwen minder kans maken om een leidinggevende positie op het werk te bekleden dan mannen en waarom er op dit punt verschillen tussen landen bestaan. De nadruk ligt hierbij op het belang van het investeren in verschillende soorten human capital en op het rendement van die investeringen. Daarnaast is onderzocht of verschillen in de samenstelling van het door vrouwen opgebouwde human capital en het nationale beleid dat waarschijnlijk op die samenstelling van invloed is (bijv.

verlofregelingen, de mogelijkheid om parttime te werken en de pogingen tot gendersegregatie in het onderwijs) een verklaring kunnen vormen voor de verschillen tussen landen in de genderkloof op leidinggevend niveau. Er is gebruik gemaakt van data van de *European Social Survey* 2004/2005 en van landenspecifieke informatie om een aantal hiërarchische modellen samen te stellen. Wanneer naar Europa als geheel wordt gekeken, blijkt dat de genderkloof qua leidinggevende functies deels toegeschreven kan worden aan het feit dat vrouwen minder werkervaring in het algemeen hebben, minder lang bij hun huidige werkgever werkzaam zijn en minder uren dan mannen werken. De verschillen tussen mannen en vrouwen ten aanzien van opleidingsspecialisatie en carrièreonderbrekingen als gevolg van de opvoeding van kinderen of werkloosheid zijn van minder belang. Gebleken is dat vrouwen uitsluitend met betrekking tot de ervaring bij de huidige werkgever minder rendement uit hun investeringen in human capital halen ten opzichte van mannen. De gevolgen van carrièreonderbrekingen zijn voor mannen zelfs nog groter dan voor vrouwen. Met betrekking tot de verschillen tussen landen in de genderkloof op leidinggevend niveau is uit het onderzoek gebleken dat de samenstelling van human capital geen verklaring vormt voor die verschillen. Dat geldt ook voor verlofregelingen en gendersegregatie in het onderwijs. Er is echter wel geconstateerd dat de genderkloof in leidinggevende functies kleiner is in landen waar parttime werken gangbaar is.

Conclusie

Op basis van de onderzoekshoofdstukken worden er in dit proefschrift vier algemene conclusies getrokken. In de eerste plaats leveren de verschillen in gezinsvriendelijke overheidsmaatregelen een bijdrage aan het verklaren van verschillen **tussen vrouwen** in arbeidsparticipatie en loopbaanontwikkeling. Meer in het bijzonder is gebleken dat gezinsvriendelijke beleidsmaatregelen direct van invloed zijn op de hoeveelheid arbeidsuren van moeders, hetgeen erop duidt dat die maatregelen relevant zijn voor de beschikbaarheid van werkende moeders op de arbeidsmarkt. In het verlengde hiervan is geconstateerd dat die gezinsvriendelijke maatregelen het negatieve effect van het moederschap op de beroepsstatus beinvloeden. Met betrekking tot de verschillen tussen mannen en vrouwen wat de kansen op de arbeidsmarkt betreft, is gebleken dat uitsluitend de netto-beschikbaarheid (d.w.z. dat er rekening wordt gehouden met verschillen in individuele arbeidsuren) van parttime-werk *direct* van invloed is op de genderkloof in leidinggevende functies in Europese landen. Door

de beschikbaarheid van parttime-banen krijgen vrouwen die fulltime werken carrièrekansen die meer in overeenstemming zijn met die van hun mannelijke equivalenten. Bovendien zijn er geen aanwijzingen gevonden dat de "samenstelling" van het opgebouwde human capital een verklaring vormt voor verschillen tussen Europese landen in genderongelijkheden op de arbeidsmarkt. De verwachting was dat gezinsvriendelijke overheidsmaatregelen ook van invloed zouden zijn op het opbouwen van human capital door vrouwen en dat verschillen tussen landen in die kapitaalopbouw van de vrouwelijke populatie mede een verklaring zouden kunnen vormen voor de verschillen in de genderkloof in leidinggevende functies in Europa. Dit blijkt echter niet het geval.

In de tweede plaats is aangetoond dat het belangrijk is om een onderscheid te maken tussen de diverse overheidsmaatregelen omdat het effect daarvan op de arbeidsparticipatie van vrouwen en op de loopbaanontwikkeling zeer verschillend is in de diverse Europese landen. Overheidsmaatregelen die het tweeverdienersmodel bevorderen (bijv. gesubsidieerde kinderopvang of verlofregelingen) zijn het meest geschikt om het aantal arbeidsuren van vrouwen te vergroten, terwijl beleidsmaatregelen die het mannelijk kostwinnerschap of het anderhalfverdienersmodel bevorderen (bijv. kinderbijslag of mogelijkheden om parttime te werken), dat aantal eerder zal verminderen. Zo zullen naar alle waarschijnlijkheid gezinsvriendelijke maatregelen die een negatief effect hebben op de opbouw van human capital van vrouwen de negatieve gevolgen van het moederschap voor de beroepsstatus van vrouwen vergroten, terwijl gezinsvriendelijke maatregelen die die kapitaalopbouw bevorderen, de negatieve effecten veeleer zullen verminderen.

In overeenstemming met eerder onderzoek is in de derde plaats geconstateerd dat de mannelijke partner belangrijk is voor de loopbaanontwikkeling van vrouwen. Volgens de theorieën kan die partner zowel een stimulans als een beperking zijn, maar in dit onderzoek is gebleken dat het inkomen van de mannelijke partner de loopbaan van vrouwen eerder zal bevorderen dan beperken. Dit impliceert dat de inkomens- en salariskloof die er tussen mannen en vrouwen bestaat, kleiner wordt door interne gezinsprocessen. Uit de resultaten blijkt daarnaast dat de relevantie van het inkomen en het netwerk e.d. van mannelijke partners voor de loopbaan van vrouwen afhankelijk is van de nationale context, met name van de economische omstandigheden in een land. In rijkere landen heeft het inkomen van mannelijke partners een kleiner positief effect op de loopbaanontwikkeling van vrouwen. In minder rijke landen lijkt de noodzaak van een aanvullend inkomen de vrouwelijke partner meer te stimuleren om voor haar eigen loopbaanontwikkeling gebruik te maken van de middelen van

haar mannelijke partner. De economische noodzaak is in die situatie dus sterker dan de zorgspecialisatie. Wij hebben dit onderzocht met betrekking tot het inkomen en het salarisniveau van vrouwen. Het besef dat de economische context van een land ertoe kan leiden dat het inkomen van mannelijke partners uiteenlopende positieve effecten op de loopbaan van vrouwen heeft, kan behulpzaam zijn om de vraag te beantwoorden waarom de inkomens- en salarisongelijkheden tussen mannen en vrouwen in sommige landen kleiner zijn dan in andere landen.

In de vierde plaats bevestigt dit onderzoek eerdere conclusies dat de werkcontext de mogelijkheden van vrouwen beïnvloedt om werk en gezinsleven te integreren en dat de arbeidskeuzen van vrouwen effect hebben op hun loopbaanmogelijkheden. Een van de belangrijke conclusies is – wederom – dat de relevantie van werkplek- en beroepskenmerken voor de arbeidsparticipatie en loopbaan van vrouwen afhankelijk is van de nationale context. Wanneer vrouwen kinderen krijgen, is de kans dat zij genoegen nemen met een baan met slechtere loopbaanperspectieven kleiner indien de overheid vrouwen aanspoort om werk en zorg te combineren door dagopvang voor kinderen te subsidiëren. Waarschijnlijk hebben vrouwen met mogelijkheden tot kinderopvang minder behoefte om na de geboorte voor gezinsvriendelijke beroepen met een lagere status te kiezen. Dergelijke moeders hebben minder faciliteiten op de werkplek nodig en werkgevers hebben minder aanleiding om moeders te discrimineren. Daarentegen vergroten financiële tegemoetkomingen voor gezinnen de negatieve effecten van het moederschap op de beroepsstatus. Door die financiële steun trekken vrouwen zich eerder van de arbeidsmarkt terug. Die steun kan daarnaast discriminatie door werkgevers vergroten doordat de aandacht nadrukkelijker op de zorgtaken van vrouwen wordt gevestigd. Bovendien is gebleken dat vrouwen dankzij de mogelijkheid om meer uren te werken, bijv. meer dan parttime, uitsluitend van flexibele arbeidstijden profiteren wanneer er in voldoende mate gesubsidieerde kinderopvang beschikbaar is.

Reference List

Abendroth, Anja-Kristin, Tanja Van der Lippe, and Ineke Maas. 2012. "Social Support and the Working Hours of Employed Mothers in Europe: The Relevance of the State, the Workplace, and the Family" *Social Science Research*. 41:581–597.

Abendroth, Anja-Kristin, and Laura Den Dulk 2011. "Support for the work-life balance in Europe: the impact of state, workplace and family support on work-life balance satisfaction" *Work, employment and society.* 25:234–256.

Abendroth, Anja-Kristin, Ineke Maas, and Tanja van der Lippe. 2011 online publication. Human Capital and the Gender Gap in Authority in European Countries. *European Sociological Review*; doi: 10.1093/esr/jcr059

Aigner, Dennis J. and Glen C. Cain. 1977. "Statistical Theories of Discrimination" *Industrial and Labor Relations Review*. 30:175–187.

Aisenbrey, Silke, Marie Evertsson, and Daniela Grunow. 2009. "Is There a Career Penalty for Mothers' Time Out? A Comparison of Germany, Sweden and the United States" *Social Forces*. 88:573–605.

Allison, Paul D. 2005. *Fixed Effects Regression Methods for Longitudinal Data Using SAS,* Cary, N.C: SAS Institute.

Anderson, Deborah J., Melissa Binder, and Kate Krause. 2003. "The Motherhood Wage Penalty Revisited: Experience, Heterogeneity, Work Effort, and Work-Schedule Flexibility" *Industrial and Labor Relations Review*. 56:273–294.

Anttonen, Annelie and Jorma Sipila. 1996. "European Social Care Services: Is It Possible To Identify Models ?" *Journal of European Social Policy*. 6:87–100.

Bandura, A. 1977. *Social Learning Theory,* New Jersey: Prentice Hall.

Bardasi, Elena and Janet C. Gornick. 2000. "Women and Part-Time Employment: Workers' "Choices" and Wage Penalties in Five Industrialized Countries" Pp. 209–244, in *Women in the Labour Market in Changing Economies: Demographic Consequences,* edited by B. Garcia, R. Anker, and A. Pinnelli. Oxford: Oxford University Press.

Baum, Charles L. 2002. "The Effect of Work Interruptions on Women's Wages" *Labour*. 16:1–37.

Becker, Gary S. 1975. *Human Capital. A Theoretical and Empirical Analysis, with Special Reference to Education,* New York; London: National Bureau of Economic Research.

------. 1981. *A Treatise on the Family,* Cambridge, Mass. [u.a.]: Harvard Univ. Press.

------. 1985. "Human Capital, Effort, and the Sexual Division of Labor" *Journal of Labor Economics*. 3:S33.

------. 1991. *A Treatise on the Family,* Cambridge, Mass: Harvard University Press.

------. 1993. *Human Capital. A Theoretical and Empirical Analysis, with Special Reference to Education,* Chicago: University of Chicago Press.

Becker, Penny E. and Phyllis Moen. 1999. "Scaling Back: Dual-Earner Couples' Work-Family Strategies" *Journal of Marriage and the Family*. 61:995–1007.

Been, Wike, Laura Den Dulk, and Tanja Van der Lippe. 2011. "Favorable conditions for workplace work-life policies in Europe" Working Paper presented at the Conference Equality in Berlin.

Beggs, John J. and Jeanne S. Hurlbert. 1997. "The Social Context of Men's and Women's Job Search Ties: Membership in Voluntary Organizations, Social Resources, and Job search outcomes" *Sociological Perspectives*. 40:601–622.

Benard, Stephen and Shelley J. Correll. 2010. "Normative Discrimination and the Motherhood Penalty" *Gender & Society*. 24:616–646.

Bergeron, Diane M., Caryn J. Block, and Alan Echtenkamp. 2006. "Disabling the Able: Stereotype Threat and Women's Work Performance" *Human Performance*. 19:133–158.

Bernardi, Fabrizio. 1999. "Does the Husband Matter? Married Women and Employment in Italy" *European Sociological Review*. 15:285–300.

Bernasco, Wim, Paul M. de Graaf, and Wout C. Ultee. 1998. "Coupled Careers: Effects of Spouse's Resources on Occupational Attainment in the Netherlands" *European Sociological Review*. 14:15–31.

Berninger, Ina 2009. "Welche familienpolitischen Maßnahmen fordern die Arbeitsmarkpartizipation von Müttern?" *Kölner Zeitschrift für Soziologie und Sozialpsychologie*. 61:355–385.

Blackwell, Louisa. 2001. "Occupational Sex Segregation and Part-time Work in Modern Britain" *Gender, Work and Organization*. 8:146–163.

Blank, Rebecca. 1990. "Are Part-Time Jobs Bad Jobs?" Pp. 123–155, in *A Future of Lousy Jobs? The Changing Structure of U.S. Wages,* edited by G. T. Burtless. Washington, D.C: Brookings Institution.

Blau, Francine D. and Marianne A. Ferber. 1986. *The Economics of Women, Men, and Work,* Englewood Cliffs, N.J: Prentice-Hall.

Blau, Francine D. and Lawrence M. Kahn. 1996. "Wage Structure and Gender Earnings Differnetials – an International Comparison" *Economica:*29–62.

------. 2003. "Understanding International Differences in the Gender Pay Gap" *Journal of Labor Economics*. 21:106–144.

Blood, Rorbert O. and Donald M. Wolfe. 1960. *Husbands and Wives,* Glencoe, IL: Free Press.

Blossfeld, Hans-Peter, and Sonja Drobnič, editors. 2001. *Careers of Couples in Contemporary Societies. From Male Breadwinner to Dual-Earner Families,* Oxford: Oxford Univ. Press.

Bock, Bettina and Anneke van Doorne-Huiskes. 1995. "The Careers of Men and Women: A Life-Course Perspectiv" Pp. 72–89, in *Women and the European Labour Markets,* edited by A. Van Doorne-Huiskes, J. Van Hoof, and E. Roelofs. London: P. Chapman Pub.

Bruning, Gwennaële and Janneke Plantenga. 1999. "Parental Leave and Equal Opportunities: Experiences in Eight European Countries" *Journal of European Social Policy*. 9:195–209.

Bryant, Wilfrid K. 1990. *The Economic Organization of the Household,* Cambridge: Cambridge Univ. Press.

Budig, Michelle J. and Paula England. 2001. "The Wage Penalty for Motherhood" *American Sociological Review*. 66:204–225.

Budig, Michelle J. and Melissa J. Hodges. 2010. "Differences in Disadvantage: Variation in the Motherhood Penalty across White Women's Earnings Distribution" *American Sociological Review*. 75:705–728.

Byron, Kristin. 2005. "A Meta-Analytic Review of Work–Family Conflict and its Antecedents" *Journal of Vocational Behavior*. 67:169–198.

Cancian, Maria and Robert F. Schoeni. 1998. "Wives' Earnings and the Level and Distribution of Married Couples' Earnings in Developed Countries" *Journal of Income Distribution*. 8:45–61.

Castilla, Emilio J. 2007. *Dynamic Analysis in the Social Sciences,* London: Academic Press.

Coleman, James S. 1990. *Foundations of Social Theory,* Cambridge Mass. u.a: Belknap Press of Harvard Univ. Press.

Correll, Shelley J., Stephen Benard, and In Paik. 2007. "Getting a Job: Is There a Motherhood Penalty?" *American Journal of Sociology*. 112:1297–1338.

Crompton, Rosemary and Fiona Harris. 1999. "Attitudes, Women's Employment and the Changing Domestic Division of Labour" Pp. 279–315, in *Restructuring Gender Relations and Employment. The Decline of the Male Breadwinner,* edited by R. Crompton. Oxford: Oxford Univ. Press.

Daly, Mary 2000. "A Fine Balance: Women's Labor Market Participation in International Comparison" Pp. 467–510, in *Welfare and Work in the Open Economy. Diverse Responses to Common Challenges,* edited by F. W. Scharpf and V. A. Schmidt. Oxford: Oxford University Press.

Dannefer, Dale. 1987. "Aging as Intracohort Differentiation: Accentuation, the Matthew Effect, and the Life Course" *Sociological Forum*. 2:211–236.

Daymont, Thomas N. and Paul J. Andrisani. 1984. "Job Preferences, College Major, and the Gender Gap in Earnings" *The Journal of Human Resources*. 19:408–428.

Dearing, Helene, Helmut Hofer, Christine Lietz, Rudolf Winter-Ebmer, and Katharina Wrohlich. 2007. "Why Are Mothers Working Longer Hours in Austria than in Germany? A Comparative Microsimulation Analysis" *Fiscal Studies*. 28:463–495.

Demerouti, Evangelia, Bakker Arnold B., Nachreiner Friedhelm, and Schaufeli Wilmar B. 2001. "The Job Demands-Resources Model of Burnout" *Journal of Applied Psychology:*499–512.

Desai, Sonalde and Linda J. Waite. 1991. "Women's Employment During Pregnancy and After the First Birth: Occupational Characteristics and Work Commitment" *American Sociological Review*. 56:551–566.

Dex, Shirley, Kelly Ward, and Heather Joshi. 2008. "Changes in Women's Occupations and Occupational Mobility over 25 Years" Pp. 54–80, in *Women and Employment. Changing Lives and New Challenges,* edited by J. L. Scott, S. Dex, and H. Joshi. Cheltenham, UK ;, Northampton, MA: Edward Elgar.

Dikkers, Josje, Sabine Geurts, Laura Den Dulk, Bram Peper, and Michiel Kompier. 2004. "Relations Among Work-Home Culture, the Utilization of Work-Home Arrangements, and Work-Home Interference" *International Journal of Stress Management*. 11:323–345.

Den Dulk, Laura 1999. "Work-Family Arrangements in the Netherlands. The Role of Employers" Pp. 21–40, in *Work-Family Arrangements in Europe,* edited by L. Den Dulk, J. v. Doorne-Huiskes, and J. J. Schippers. Amsterdam: Thela Thesis.

------. 2001. *Work-Family Arrangements in Organisations. A Cross-National Study in the Netherlands, Italy, the United Kingdom and Sweden,* Amsterdam: Rozenberg Publishers.

Den Dulk, Laura and Bram Peper. 2007. "Working Parents' Use of Work-Life Policies" *Sociologia*. 53:51–70.

Duncan, Otis Dudley and Beverly Duncan. 1955. "A Methodological Analysis of Segregation Indices" *American Sociological Review*. 20:200–217.

Elder, Glen H. and Janet Z. Giele. 2009a. "Life Course Studies: An Evolving Field" Pp. 1–24, in *The Craft of Life Course Research,* edited by G. H. Elder and J. Z. Giele. New York: Guilford Press.

Elder, Glen H., and Janet Z. Giele, editors. 2009b. *The Craft of Life Course Research,* New York: Guilford Press.

England, Paula. 1992. *Comparable Worth. Theories and Evidence,* New York: Aldine de Gruyter.

------. 1994. "Neoclassical Economists' Theories of Discrimination" Pp. 59–70 in *Equal Employment Opportunity: Labor Market Discrimination and Public Policy,* edited by P. Burstein. New York: Aldine de Gruyter.

------. 2005. "Gender Inequality in Labor Markets: The Role of Motherhood and Segregation" *Social Politics: International Studies in Gender, State & Society*. 12:264–288.

------. 2010. "The Gender Revolution: Uneven and Stalled" *Gender & Society*. 24:149–166.

England, Paula, George Farkas, Barbara S. Kilbourne, and Thomas Dou. 1988. "Explaining Occupational Sex Segregation and Wages: Findings from a Model with Fixed Effects" *American Sociological Review*. 53:544–558.

Esping-Andersen, Gøsta. 1990. *The Three Worlds of Welfare Capitalism,* Cambridge: Polity Press.

------. 1999. *Social Foundations of Postindustrial Economies,* Oxford ;, New York: Oxford University Press.

------. 2009. *The Incomplete Revolution. Adapting Welfare States to Women's New Roles,* Cambridge: Polity Press.

Eurofound (European Foundation for the Improvement of Living and Working Conditions). 2009. *Women Managers and Hierarchical Structures in Working Life.* http://www.eurofound.europa.eu/pubdocs/2008/103/en/1/EF08103EN.pdf (14 May 2012).

European Commission. 2007. *Gender Mainstreaming of Employment Policies. A Comparative Review of Thirty European Countries (*14 May 2012).

------. 2008. *Report on Equality Between Women and Men (*14 May 2012).

------. 2009. *Report on Equality between Women and Men 2009.* http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=86&furtherPubs=yes.

------. 2010. *EU Plan of Action on Gender Equality and Women's Empowerment in Development. 2010-2015.*

http://ec.europa.eu/development/icenter/repository/SEC_2010_265_gender_action_plan_EN.pdf.

------. 2011. *Report on Progress on Equality between Men and Women in 2010. The gender balance in business leadership. European Union 2011. http://ec.europa.eu/justice/gender-equality/gender-decision-making/index_en.htm*

------. 2012. *European Community and Household Panel (ECHP).* http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/echp.

Eurostat. 1996. *The European Community Household Panel (ECHP). Survey Methodology and Implementation,* Luxembourg: Office for Official Publications of the European Communities.

Filer, Randall K. 1985. "Male-Female Wage Differences: The Importance of Compensating Differentials" *Industrial and Labor Relations Review*. 38:426–437.

------. 1989. "Occupational Segregation, Compensating Differentials and Comparable Worth" Pp. 153–176 in *Pay Equity: Empirical Inquiries,* edited by R. T. Michael, H. I. Hartmann, and B. O'Farrell. Washington, D.C: National Academy Press.

Fischer, Agneta H., Patricia M. Rodriguez Mosquera, Annelies E. M. Van Vianen, and Antony S. R. Manstead. 2004. "Gender and Culture Differences in Emotion" *Emotion*. 4:87–94.

Fuwa, Makiko 2004. "Macro-Level Gender Inequality and the Division of Household Labor in 22 Countries" *American Sociological Review*. 69:751–767.

Gangl, Markus and Andrea Ziefle. 2009. "Motherhood, Labour Force Behavior, and Women's Careers. An Empirical Assessment of the Wage Penalty for Motherhood in Britain, Germany, and the United States" *Demography*. 46:341–369.

Ganzeboom, Harry B. G., Paul M. de Graaf, and Donald J. Treiman. 1992. "A Standard International Socio-Economic Index of Occupational Status" *Social Science Research*. 21:1–56.

Gerhard, Ute, Trudie Knijn, and Anja Weckwert, editors. 2005. *Working Mothers in Europe. A Comparison of Policies and Practices,* Cheltenham, UK ;, Northhampton, MA: Edward Elgar.

Gerhart, Barry. 1990. "Gender Differences in Current and Starting Salaries: The Role of Performance, College Major, and Job Title" *Industrial and Labor Relations*. 43:418–433.

Glass, Jennifer. 1990. "The Impact of Occupational Segregation on Working Conditions" *Social Forces*. 68:779–796.

Goffman, Erving. 1963. *Stigma: Notes on the Management of Spoiled Identity,* Englewood Cliffs, N.J.: Prentice-Hall.

Gornick, Janet C. and Marcia K. Meyers. 2008. "Creating Gender Egalitarian Societies: An Agenda for Reform" *Politics & Society*. 36:313–349.

Gornick, Janet C. 2004. "Women's Economic Outcomes, Gender Inequality, and Public Policy: Lessons from the Luxembourg Income Study" *Socio-Economic Review*. 2:213–238.

Gornick, Janet C. and Ariane Hegewisch. 2010. *The Impact of 'Family Friendly Policies' on Women's Employment and the Costs and Benefits of Doing Business.*

http://www.hsph.harvard.edu/centers-institutes/population-development/files/gornick-hegewisch-wb-prepubversion-2011.pdf (04 May 2012).

Gornick, Janet C., Marcia K. Meyers, and Katherin E. Ross. 1998. "Public Policies and the Employment of Mothers. A Cross-National Study" *Social Science Quarterly*. 79:36–54.

------. 2003. *Families That Work. Policies for Reconciling Parenthood and Employment*, New York: Russel Sage Foundation.

Granovetter, Mark. 1974. *Getting a Job: A Study of Contacts and Careers*, Cambridge, Mass: Harvard Univ. Press.

Greenhaus, Jeffrey H. and Nicholas J. Beutell. 1985. "Sources of Conflict between Work and Family Roles" *The Academy of Management Review*. 10:76–88.

Grunow, Daniela, Heather Hofmeister, and Sandra Buchholz. 2006. "Late 20th-Century Persistence and Decline of the Female Homemaker in Germany and the United States" *International Sociology*. 21:101–131.

Grunow, Daniela, Florian Schulz, and Hans-Peter Blossfeld. 2012. "What determines change in the division of housework over the course of marriage?" *International Sociology*. Published online.

Grzywacz, Joseph G. and Adam B. Butler. 2005. "The Impact of Job Characteristics on Work-to-Family Facilitation: Testing a Theory and Distinguishing a Construct" *Journal of Occupational Health Psychology*. 10:97–109.

Gustafsson, Siv, Eiko Kenjoh, and Cecile Wetzels. 2002. "Postponement of Maternity and the Duration of Time Spent at Home after First Birth. Panel Data Analyses comparing Germany, Great Britain, the Netherlands and Sweden" *Public Finance and Management*. 2.

Haas, Barbara. 2005. "The Work-Care Balance: Is it Possible to Identify Typologies for Cross-National Comparisons?" *Current Sociology*. 53: 487-508.

Heckman, James J. 1979. "Sample Selection Bias as a Specification Error" *Econometrica*. 47:153–161.

Heinz, John P., Robert L. Nelson, Rebecca L. Sandefur, and Edward O. Laumann. 2005. *Urban Lawyers. The New Social Structure of the Bar*, Chicago: University of Chicago Press.

Henz, Ursula and Marianne Sundström. 2001. "Partner Choice and Women's Paid Work in Sweden. The Role of Earnings" *European Sociological Review*. 17:295–316.

Hochschild, Arlie. 1975. "Inside the Clockwork of Male Careers" Pp. 47–80, in *Women and the Power to Change*, edited by F. Howe. New York: McGraw-Hill.

Hochschild, Arlie R. and Anne Machung. 2003. *The Second Shift*, New York: Penguin Books.

Hopcroft, Rosemary L. 1996. "The Authority Attainment of Women: Competitive Sector Effects" *American Journal of Economics and Sociology*. 55:163–184.

House, James S. 1981. *Work Stress and Social Support*, MA: Addison-Wesley.

Hox, Joop. 2002. *Multilevel Analysis. Techniques and Applications*, Mahwah, New Jersey: LEA.

Hultin, Mia. 1998. "Gender Differences in Workplace Authority: Discrimination and the Role of Organizational Leaders" *Acta Sociologica*. 41:100–113.

Ingram, Paul L. and Tal Simons. 1995. "Institutional and Resource Dependence Determinants of Responsiveness to Work Family Issues" *Academy of Management Journal*. 38:1466–1482.

Jacobs, Sheila. 1999. "Trends in Women's Career Patterns and in Gender Occupational Mobility in Britain" *Gender, Work and Organization*. 6:32–46.

Jarrell, Stephen B. and T. D. Stanley. 2004. "Declining Bias and Gender Wage Discrimination? A Meta-Regression Analysis" *The Journal of Human Resources*. 39:828–838.

Jowell, R. a. t. C. C.-o. T. "European Social Survey 2004/2005. Technical Report", City University, London.

Juhn, Chinhui and Kevin M. Murphy. 1997. "Wage Inequality and Family Labor Supply" *Journal of Labor Economics*. 15:72–97.

Kalmijn, Matthijs and Tanja Van der Lippe. 1997. "Type of Schooling and Sex Differences in Earnings in the Netherlands" *European Sociological Review*. 13:1–15.

Kangas, Olli and Tine Rostgaard. 2007. "Preferences or Institutions? Work Family Life Opportunities in Seven European Countries" *Journal of European Social Policy*. 17:240–256.

Klerman, Jacob A. and Arleen Leibowitz. 1994. "The Work-Employment Distinction among New Mothers" *The Journal of Human Resources*. 29:277–303.

Knijn, Trudi 2003. "Verzorgingsstaten, zorgsystemen en zorgpakketten. Mogelijkheden voor de combinatie van zorg en arbeid in vergelijkend perspectief" *Tijdschrift voor Arbeidsvraagstukken*. 19:53–66.

Knijn, Trudi, Ingrid Jönsson, and Ute Klammer. 2005. "Care Packages. The Organisation of Work and Care by Working Mothers" Pp. 97–121, in *Working Mothers in Europe. A Comparison of Policies and Practices,* edited by U. Gerhard, T. Knijn, and A. Weckwert. Cheltenham, UK ;, Northhampton, MA: Edward Elgar.

Korpi, Walter 2000. "Faces of Inequality: Gender, Class, and Patterns of Inequalities in Different Types of Welfare States" *Social Politics: International Studies in Gender, State & Society*. 7:127–191.

Korupp, Sylvia E. 2000. *Mothers and the Process of Social Stratification,* Utrecht: Interuniversity center for social science theory and methodology.

Langan, Mary and Ilona Ostner. 1991. “Gender and Welfare. Towards a comparative framework.” In: Room, Graham (eds): European Developments in Social Policy, SAUS, Bristol, 127-150.

Lawrence, Barbara S. 1984. "Age Grading: The Implicit Organizational Timetable" *Journal of Organizational Behavior*. 5:23–35.

Leira, Arnlaug, Constanza Tobio, and Rossana Trifiletti. 2005. "Kinship and Informal Support: Care Resources for the First Generation of Working Mothers in Norway, Italy and Spain" Pp. 74–96, in *Working Mothers in Europe. A Comparison of Policies and Practices,* edited by U. Gerhard, T. Knijn, and A. Weckwert. Cheltenham, UK ;, Northhampton, MA: Edward Elgar.

Lewis, Suzan, Anne Watts, and Christine Camp. 1996. "Developing and Implementing Policies: Midland Bank’s Experience" Pp. 103–111, in *The Work-Family Challenge.*

Rethinking Employment, edited by S. Lewis and J. Lewis. London ;, Thousand Oaks, Calif: Sage Publications.

Lewis, Jane. 1992. "Gender and the Development of Welfare Regimes" *Journal of European Social Policy.* 3:159-173.

Mandel, Hadas and Moshe Semyonov. 2005. "Family Policies, Wage Structures, and Gender Gaps: Sources of Earnings Inequality in 20 Countries" *American Sociological Review*. 70:949–967.

------. 2006. "A Welfare State Paradox: State Interventions and Women's Employment Opportunities in 22 Countries" *American Journal of Sociology*. 111:1910–1949.

Mandel, Hadas and Michael Shalev. 2009. "How Welfare States Shape the Gender Pay Gap: A Theoretical and Comparative Analysis" *Social Forces*. 87:1873–1912.

Maume, Jr. David J. 1999. "Occupational Segregation and the Career Mobility of White Men and Women" *Social Forces*. 77:1433–1459.

McGuire, G. M. and B. F. Reskin. 1993. "Authority Hierarchies at Work: The Impacts of Race and Sex" *Gender & Society*. 7:487–506.

Miller, Amalia R. 2011. "The effects of motherhood timing on career path" *Journal of Population Economics*. 24:1071-1100.

Mills, Melinda, Ronald R. Rindfuss, Peter McDonald, and Egbert te Velde. "Why do people postpone parenthood? Reasons and social policy incentives" *Human Reproduction Update*. 17:848-860.

Mills, Melinda, Letizia Mencarini, Maria L. Tanturri, and Katia Begall. 2008. "Gender equity and fertility intentions in Italy and the Netherlands" *Demographic Research*. 18: 1-26.

Mincer, Jacob. 1974. *Schooling, Experience, and Earnings,* Washington: Columbia University Press.

Mincer, Jacob and Solomon Polachek. 1974. "Family Investments in Human Capital: Earnings of Women" *The Journal of Political Economy*. 82:78–108.

Misra, Joya, Michelle J. Budig, and Stephanie Moller. 2007. "Reconciliation Policies and the Effects of Motherhood on Employment, Earnings and Poverty" *Journal of Comparative Policy Analysis: Research and Practice*. 9:135–155.

Moen, Phyllis, editor. 2003. *It's About Time. Couples and Careers,* Ithaca, NY: ILR Press.

Moore, Gwen and Gene Shackman. 1996. "Gender and Authority: A Cross-National Study" *Social Science Quarterly*. 77:274–288.

Mueller, Charles W., Sarosh Kuruvilla, and Roderick D. Iverson. 1994. "Swedish Professionals and Gender Inequalities" *Social Forces*. 73:555–573.

Muthén, Linda K. and Bengt O. Muthén. *Mplus User's Guide*. Sixth Ed. http://www.statmodel.com/download/usersguide/Mplus%20Users%20Guide%20v6.pdf (14 May 2012).

Nieuwenhuis, Rense, Ariana Need, and Henk Van der Kolk. 2012. Institutional and Demographic Explanations of Women's Employment in 18 OECD Countries, 1975-1999 *Journal of Marriage and Family.* 74: 614-630.

NSD (Norwegian Social Science Data Service). 2012. *European Social Survey.* http://ess.nsd.uib.no/ess/round2/.

Oakley, Judith G. 2000. "Gender-based Barriers to Senior Management Positions. Understanding the Scarcity of Female CEOs" *Journal of Business Ethics*. 27:321–334.

OECD (Organisation for Economic Cooperation and Development). 2001a. "Balancing Work and Family Life: Helping Parents into Paid Employment" *OECD Employment Outlook 2001:*129–166.

------. 2001b. *OECD Employment Outlook 2001,* Paris: Organisation for Economic Co-operation and Development.

------. 2002a. *OECD Employment Outlook 2002,* Paris: Organisation for Economic Co-operation and Development.

------. 2002b. "Women at Work: Who Are They and How Are They Faring?" *OECD Employment Outlook 2002:*61–125.

------. 2003. "Labour Force Participation of Women: Empirical Evidence of the Role of Policy and other Determinants in OECD Countries" *OECD Economic Studies*. 37.

------. 2008. *OECD Family and Education Database.* http://www.oecd.org/document/4/0,3343,en_2649_34819_37836996_1_1_1_1,00.html.

------. 2012. *OECD Family Database.* www.oecd.org/social/family/database (14 May 2012).

OECD Statistics. 2012. *LFSS by Sex and Age - Indicators.* http://stats.oecd.org/Index.aspx?DatasetCode=LFS_SEXAGE_I_R (21 May 2012).

Okamoto, Dina and Paula England. 1999. "Is There a Supply Side to Occupational Sex Segregation?" *Sociological Perspectives*. 42:557–582.

Panayotova, Evelina and April Brayfield. 1997. "National Context and Gender Ideology: Attitudes toward Women's Employment in Hungary and the United States" *Gender and Society*. 11:627–655.

Parish, William L., Lingxin Hao, and Dennis P. Hogan. 1991. "Family Support Networks, Welfare, and Work among Young Mothers" *Journal of Marriage and the Family*. 53:203–215.

Petersen, Trond, Andrew M. Penner, and Geir Høgsnes. 2010. "The Within-Job Motherhood Wage Penalty in Norway, 1979-1996" *Journal of Marriage and Family*. 72:1274–1288.

Pettit, B. and J. Hook. 2005. "The Structure of Women's Employment in Comparative Perspective" *Social Forces*. 84:779–801.

Pettit, Becky and Jennifer L. Hook. 2009. *Gendered Tradeoffs: Family, Social Policy, and Economic Inequality in Twenty-One Countries,* New York: Russell Sage Foundation.

Phelps, Edmund S. 1972. "The Statistical Theory of Racism and Sexism" *The American Economic Review*. 62:659–661.

Pixley, Joy E. and Phyllis Moen. 2003. "Prioritizing Careers" Pp. 183–200, in *It's About Time. Couples and Careers,* edited by P. Moen. Ithaca, NY: ILR Press.

Plantenga, Janneke and Melissa Siegel. 2004. "European Childcare Strategies", Rijksuniversiteit Groningen, Groningen.

Plantenga, Janneke and Chantal Remery. 2005. *Reconciliation of Work and Private Life. A Comparative Review of Thirty European Countries.* http://www.cecot.es/harmonitzacio/documentacio/estudi%20CE.pdf.

Reskin, Barbara F. 2000. "The Proximate Causes of Employment Discrimination" *Contemporary Sociology*. 29:319–328.

Pfau-Effinger, Birgit 2005. "Welfare State Policies and care arrangements" *European* Societies. 7: 321-347.

Ridgeway, Cecilia L. 1997. "Interaction and the Conservation of Gender Inequality: Considering Employment" *American Sociological Review*. 62:218–235.

Rippeyoung, Phyllis L. F., Noonan, and Mary C. 2012. "Is Breastfeeding Truly Cost Free? Income Consequences of Breastfeeding for Women" *American Sociological Review*. 77:244–267.

Rodgers, Joseph L. 1999. "The Bootstrap, the Jackknife, and the Randomization Test: A Sampling Taxonomy" *Multivariate Behavioral Research*. 34:441–456.

Roos, Patricia A. and Mary L. Gatta. 1999. "The Gender Gap in Earnings: Trends, Explanations, and Prospects" Pp. 95–123, in *Handbook of Gender & Work*, edited by G. N. Powell. Thousand Oaks, Calif: Sage Publications.

Rosenbaum, James E. 1979a. "Organizational Career Mobility: Promotion Chances in a Corporation During Periods of Growth and Contraction" *American Journal of Sociology*. 85:21–48.

------. 1979b. "Tournament Mobility: Career Patterns in a Corporation" *Administrative Science Quarterly*. 24:220–241.

Rosenfeld, Rachel A. 1992. "Job Mobility and Career Processes" *Annual Review of Sociology*. 18:39–61.

Rosenfeld, Rachel A. and Gunn E. Birkelund. 1995. "Women's Part-Time Work: A Cross-National Comparison" *European Sociological Review*. 11:111–134.

Rosenfeld, Rachel A. and Arne L. Kalleberg. 1991. "Gender Inequality in the Labor Market: A Cross-National Perspective" *Acta Sociologica*. 34:207–225.

Rosenfeld, Rachel A., Mark E. Van Buren, and Arne L. Kalleberg. 1998. "Gender Differences in Supervisory Authority: Variation among Advanced Industrialized Democracies" *Social Science Research*. 27:23–49.

Rostgaard, Tine. 2004. *Family Support Policy in Central and Eastern Europe - A Decade and a Half of Transition.* http://unesdoc.unesco.org/images/0013/001337/133733e.pdf (21 May 2012).

Royston, Patrick. 2004. "Multiple Imputation of Missing Values" *The Stata Journal*. 4:227–241.

------. 2005. "Multiple Imputation of Missing Values: Update of Ice" *The Stata Journal*. 5:527–536.

Rubin, Donald B. 1987. *Multiple Imputation for Nonresponse in Surveys*, New York: John Wiley & Sons, Inc.

Sahibzada, Khatera, Leslie B. Hammer, Margaret B. Neal, and Daniel C. Kuang. 2005. "The Moderating Effects of Work-Family Role Combinations and Work-Family Organizational Culture on the Relationship Between Family-Friendly Workplace Supports and Job Satisfaction" *Journal of Family Issues*. 26:820–839.

Sainsbury, Diane, editor. 1994. *Gendering Welfare States,* London ; Thousand Oaks, Calif: Sage Publications.

Schippers, Joop. 1995. "Pay Differences Between Men and Women in the European Labour Market" Pp. 31–52, in *Women and the European Labour Markets,* edited by A. Van Doorne-Huiskes, J. Van Hoof, and E. Roelofs. London: P. Chapman Pub.

Schwartz, Christine R. 2010. "Earnings Inequality and the Changing Association Between Spouses' Earnings" *American Journal of Sociology*. 115:1524–1557.

SCP (Sociaal en Cultureel Planbureau). 2008. *Verdeelde tijd. Waarom vrouwen in deeltijd werken:* Sociaal en Cultureel Planbureau.

Shelton, Beth A. and Daphne John. 1996. "The Division of Household Labor" *Annual Review of Sociology*. 22:299–322.

Sigle-Rushton, Wendy and Jane Waldfogel. 2007. "Motherhood and Women's Earnings in Anglo-American, Continental European, and Nordic Countries" *Feminist Economics*. 13:55–91.

Smeaton, Deborah. 2006. "Work Return Rates After Childbirth in the UK - Trends, Determinants and Implications. A Comparison of Cohorts Born in 1958 and 1970" *Work, Employment & Society*. 20:5–25.

Snijders, Tom A. B. and Roel J Bosker. 1999. *Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling:* Sage Publications.

Staff, Jeremy and Jeylan T. Mortimer. 2012. "Explaining the Motherhood Wage Penalty During the Early Occupational Career" *Demography*. 49:1–21.

Starrels, Marjorie E. 1992. "Attitude Similarity Between Mothers and Children Regarding Maternal Employment" *Journal of Marriage and Family*. 54:91–103.

Steele, Claude M. 1997. "A Threat in the Air: How Stereotypes Shape Intellectual Identity and Performance" *American Psychologist*. 52:613–629.

Steiber, Nadia, and Barbara Haas. 2012. "Advances in explaining women's employment patterns" *Socio-Economic Review*. 10:343-367.

Stier, Haya, Noah Lewin-Epstein, and Michael Braun. 2001. "Welfare Regimes, Family-Supportive Policies, and Women's Employment along the Life-Course" *American Journal of Sociology*. 106:1731–1760.

Tam, Tony. 1997. "Sex Segregation and Occupational Gender Inequality in the United States: Devaluation or Specialized Training?" *American Journal of Sociology*. 102:1652–1692.

Taniguchi, Hiromi. 1999. "The Timing of Childbearing and Women's Wages" *Journal of Marriage and Family*. 61:1008–1019.

Thomas, Linda T. and Daniel C. Ganster. 1995. "Impact of Family-Supportive Work Variables on Work-Family Conflict and Strain: A control Perspective" *Journal of Applied Psychology*. 80:6–15.

Thompson, Cynthia A, Laura L Beauvais, and Karen S Lyness. 1999. "When Work-Family Benefits Are Not Enough: The Influence of Work-Family Culture on Benefit Utilization, Organizational Attachment, and Work-Family Conflict" *Journal of Vocational Behavior*. 54:329–415.

Tijdens, Kea. 1997. "Are Part-Time and Full Time Jobs Really so Different? Explaining Women's Working Time from Family, Housework, Individual and Work Characteristics" Pp. 171–188, in *Time Allocation and Gender. The Relationship between Paid Labour and Household Work,* edited by K. Tijdens, A. Van Doorne-Huiskes, and T. Willemsen. Tilburg: University Press.

Tomaskovic-Devey, Donald. 1993. "The Gender and Race Composition of Jobs and the Male/Female, White/Black Pay Gaps" *Social Forces*. 72:45–76.

Trappe, Heike and Rachel A. Rosenfeld. 2001. "Geschlechtsspezifische Segregation in der DDR und der BRD: Im Verlauf der Zeit und im Lebensverlauf" Pp. 152–181, in *Geschlechtersoziologie.* Sonderheft 41/2001 der Kölner Zeitschrift für Soziologie und Sozialpsychologie, edited by B. Heintz. Opladen/Wiesbaden: Westdeutscher Verlag.

Treas, Judith and Sonja Drobnič. 2010. *Dividing the Domestic. Men, Women, and Household Work in Cross-National Perspective*, Stanford, Calif: Stanford University Press.

Treas, Judith and Eric D. Widmer. 2000. "Married Women's Employment over the Life Course: Attitudes in Cross- National Perspective" *Social Forces*. 78:1409–1436.

UNDP 2012. *Human Development Report.* http://hdr.undp.org/en/reports/global/hdr2011/.

Uunk, Wilfred, Matthijs Kalmijn, and Ruud Muffels. 2005. "The Impact of Young Children on Women's Labour Supply: A Reassessment of Institutional Effects in Europe" *Acta Sociologica*. 48:41–62.

Valcour, Monique. 2007. "Work-Based Resources as Moderators of the Relationship between Work Hours and Satisfaction with Work-Family Balance" *Journal of Applied Psychology*. 92:1512–1523.

Van Daalen, Geertje, Tineke M. Willemsen, and Karin Sanders. 2006. "Reducing Work–Family Conflict through Different Sources of Social Support" *Journal of Vocational Behavior*. 69:462–476.

Van de Werfhorst, Herman G. 2001. *Field of Study and Social Inequality. Four Types of Educational Resources in the Process of Stratification in the Netherlands,* Nijmegen: University of Nijmegen Press.

Van der Lippe, Tanja. 2001. "The Effect of Individual and Institutional Constraints on Hours of Paid Work of Women. An International Comparison" Pp. 221–243, in *Women's Employment in a Comparative Perspective,* edited by T. Van der Lippe and L. Van Dijk. New York: Aldine de Gruyter.

Van der Lippe, Tanja and Jacques Siegers. 1994. "Division of Household and Paid Labour Between Partners. Effects of Relative Wage Rates and Social Norms" *Kyklos*. 47:109–136.

Van der Lippe, Tanja and Liset S. J. Van Dijk. 2002. "Comparative Research on Women's Employment" *Annual Review of Sociology*. 28:221–241.

Van der Lippe, Tanja, Judith de Ruijter, Esther de Ruijter, and Werner Raub. 2011. "Persistent Inequalities in Time Use between Men and Women. A Detailed Look at the Influence of Economic Circumstances, Policies, and Culture" *European Sociological Review*. 27:164–179.

Van Dijk, L. and Jacques Siegers 1998. "Norms of Network Members and Labour Supply by Dutch Mothers with Young Children" Pp. 57–80, in *Child Care and Female Labour Supply*

in the Netherlands. Facts, Analyses, Policies (Balancing the Welfare State), edited by J. Schippers, J. Siegers, and J. de Jong-Gierveld: Thesis Publishers.

Van Doorne-Huiskes, Anneke, Laura Den Dulk, and Joop Schippers. 1999. "Work-Family Arrangements in the cContext of Welfare States" Pp. 1–20, in *Work-Family Arrangements in Europe*, edited by L. Den Dulk, J. v. Doorne-Huiskes, and J. J. Schippers. Amsterdam: Thela Thesis.

Van Putten, Anne E., Pearl A. Dykstra, and Joop Schippers. 2008. "Just Like Mom? The Intergenerational Reproduction of Women's Paid Work" *European Sociological Review*. 24:435–449.

Verbakel, Cornelia M. C. 2008. *The Partner as Resource or Restriction? Labour Market Careers of Husbands and Wives and the Consequences for Inequality Between Couples*. Vol. 145, Nijmgen: PrintPartners Ipskamp.

Verbakel, Ellen. 2010. "Partner's Resources and Adjusting Working Hours in the Netherlands: Differences Over Time, Between Levels of Human Capital, and Over the Family Cycle" *Journal of Family Issues*. 31:1324–1362.

Verma, Vijay and Anne Clémeanceau. 1996. "Methodology of the European Community Household Panel" *Statistics in Transition*. 2:1023–1062.

Waldfogel, Jane. 1997. "The Effect of Children on Women's Wages" *American Sociological Review*. 62:209–217.

Waldfogel, Jane, Yoshio Higuchi, and Masahiro Abe. 1999. "Family Leave Policies and Women's Retention after Childbirth: Evidence from the United States, Britain, and Japan" *Journal of Population Economics*. 12:523–545.

Warr, Peter and Janet Pennington. 1994. "Occupational Age-Grading: Jobs for Older and Younger Nonmanagerial Employees" *Journal of Vocational Behavior*. 45:328–346.

Winslow-Bowe, Sarah. 2009. "Husbands' and Wives' Relative Earnings: Exploring Variation by Race, Human Capital, Labor Supply, and Life Stage" *Journal of Family Issues*. 30:1405–1432.

Wolf, W. C. and N. D. Fliegstein. 1979. "Sexual Stratification: Differences in Power in the Work Settings" *Social Forces*. 58:94–107.

World Bank. 2008. *Global Purchasing Power Parities and Real Expenditures: 2005 International Comparison Program*, Washington: World Bank.

Wright, Erik O., Janeen Baxter, and Gunn E. Birkelund. 1995. "The Gender Gap in Workplace Authority: A Cross-National Study" *American Sociological Review*. 60:407–435.

Yaish, Meir and Haya Stier. 2009. "Gender Inequality in Job Authority: A Cross-National Comparison of 26 Countries" *Work and Occupations*. 36:343–366.

Acknowledgements

Writing this dissertation was a challenge, which I passed only due to the support of many people. First of all I want to thank my supervisors Tanja van der Lippe and Ineke Maas. Your feedback to all the pieces of my dissertation were always helpful, constructive and to the point. But your support was not only related to my PHD thesis. You showed understanding and empathy for my own work-life balance, introduced me to well-known researchers in our field and enabled me to integrate a new job position with finishing my thesis.

One chapter was written during my stay as a visiting scholar at the University of California Irvine. I want to thank Judy Treas and Matt Huffman, for being wonderful hosts and for our pleasant cooperation and inspiring work on our paper. I really enjoyed working with you! I also want to thank other members at the UCI, especially Tsui-o who was a wonderful roommate during my stay.

Laura den Dulk, without you I would probably not have started a PHD. You encouraged me to publish my master thesis with you, enabled me to present my work at a conference and you suggested me to apply for a PHD position at the ICS. Thank you for your trust in my work and your support.

I also owe many thanks to my paranimfen Mariska and Wike. I enjoyed our little work family meetings and our dinner evenings. You were a great support not only during the time when I finished my thesis. I am looking forward to go on with our joined paper and to future visits of you in Bielefeld. Mariska, my roommate, alles komt goed. You were right ;-).

Many thanks go also to my wonderful year group: Miranda, Lieselotte and Dominik. Party evenings, Zeeland, dinners, Gutenberg coffee, emotional support… I enjoyed the time with you and I hope we stay in touch!

I also owe many thanks to my colleagues at the Department of Sociology in Utrecht and the ICS for their valuable feedback at Forum Days, in the work family seminars and the MASS seminars. My ICS colleagues contributed to a great work environment making the four years also an enjoyable time. Siggi and Wiebke, thanks for your help to integrate in Utrecht. Steffi, Lies and Anca you were wonderful roommates at work, who facilitated my start at the ICS and in Utrecht. The last years I shared an office with Mariska and Nynke. Discussions at the

white board, Pizza nights, Dutch politics, Dutch songs, great times. I also enjoyed the coffee breaks at the Gutenbergs, chats in between, the AIO dinners, or parties with Esther, Petra, Tim, Sara, Sarah, Sanne, Vincenz, Wouter, Borja, Marieke, Anne, Richard, Hilde … I also appreciated the support of Tineke, Dave, Miranda, Ellen, Pim and Marjet. Marielle thank you for having always an open ear to our AIO problems.

I also want to thank Martin Diewald and my new team colleagues, Reinhard, Stephanie, and Silvia, for the possibility to work in the B3 project at the University Bielefeld while finishing my dissertation.

Working on this dissertation was also not possible without my friends from Düsseldorf and Bielefeld: Maren, Lena, Rina, Vio, Kati, Jana, Tina and Sabrina. It was great to just enjoy life with you all. Thanks also to my tennis crew for the enjoyable evenings in Bielefeld.

The support and love of my parents was crucial to where I am now. Thank you that you always believed in me and encouraged me on my way! I always enjoy coming home. Jan, it is great to have you as brother. Sven, I am grateful that you have supported me throughout the whole period of writing my dissertation. You encouraged me to start in Utrecht as a PHD student, travelled back and forth to Utrecht, supported me during the lows and celebrated the highs, showed me to worry less and to enjoy more.

About the author

Anja-Kristin Abendroth was born in Wuppertal, Germany, on March 21st, 1982. She got her high school degree (Abitur) at the Schloss-Gymnasium in Düsseldorf, Germany in 2001. After finishing her apprenticeship in Office Management at McKinsey & Company Düsseldorf (Consulting) in 2003 she studied Sociology and Health Communication at Bielefeld University, Germany. She obtained a bachelor degree in Health Communication in 2007 and a diploma degree (equivalent to Master's degree) in Sociology in 2008. This book is the result of her Ph.D. research conducted during her employment at the Interuniversity Center for Social Theory and Methodology (ICS) at Utrecht University from 2008 until 2012. In January 2010 she was a visiting scholar at the State Institute for Family Research at the University of Bamberg (ifb), Germany and in November and December 2010 a visiting scholar at the University of California Irvine, America. Since October 2011 she is working at the Collaborative Research Center 882 "From Heterogeneities to Inequalities" at the department of Sociology at the University Bielefeld, Germany.

ICS dissertation series

The ICS series presents dissertations of the Interuniversity Center for Social Science Theory and Methodology. Each of these studies aims at integrating explicit theory formation with state of the art empirical research or at the development of advanced methods for empirical research. The ICS was founded in 1986 as a cooperative effort of the universities of Groningen and Utrecht. Since 1992, the ICS expanded to the Universi¬ty of Nijmegen. Most of the projects are financed by the participa¬ting universities or by the Netherlands Organization for Scien¬ti¬fic Research (NWO). The international composi¬tion of the ICS graduate students is mirrored in the increasing international orientation of the projects and thus of the ICS series itself.

1) C. van Liere, (1990). Lastige Leerlingen. Een empirisch onderzoek naar sociale oorzaken van probleemgedrag op basisscholen. Amsterdam: Thesis Publishers.
2) Marco H.D. van Leeuwen, (1990). Bijstand in Amsterdam, ca. 1800 1850. Armenzorg als beheersings en overlevings¬strategie. ICS dissertation, Utrecht.
3) I. Maas, (1990). Deelname aan podiumkunsten via de podia, de media en actieve beoefe¬ning. Substitutie of leereffec¬ten? Amsterdam: Thesis Publishers.
4) M.I. Broese van Groenou, (1991). Gescheiden Netwerken. De relaties met vrien¬den en verwanten na echtscheiding. Amsterdam: Thesis Publishers.
5) Jan M.M. van den Bos, (1991). Dutch EC Policy Making. A Model Guided Approach to Coordination and Negotia¬tion. Amsterdam: Thesis Publishers.
6) Karin Sanders, (1991). Vrouwelijke Pioniers. Vrouwen en mannen met een 'mannelijke' hogere beroepsopleiding aan het begin van hun loopbaan. Amsterdam: Thesis Publishers.
7) Sjerp de Vries, (1991). Egoism, Altruism, and Social Justice. Theory and Experiments on Cooperation in Social Dilemmas. Amsterdam: Thesis Publishers.
8) Ronald S. Batenburg, (1991). Automatisering in bedrijf. Amsterdam: Thesis Publishers.
9) Rudi Wielers, (1991). Selectie en allocatie op de arbeids¬markt. Een uitwerking voor de informele en geïnstitu¬tionaliseerde kinderopvang. Amsterdam: Thesis Publishers.
10) Gert P. Westert, (1991). Verschillen in ziekenhuisgebruik. ICS dissertation, Groningen.
11) Hanneke Hermsen, (1992). Votes and Policy Preferences. Equi¬libria in Party Systems. Amster¬dam: Thesis Publishers.
12) Cora J.M. Maas, (1992). Probleemleerlingen in het basisonder¬wijs. Amsterdam: Thesis Publis¬hers.
13) Ed A.W. Boxman, (1992). Contacten en carrière. Een empirisch theoretisch onderzoek naar de relatie tussen soci¬ale net¬wer¬ken en ar¬beidsmarktposities. Amsterdam: The¬sis Pu¬blis¬hers.
14) Conny G.J. Taes, (1992). Kijken naar banen. Een onderzoek naar de inschatting van arbeids¬marktkansen bij schoolverla¬ters uit het middelbaar beroepsonderwijs. Amsterdam: Thesis Publishers.
15) Peter van Roozendaal, (1992). Cabinets in Multi Party Demo¬cracies. The Effect of Dominant and Central Parties on Cabi¬net Composition and Durability. Amsterdam: Thesis Publishers.
16) Marcel van Dam, (1992). Regio zonder regie. Verschillen in en effectiviteit van gemeentelijk arbeidsmarktbeleid. Amster¬dam: Thesis Publishers.
17) Tanja van der Lippe, (1993). Arbeidsverdeling tussen mannen en vrouwen. Amsterdam: Thesis Publishers.
18) Marc A. Jacobs, (1993). Software: Kopen of Kopiëren? Een sociaal wetenschappelijk onderzoek onder PC gebruikers. Amsterdam: Thesis Publishers.
19) Peter van der Meer, (1993). Verdringing op de Nederlandse arbeidsmarkt. Sector en seksever¬schillen. Amsterdam: Thesis Publishers.
20) Gerbert Kraaykamp, (1993). Over lezen gesproken. Een studie naar sociale differentiatie in leesgedrag. Amsterdam: Thesis Publishers.
21) Evelien Zeggelink, (1993). Strangers into Friends. The Evolu¬tion of Friendship Networks Using an Individual Oriented Modeling Approach. Amsterdam: Thesis Publishers.
22) Jaco Berveling, (1994). Het stempel op de besluitvorming. Macht, invloed en besluitvorming op twee Amsterdamse beleidsterreinen. Amsterdam: Thesis Publishers.
23) Wim Bernasco, (1994). Coupled Careers. The Effects of Spou¬se's Resources on Success at Work. Amsterdam: Thesis Publishers.

24) Liset van Dijk, (1994). Choices in Child Care. The Distribu¬tion of Child Care Among Mothers, Fathers and Non Parental Care Providers. Amsterdam: Thesis Publishers.
25) Jos de Haan, (1994). Research Groups in Dutch Sociology. Amsterdam: Thesis Publishers.
26) K. Boahene, (1995). Innovation Adoption as a Socio Economic Process. The Case of the Ghanai¬an Cocoa Industry. Amsterdam: Thesis Publishers.
27) Paul E.M. Ligthart, (1995). Solidarity in Economic Transacti¬ons. An Experimental Study of Framing Effects in Bargaining and Contracting. Amsterdam: Thesis Publishers.
28) Roger Th. A.J. Leenders, (1995). Structure and Influence. Statistical Models for the Dyna¬mics of Actor Attributes, Network Structure, and their Interdependence. Amsterdam: Thesis Publishers.
29) Beate Völker, (1995). Should Auld Acquaintance Be Forgot...? Institutions of Communism, the Transition to Capitalism and Personal Networks: the Case of East Germa¬ny. Amsterdam: Thesis Publis¬hers.
30) A. Cancrinus Matthijsse, (1995). Tussen hulpverlening en ondernemerschap. Beroepsuitoefening en taakopvattingen van openbare apothekers in een aantal West Europese landen. Amsterdam: Thesis Publishers.
31) Nardi Steverink, (1996). Zo lang mogelijk zelfstandig. Naar een verklaring van verschillen in oriëntatie ten aanzien van opname in een verzorgingstehuis onder fysiek kwetsbare ouderen. Amsterdam: Thesis Publishers.
32) Ellen Lindeman, (1996). Participatie in vrijwilligerswerk. Amsterdam: Thesis Publishers.
33) Chris Snijders, (1996). Trust and Commitments. Amsterdam: Thesis Publishers.
34) Koos Postma, (1996). Changing Prejudice in Hungary. A Study on the Collapse of State Socia¬lism and Its Impact on Preju¬dice Against Gyp¬sies and Jews. Amsterdam: Thesis Publishers.
35) Jooske T. van Busschbach, (1996). Uit het oog, uit het hart? Stabiliteit en verandering in persoonlijke relaties. Amsterdam: Thesis Publishers.
36) René Torenvlied, (1996). Besluiten in uitvoering. Theorieën over beleidsuitvoering modelma¬tig getoetst op sociale vernieuwing in drie gemeen¬ten. Amster¬dam: Thesis Publishers.
37) Andreas Flache, (1996). The Double Edge of Networks. An Ana¬lysis of the Effect of Informal Networks on Cooperation in Social Dilemmas. Amsterdam: Thesis Publishers.
38) Kees van Veen, (1997). Inside an Internal Labor Market: Formal Rules, Flexibility and Career Lines in a Dutch Manufacturing Company. Amsterdam: Thesis Publishers.
39) Lucienne van Eijk, (1997). Activity and Well being in the Elderly. Amsterdam: Thesis Publis¬hers.
40) Róbert Gál, (1997). Unreliability. Contract Discipline and Contract Governance under Economic Transition. Amsterdam: Thesis Publishers.
41) Anne Geerte van de Goor, (1997). Effects of Regulation on Disability Duration. ¬ICS dissertation, Utrecht.
42) Boris Blumberg, (1997). Das Management von Technologiekoop¬erationen. Partnersuche und Verhandlungen mit dem Partner aus Empirisch Theoretischer Perspektive. ICS dissertation, Utrecht.
43) Marijke von Bergh, (1997). Loopbanen van oudere werknemers. Amsterdam: Thesis Publishers.
44) Anna Petra Nieboer, (1997). Life Events and Well Being: A Prospective Study on Changes in Well Being of Elderly Peop¬le Due to a Serious Illness Event or Death of the Spouse. Amsterdam: Thesis Publishers.
45) Jacques Niehof, (1997). Resources and Social Reproduction: The Effects of Cultural and Material Resources on Educational and Occupational Careers in Industrial Nations at the End of the Twentieth Century. ICS dissertation, Nijmegen.
46) Ariana Need, (1997). The Kindred Vote. Individual and Family Effects of Social Class and Religion on Electoral Change in the Netherlands, 1956 1994. ICS dissertation, Nijmegen.
47) Jim Allen, (1997). Sector Composition and the Effect of Education on Wages: an Internatio¬nal Comparison. Amster¬dam: The¬sis Pu¬blishers.
48) Jack B.F. Hutten, (1998). Workload and Provision of Care in General Practice. An Empirical Study of the Relation Between Workload of Dutch General Practitioners and the Content and Quality of their Care. ICS dissertation, Utrecht.
49) Per B. Kropp, (1998). Berufserfolg im Transformationsprozeß. Eine theoretisch empirische Studie über die Gewinner und Ver¬lierer der Wende in Ostdeutschland. ICS dissertation, Utrecht.
50) Maarten H.J. Wolbers, (1998). Diploma inflatie en verdringing op de arbeidsmarkt. Een studie naar ontwikkelingen in de opbrengsten van diploma's in Ne¬derland. ICS dissertation, Nijmegen.
51) Wilma Smeenk, (1998). Opportunity and Marriage. The Impact of Individual Resources and Marriage Market Structure on First Marriage Timing and Partner Choice in the Netherlands. ICS dissertation, Nijmegen.
52) Marinus Spreen, (1999). Sampling Personal Network Structures: Statistical Inference in Ego-Graphs. ICS dissertation, Groningen.

53) Vincent Buskens, (1999). Social Networks and Trust. ICS dissertation, Utrecht.
54) Susanne Rijken, (1999). Educational Expansion and Status Attainment. A Cross-National and Over-Time Comparison. ICS dissertation, Utrecht.
55) Mérove Gijsberts, (1999). The Legitimation of Inequality in State-Socialist and Market Societies, 1987-1996. ICS dissertation, Utrecht.
56) Gerhard G. Van de Bunt, (1999). Friends by Choice. An Actor-Oriented Statistical Network Model for Friendship Networks Through Time. ICS dissertation, Groningen.
57) Robert Thomson, (1999). The Party Mandate: Election Pledges and Government Actions in the Netherlands, 1986 1998. Amsterdam: Thela Thesis.
58) Corine Baarda, (1999). Politieke besluiten en boeren beslissingen. Het draagvlak van het mestbeleid tot 2000. ICS dissertation, Groningen.
59) Rafael Wittek, (1999). Interdependence and Informal Control in Organizations. ICS dissertation, Groningen.
60) Diane Payne, (1999). Policy Making in the European Union: an Analysis of the Impact of the Reform of the Structural Funds in Ireland. ICS dissertation, Groningen.
61)René Veenstra, (1999). Leerlingen Klassen Scholen. Prestaties en vorderingen van leerlingen in het voortgezet onderwijs. Amsterdam, Thela Thesis.
62) Marjolein Achterkamp, (1999). Influence Strategies in Collective Decision Making. A Comparison of Two Models. ICS dissertation, Groningen.
63) Peter Mühlau, (2000). The Governance of the Employment Relation. A Relational Signaling Perspective. ICS dissertation, Groningen.
64) Agnes Akkerman, (2000). Verdeelde vakbeweging en stakingen. Concurrentie om leden. ICS dissertation, Groningen.
65) Sandra van Thiel, (2000). Quangocratization: Trends, Causes and Consequences. ICS dissertation, Utrecht.
66) Rudi Turksema, (2000). Supply of Day Care. ICS dissertation, Utrecht.
67) Sylvia E. Korupp (2000). Mothers and the Process of Social Stratification. ICS dissertation, Utrecht.
68) Bernard A. Nijstad (2000). How the Group Affects the Mind: Effects of Communication in Idea Generating Groups. ICS dissertation, Utrecht.
69) Inge F. de Wolf (2000). Opleidingsspecialisatie en arbeidsmarktsucces van sociale wetenschappers. ICS dissertation, Utrecht.
70) Jan Kratzer (2001). Communication and Performance: An Empirical Study in Innovation Teams. ICS-dissertation, Groningen.
71) Madelon Kroneman (2001). Healthcare Systems and Hospital Bed Use. ICS/NIVEL-dissertation, Utrecht.
72) Herman van de Werfhorst (2001). Field of Study and Social Inequality. Four Types of Educational Resources in the Process of Stratification in the Netherlands. ICS-dissertation, Nijmegen.
73) Tamás Bartus (2001). Social Capital and Earnings Inequalities. The Role of Informal Job Search in Hungary. ICS-dissertation Groningen.
74) Hester Moerbeek (2001). Friends and Foes in the Occupational Career. The Influence of Sweet and Sour Social Capital on the Labour Market. ICS-dissertation, Nijmegen.
75) Marcel van Assen (2001). Essays on Actor Perspectives in Exchange Networks and Social Dilemmas. ICS-dissertation, Groningen.
76) Inge Sieben (2001). Sibling Similarities and Social Stratification. The Impact of Family Background across Countries and Cohorts. ICS-dissertation, Nijmegen.
77) Alinda van Bruggen (2001). Individual Production of Social Well Being. An Exploratory Study. ICS-dissertation, Groningen.
78) Marcel Coenders (2001). Nationalistic Attitudes and Ethnic Exclusionism in a Comparative Perspective: An Empirical Study of Attitudes Toward the Country and Ethnic Immigrants in 22 Countries. ICS-dissertation, Nijmegen.
79) Marcel Lubbers (2001). Exclusionistic Electorates. Extreme Right Wing Voting in Western Europe. ICS-dissertation, Nijmegen.
80) Uwe Matzat (2001). Social Networks and Cooperation in Electronic Communities. A theoretical-empirical Analysis of Academic Communication and Internet Discussion Groups. ICS-dissertation, Groningen.
81) Jacques P.G. Janssen (2002). Do Opposites Attract Divorce? Dimensions of Mixed Marriage and the Risk of Divorce in the Netherlands, ICS-dissertation, Nijmegen.
82) Miranda Jansen (2002). Waardenoriëntaties en partnerrelaties. Een panelstudie naar wederzijdse invloeden,

ICS-dissertation, Utrecht.
83) Anne Rigt Poortman (2002). Socioeconomic Causes and Consequences of Divorce. ICS-dissertation, Utrecht.
84) Alexander Gattig (2002). Intertemporal Decision Making, ICS-dissertation, Groningen.
85) Gerrit Rooks (2002). Contract en Conflict: Strategisch Management van Inkooptransacties, ICS-dissertation, Utrecht.
86) Károly Takács (2002). Social Networks and Intergroup Conflict. ICS-dissertation, Groningen.
87) Thomas Gautschi (2002). Trust and Exchange, Effects of Temporal Embeddedness and Network Embeddedness on Providing and Dividing a Surplus. ICS-dissertation, Utrecht.
88) Hilde Bras (2002). Zeeuwse meiden. Dienen in de levensloop van vrouwen, ca. 1850 – 1950. Aksant Academic Publishers, Amsterdam.
89) Merijn Rengers (2002). Economic Lives of Artists. Studies into Careers and the Labour Market in the Cultural Sector, ICS-dissertation, Utrecht.
90) Annelies Kassenberg (2002). Wat scholieren bindt. Sociale gemeenschap in scholen, ICS-dissertation, Groningen
91) Marc Verboord (2003). Moet de meester dalen of de leerling klimmen? De invloed van literatuuronderwijs en ouders op het lezen van boeken tussen 1975 en 2000. ICS-dissertation, Utrecht.
92) Marcel van Egmond (2003). Rain Falls on All of Us (but Some Manage to Get More Wet than Others): Political Context and Electoral Participation. ICS-dissertation, Nijmegen.
93) Justine Horgan (2003). High Performance Human Resource Management in Ireland and the Netherlands: Adoption and Effectiveness. ICS-dissertation, Groningen.
94) Corine Hoeben (2003). LETS' Be a Community. Community in Local Exchange Trading Systems. ICS-dissertation, Groningen.
95) Christian Steglich (2003). The Framing of Decision Situations. Automatic Goal Selection and Rational Goal Pursuit. ICS-dissertation, Groningen.
96) Johan van Wilsem (2003). Crime and Context. The Impact of Individual, Neighborhood, City and Country Characteristics on Victimization. ICS-dissertation, Nijmegen.
97) Christiaan Monden (2003). Education, Inequality and Health. The Impact of Partners and Life Course. ICS-dissertation, Nijmegen.
98) Evelyn Hello (2003). Educational Attainment and Ethnic Attitudes. How to Explain their Relationship. ICS-dissertation, Nijmegen.
99) Marnix Croes en Peter Tammes (2004). Gif laten wij niet voortbestaan. Een onderzoek naar de overlevingskansen van joden in de Nederlandse gemeenten, 1940-1945. Aksant Academic Publishers, Amsterdam
100) Ineke Nagel (2004). Cultuurdeelname in de levensloop. ICS- dissertation, Utrecht.
101) Marieke van der Wal (2004). Competencies to Participate in Life. Measurement and the Impact of School. ICS-dissertation, Groningen.
102)Vivian Meertens (2004). Depressive Symptoms in the General Population: a Multifactorial Social Approach. ICS -dissertation, Nijmegen.
103) Hanneke Schuurmans (2004). Promoting Well-Being in Frail Elderly People. Theory and Intervention. ICS-dissertation, Groningen.
104) Javier Arregui (2004). Negotiation in Legislative Decision-Making in the European Union. ICS-dissertation, Groningen.
105) Tamar Fischer (2004). Parental Divorce, Conflict and Resources. The Effects on Children's Behaviour Problems, Socioeconomic Attainment, and Transitions in the Demographic Career. ICS-dissertation, Nijmegen.
106) René Bekkers (2004). Giving and Volunteering in the Netherlands: Sociological and Psychological Perspectives. ICS-dissertation, Utrecht.
107) Renée van der Hulst (2004). Gender Differences in Workplace Authority: An Empirical Study on Social Networks. ICS-dissertation, Groningen.
108) Rita Smaniotto (2004). 'You Scratch My Back and I Scratch Yours' Versus 'Love Thy Neighbour'. Two Proximate Mechanisms of Reciprocal Altruism. ICS-dissertation, Groningen.
109) Maurice Gesthuizen (2004). The Life-Course of the Low-Educated in the Netherlands: Social and Economic Risks. ICS-dissertation, Nijmegen.
110) Carlijne Philips (2005). Vakantiegemeenschappen. Kwalitatief en Kwantitatief Onderzoek naar

Gelegenheid en Refreshergemeenschap tijdens de Vakantie. ICS-dissertation, Groningen.
111) Esther de Ruijter (2005). Household Outsourcing. ICS-dissertation, Utrecht.
112) Frank van Tubergen (2005). The Integration of Immigrants in Cross-National Perspective: Origin, Destination, and Community Effects. ICS-dissertation, Utrecht.
113) Ferry Koster (2005). For the Time Being. Accounting for Inconclusive Findings Concerning the Effects of Temporary Employment Relationships on Solidary Behavior of Employees. ICS-dissertation, Groningen.
114) Carolien Klein Haarhuis (2005). Promoting Anti-Corruption Reforms. Evaluating the Implementation of a World Bank Anti-Corruption Program in Seven African Countries (1999-2001). ICS-dissertation, Utrecht.
115) Martin van der Gaag (2005). Measurement of Individual Social Capital. ICS-dissertation, Groningen.
116) Johan Hansen (2005). Shaping Careers of Men and Women in Organizational Contexts. ICS-dissertation, Utrecht.
117) Davide Barrera (2005). Trust in Embedded Settings. ICS-dissertation, Utrecht.
118) Mattijs Lambooij (2005). Promoting Cooperation. Studies into the Effects of Long-Term and Short-Term Rewards on Cooperation of Employees. ICS-dissertation, Utrecht.
119) Lotte Vermeij (2006). What's Cooking? Cultural Boundaries among Dutch Teenagers of Different Ethnic Origins in the Context of School. ICS-dissertation, Utrecht.
120) Mathilde Strating (2006). Facing the Challenge of Rheumatoid Arthritis. A 13-year Prospective Study among Patients and Cross-Sectional Study among Their Partners. ICS-dissertation, Groningen.
121) Jannes de Vries (2006). Measurement Error in Family Background Variables: The Bias in the Intergenerational Transmission of Status, Cultural Consumption, Party Preference, and Religiosity. ICS-dissertation, Nijmegen.
122) Stefan Thau (2006). Workplace Deviance: Four Studies on Employee Motives and Self-Regulation. ICS-dissertation, Groningen.
123) Mirjam Plantinga (2006). Employee Motivation and Employee Performance in Child Care. The effects of the Introduction of Market Forces on Employees in the Dutch Child-Care Sector. ICS-dissertation, Groningen.
124) Helga de Valk (2006). Pathways into Adulthood. A Comparative Study on Family Life Transitions among Migrant and Dutch Youth. ICS-dissertation, Utrecht.
125) Henrike Elzen (2006). Self-Management for Chronically Ill Older People. ICS-Dissertation, Groningen.
126) Ayse Güveli (2007). New Social Classes within the Service Class in the Netherlands and Britain. Adjusting the EGP Class Schema for the Technocrats and the Social and Cultural Specialists. ICS-dissertation, Nijmegen.
127) Willem-Jan Verhoeven (2007). Income Attainment in Post-Communist Societies. ICS-dissertation, Utrecht.
128) Marieke Voorpostel (2007). Sibling support: The Exchange of Help among Brothers and Sisters in the Netherlands. ICS-dissertation, Utrecht.
129) Jacob Dijkstra (2007). The Effects of Externalities on Partner Choice and Payoffs in Exchange Networks. ICS-dissertation, Groningen.
130) Patricia van Echtelt (2007). Time-Greedy Employment Relationships: Four Studies on the Time Claims of Post-Fordist Work. ICS-dissertation, Groningen.
131) Sonja Vogt (2007). Heterogeneity in Social Dilemmas: The Case of Social Support. ICS-dissertation, Utrecht.
132) Michael Schweinberger (2007). Statistical Methods for Studying the Evolution of Networks and Behavior. ICS-dissertation, Groningen.
133) István Back (2007). Commitment and Evolution: Connecting Emotion and Reason in Long-term Relationships. ICS-dissertation, Groningen.
134) Ruben van Gaalen (2007). Solidarity and Ambivalence in Parent-Child Relationships. ICS-dissertation, Utrecht.
135) Jan Reitsma (2007). Religiosity and Solidarity – Dimensions and Relationships Disentangled and Tested. ICS-dissertation, Nijmegen.
136) Jan Kornelis Dijkstra (2007). Status and Affection among (Pre)Adolescents and Their Relation with Antisocial and Prosocial Behavior. ICS-dissertation, Groningen.
137) Wouter van Gils (2007). Full-time Working Couples in the Netherlands. Causes and Consequences. ICS-dissertation, Nijmegen.
138) Djamila Schans (2007). Ethnic Diversity in Intergenerational Solidarity. ICS-dissertation, Utrecht.
139) Ruud van der Meulen (2007). Brug over Woelig Water: Lidmaatschap van Sportverenigingen, Vriendschappen, Kennissenkringen en Veralgemeend Vertrouwen. ICS-dissertation, Nijmegen.

140) Andrea Knecht (2008). Friendship Selection and Friends' Influence. Dynamics of Networks and Actor Attributes in Early Adolescence. ICS-dissertation, Utrecht.
141) Ingrid Doorten (2008). The Division of Unpaid Work in the Household: A Stubborn Pattern? ICS-dissertation, Utrecht.
142) Stijn Ruiter (2008). Association in Context and Association as Context: Causes and Consequences of Voluntary Association Involvement. ICS-dissertation, Nijmegen.
143) Janneke Joly (2008). People on Our Minds: When Humanized Contexts Activate Social Norms. ICS-dissertation, Groningen.
144) Margreet Frieling (2008). 'Joint production' als motor voor actief burgerschap in de buurt. ICS-dissertion, Groningen.
145) Ellen Verbakel (2008). The Partner as Resource or Restriction? Labour Market Careers of Husbands and Wives and the Consequences for Inequality Between Couples. ICS-dissertation, Nijmegen.
146) Gijs van Houten (2008). Beleidsuitvoering in gelaagde stelsels. De doorwerking van aanbevelingen van de Stichting van de Arbeid in het CAO-overleg. ICS-dissertation, Utrecht.
147) Eva Jaspers (2008). Intolerance over Time. Macro and Micro Level Questions on Attitudes Towards Euthanasia, Homosexuality and Ethnic Minorities. ICS-dissertation, Nijmegen.
148) Gijs Weijters (2008). Youth Delinquency in Dutch Cities and Schools: A Multilevel Approach. ICS-dissertation, Nijmegen.
149) Jessica Pass (2009). The Self in Social Rejection. ICS-dissertation, Groningen.
150) Gerald Mollenhorst (2009). Networks in Contexts. How Meeting Opportunities Affect Personal Relationships. ICS-dissertation, Utrecht.
151) Tom van der Meer (2009). States of Freely Associating Citizens: Comparative Studies into the Impact of State Institutions on Social, Civic and Political Participation. ICS-dissertation, Nijmegen.
152) Manuela Vieth (2009). Commitments and Reciprocity in Trust Situations. Experimental Studies on Obligation, Indignation, and Self-Consistency. ICS-dissertation, Utrecht.
153) Rense Corten (2009). Co-evolution of Social Networks and Behavior in Social Dilemmas: Theoretical and Empirical Perspectives. ICS-dissertation, Utrecht.
154) Arieke J. Rijken (2009). Happy Families, High Fertility? Childbearing Choices in the Context of Family and Partner Relationships. ICS-dissertation, Utrecht.
155) Jochem Tolsma (2009). Ethnic Hostility among Ethnic Majority and Minority Groups in the Netherlands. An Investigation into the Impact of Social Mobility Experiences, the Local Living Environment and Educational Attainment on Ethnic Hostility. ICS-dissertation, Nijmegen.
156) Freek Bucx (2009). Linked Lives: Young Adults' Life Course and Relations With Parents. ICS-dissertation, Utrecht.
157) Philip Wotschack (2009). Household Governance and Time Allocation. Four studies on the combination of work and care. ICS-dissertation, Groningen.
158) Nienke Moor (2009). Explaining Worldwide Religious Diversity. The Relationship between Subsistence Technologies and Ideas about the Unknown in Pre-industrial and (Post-)industrial Societies. ICS-dissertation, Nijmegen.
159) Lieke ten Brummelhuis (2009). Family Matters at Work. Depleting and Enriching Effects of Employees' Family lives on Work Outcomes. ICS-dissertation, Utrecht.
160) Renske Keizer (2010). Remaining Childless. Causes and Consequences from a Life Course Perspective. ICS-dissertation, Utrecht.
161) Miranda Sentse (2010). Bridging Contexts: The interplay between Family, Child, and Peers in Explaining Problem Behavior in Early Adolescence. ICS-dissertation, Groningen.
162) Nicole Tieben (2010). Transitions, Tracks and Transformations. Social Inequality in Transitions into, through and out of Secondary Education in the Netherlands for Cohorts Born Between 1914 and 1985. ICS-dissertation, Nijmegen.
163) Birgit Pauksztat (2010). Speaking up in Organizations: Four Studies on Employee Voice. ICS-dissertation, Groningen.
164) Richard Zijdeman (2010). Status Attainment in the Netherlands, 1811-1941. Spatial and Temporal Variation Before and During Industrialization. ICS-dissertation, Utrecht.
165) Rianne Kloosterman (2010). Social Background and Children's Educational Careers. The Primary and Secondary Effects of Social Background over Transitions and over Time in the Netherlands. ICS-dissertation,

Nijmegen.
166) Olav Aarts (2010). Religious Diversity and Religious Involvement. A Study of Religious Markets in Western Societies at the End of the Twentieth Century. ICS-dissertation, Nijmegen.
167) Stephanie Wiesmann (2010). 24/7 Negotiation in Couples Transition to Parenthood. ICS-dissertation, Utrecht.
168) Borja Martinovic (2010). Interethnic Contacts: A Dynamic Analysis of Interaction Between Immigrants and Natives in Western Countries. ICS-dissertation, Utrecht.
169) Anne Roeters (2010). Family Life Under Pressure? Parents' Paid Work and the Quantity and Quality of Parent-Child and Family Time. ICS-dissertation, Utrecht.
170) Jelle Sijtsema (2010). Adolescent Aggressive Behavior: Status and Stimulation Goals in Relation to the Peer Context. ICS-dissertation, Groningen.
171) Kees Keizer (2010). The Spreading of Disorder. ICS-dissertation, Groningen.
172) Michael Mäs (2010). The Diversity Puzzle. Explaining Clustering and Polarization of Opinions. ICS-dissertation, Groningen.
173) Marie-Louise Damen (2010). Cultuurdeelname en CKV. Studies naar effecten van kunsteducatie op de cultuurdeelname van leerlingen tijdens en na het voortgezet onderwijs. ICS-dissertation, Utrecht.
174) Marieke van de Rakt (2011). Two generations of Crime: The Intergenerational Transmission of Convictions over the Life Course. ICS-dissertation, Nijmegen.
175) Willem Huijnk (2011). Family Life and Ethnic Attitudes. The Role of the Family for Attitudes Towards Intermarriage and Acculturation Among Minority and Majority Groups. ICS-dissertation, Utrecht.
176) Tim Huijts (2011). Social Ties and Health in Europe. Individual Associations, Cross-National Variations, and Contextual Explanations. ICS-dissertation, Nijmegen.
177) Wouter Steenbeek (2011). Social and Physical Disorder. How Community, Business Presence and Entrepreneurs Influence Disorder in Dutch Neighborhoods. ICS-dissertation, Utrecht.
178) Miranda Vervoort (2011). Living Together Apart? Ethnic Concentration in the Neighborhood and Ethnic Minorities' Social Contacts and Language Practices. ICS-dissertation, Utrecht.
179) Agnieszka Kanas (2011).The Economic Performance of Immigrants. The Role of Human and Social Capital. ICS-dissertation, Utrecht.
180) Lea Ellwardt (2011). Gossip in Organizations. A Social Network Study. ICS-dissertation, Groningen.
181) Annemarije Oosterwaal (2011). The Gap between Decision and Implementation. Decision making, Delegation and Compliance in Governmental and Organizational Settings. ICS-dissertation, Utrecht.
182) Natascha Notten (2011). Parents and the Media. Causes and Consequences of Parental Media Socialization. ICS-dissertation, Nijmegen.
183) Tobias Stark (2011). Integration in Schools. A Process Perspective on Students' Interethnic Attitudes and Interpersonal Relationships. ICS-dissertation, Groningen.
184) Giedo Jansen (2011). Social Cleavages and Political Choices. Large-scale Comparisons of Social Class, Religion and Voting Behavior in Western Democracies. ICS-dissertation, Nijmegen.
185) Ruud van der Horst (2011). Network Effects on Treatment Results in a Closed Forensic Psychiatric Setting. ICS-dissertation, Groningen.
186) Mark Levels (2011). Abortion Laws in European Countries between 1960 and 2010. Legislative Developments and Their Consequences for Women's Reproductive Decision-making. ICS-dissertation, Nijmegen.
187) Marieke van Londen (2012). Exclusion of ethnic minorities in the Netherlands. The effects of individual and situational characteristics on opposition to ethnic policy and ethnically mixed neighbourhoods. ICS-dissertation, Nijmegen.
188) Sigrid M. Mohnen (2012). Neighborhood context and health: How neighborhood social capital affects individual health. ICS-dissertation, Utrecht.
189) Asya Zhelyazkova (2012). Compliance under Controversy: Analysis of the Transposition of European Directives and their Provisions. ICS-dissertation, Utrecht.
190) Valeska Korff (2012). Between Cause and Control: Management in a Humanitarian Organization. ICS-dissertation, Groningen.
191) Maike Gieling (2012). Dealing with Diversity: adolescents' support for civil liberties and immigrant rights. ICS-dissertation, Utrecht.
192) Katya Ivanova (2012). From Parents to Partners: The Impact of Family on Romantic Relationships in

Adolescence and Emerging Adulthood. ICS-dissertation, Groningen.
193) Jelmer Schalk (2012). The Performance of Public Corporate Actors: Essays on Effects of Institutional and Network Embeddedness in Supranational, National, and Local Collaborative Contexts. ICS-dissertation, Utrecht.
194) Alona Labun (2012). Social Networks and Informal Power in Organizations. ICS-dissertation, Groningen.
195) Michal Bojanowski (2012). Essays on Social Network Formation in Heterogeneous Populations: Models, Methods, and Empirical Analyses. ICS-dissertation, Utrecht.
196) Anca Minescu (2012). Relative Group Position and Intergroup Attitudes in Russia. ICS-dissertation, Utrecht.
197) Marieke van Schellen (2012). Marriage and crime over the life course. The criminal careers of convicts and their spouses. ICS-dissertation, Utrecht.
198) Mieke Maliepaard (2012). Religious Trends and Social Integration: Muslim Minorities in the Netherlands. ICS-dissertation, Utrecht.
199) Fransje Smits (2012). Turks and Moroccans in the Low Countries around the year 2000: determinants of religiosity, trend in religiosity and determinants of the trend. ICS-dissertation, Nijmegen.
200) Roderick Sluiter (2012). The Diffusion of Morality Policies among Western European Countries between 1960 and 2010. A Comparison of Temporal and Spatial Diffusion Patterns of Six Morality and Eleven Non-morality Policies. ICS-dissertation, Nijmegen.
201) Nicoletta Balbo (2012). Family, Friends and Fertility. ICS-dissertation, Groningen.
202) Anke Munniksma (2013). Crossing ethnic boundaries: Parental resistance to and consequences of adolescents' cross-ethnic peer relations. ICS-dissertation, Groningen.
203) Anja Abendroth (2013). Working Women in Europe. How the Country, Workplace, and Family Context Matter. ICS-dissertation, Utrecht.