

Welfare State Incentives for Maternal Labor Supply

**Individual and Country
Level Evidence**

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"[O]urs is an epoch in which it is almost universally agreed that a profound realignment, if not revolution, is underway in our economy and society." (Esping-Andersen 1990: 222)

1. INTRODUCTION

It is probably fair to say that only few would disagree with Esping-Andersen's statement and that today, more than twenty years later, this statement appears to be even more true. However, from the perspective of the social sciences, the mere perception of change is hardly sufficient, but rather the starting point for analyzing, comparing and explaining social, political and economic developments around the world. Within the social sciences, welfare state research is a very good example of how research questions have been adapted to changing circumstances and realities and how analyses have consistently built on previously accumulated knowledge. In this manner, welfare state research has become more and more sensitive to the specific relation between the welfare state and the women who live in it, moving from research approaches that revolved around the typical male full-time worker to approaches that took the particular situation and needs of women and mothers into account. Yet, even feminist welfare state research is missing comprehensive welfare state comparisons that strictly focus on the very specific incentives created by welfare states to enhance female and especially maternal labor supply.

The present study is based on 27 labor supply incentives from the fields of parental leave, early childhood education and care, school policy, employment law and taxation and allowances which are, for the most part, available for 22 OECD countries and which have been assembled in the FEMMES Dataset (Female and Maternal Employment Support) compiled for the purpose of the present study. Applying this selection of indicators to a comparison of welfare state incentives for maternal employment can be regarded as an attempt to overcome the shortcomings of existing gender-sensitive welfare state classifications in a variety of ways. On the one hand, existing feminist welfare state research has often contributed very detailed single or small-n country studies (cp. Peattie and Rein 1983; Shaver 1983; Lewis

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1992 / 2001; Orloff 1993; O'Connor 1999; for an overview cp. Van der Lippe / Van Dijk 2002). On the other hand, existing gender-sensitive comparisons of a larger number of countries have often focused on indicators from the fields of parental leave and childcare and on very aggregate and condensed measures of these policies (Gornick et al. 1996a; Stier et al. 2001; Pettit and Hook 2005 / 2009). In turn, other studies have equated female welfare with family welfare by using the financial support of families as one of their main indicators which can be misleading since the dependence on public benefits is certainly less emancipating than the enablement of employment (cp. Siaroff 1994; Gauthier 1999).

If the present study is considered an attempt to close existing research gaps, one question appears to be the most imposing: From a feminist perspective, why should welfare states be measured according to the effort they direct towards the support of maternal employment in the first place? And does the creation of incentives for labor force participation not imply exactly the form of commodification which has been established as a condition of which (the ideal-typical and male) worker has sought to be relieved from by means of the welfare state (cp. Esping-Andersen 1990)? Even though this objection is justified, it can be argued that it is exactly this process of commodification which will also enable women and mothers to demand the same rights of decommodification that their male counterparts are already entitled to (cp. Orloff 1993).

Furthermore, in the prevailing absence of unconditional basic income guarantees, being employed is still the almost only possibility of maintaining a sufficient and independent standard of living for many individuals. Being able to supply labor to the market remains the most reliable way of gaining independence from the private and the public sphere, i.e. from the family, from husbands as the sole breadwinners and from public programs like social assistance. And even despite the overall increases in female and maternal employment whose remaining cross-national variation is still worth investigating, the social sciences have detected and discussed other emerging social developments, such as increasing family instabilities and the increasing need of more than one earner to support a family, in whose light female and maternal employment becomes even more important for individual and family well-being (cp. Lesthaeghe 1995; Taylor-Gooby 2004; Bonoli 2006). Existing

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feminist research has shown in detail that, while being employed and being independent from family members, spouses and social welfare programs have always been more or less a given for men during their working age, the ability to maintain autonomous households has often been a problem for women and mothers. Therefore, the second chapter of this dissertation will start by an appreciation of the state of the art of welfare state research to trace back how it moved from ignoring the gender dimension to the consideration of the specific relationship between women and the welfare state.

Welfare state comparisons have been a prominent part of the social sciences since the 1960s. In their beginnings, these comparisons mainly addressed the causes of welfare state development and its cross-national variation. This early welfare state research was mainly based on three theoretical schools which either focused on structural, institutional or political determinants of welfare state emergence and differences (cp. Wilensky and Lebaux 1965; Wilensky 1975; Gough 1979; Korpi 1983; Orloff and Skocpol 1984; Korpi 1985; Skocpol and Amenta 1986; Skocpol 1995).

This line of research was followed by welfare state comparisons which, on the one hand, sought to be more systematic by classifying welfare states into different types and, on the other hand, sought to be more in-depth by using more than mere social expenditure data which had been the most profound critique of the early welfare state research (cp. Gilbert and Moon 1988). The majority of the welfare state typologies have been developed in the last decade of the 20th century (cp. Arts and Gelissen 2002 for an overview) and even though this line moved beyond using crude social expenditure data to a more comprehensive evaluation of social policies and the specific benefit design of welfare states, it has often been criticized for ignoring the gender perspective.

As indicated above, feminist research contributed a range of studies which illustrate why the inclusion of a gendered perspective on the welfare state is important and how the traditional theoretical framework of welfare state research can be enhanced, mostly by means of single country studies. Feminist welfare state research has also contributed comparative studies that reassessed gender-insensitive typologies and established gender-sensitive welfare state comparisons. However, many of these

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studies find that even applying an enhanced gender perspective on the welfare state does not necessarily lead to different welfare state types and they rarely go beyond using (aggregated) measures for parental leave, childcare and the financial side of family policy. The range of gender-sensitive welfare state comparisons and classifications shows that research has remained inconclusive on how and why countries can be assumed to cluster. Findings range from welfare state typologies with clusters that are very comparable to traditional regimes to the reassessment of the position of single countries (cp. Lewis 1992; Siaroff 1994; Gornick et al. 1996a; Gauthier 1999; Stier et al. 2001).

When tracing back the development of welfare state research, it becomes apparent that the mere comparison of welfare states on the country level has only been the initial approach that was followed by studies moving beyond the mere treatment of the welfare state as the dependent variable. The second part of the theoretical chapter will therefore turn towards research that started to be interested in how the welfare state affects societies and the life of individuals instead of focusing on the factors that influenced welfare state development in the first place. Early studies dealing with the effect of welfare state policy mostly focused on aggregate economic well-being like GDP per capita, but this line of research also started to apply more disaggregate measurements of well-being on the household level and on the individual level. Absolute and relative measures of poverty as well as measures of subjective poverty perception have been very prominent conceptualizations of the effect of welfare state policy (cp. Kangas and Palme 1998; Korpi and Palme 1998). But even though those studies started to take the outcomes of welfare state policies into account instead of conceiving the welfare state itself as the core subject of research, they have also been criticized for one short-coming: their predominant focus on poverty rates and income inequality as welfare state outcomes and the prevailing analysis of cash income instead of benefits in kind which are considered being just as important as cash benefits (Townsend and Gordon 2000).

Again, feminist welfare state research has contributed to a more in-depth analysis of the effects of welfare state policy on the specific living situation of women and mothers. For the most part, these studies make recourse to the indicators that have been used before to evaluate and compare welfare states at the country level and

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apply these various sets of policy indicators to analyses of the actual effects of welfare state policies on female and maternal labor force participation and a number of further individual outcomes (Gornick et al. 1996b, Platenga and Hansen 1999, Gornick and Meyers 2003, Pettit and Hook 2005 / 2009; for an overview cp. Van der Lippe / Van Dijk 2002). However, as indicated before, these indicators mostly cover parental leave and childcare schemes or much aggregated measures of policies that are considered beneficial for women and their employment situation. The last part of the second chapter will present the theoretical foundation of the present study and, in this manner, show why maternal labor supply can be related to policy fields beyond childcare and parental leave and how the selections of meaningful policy determinants of maternal labor supply that have been applied in earlier studies can be combined and extended. Since the present assumptions are based on labor supply theory and since the point of departure of this approach is the individual, no analysis of labor supply behavior can ignore individual characteristics, such as age, education, family composition and especially the wage and other forms of income that are not derived from individual market work. The basic assumption of labor supply theory refers to the relationship between market income and non-market income, stating that individuals will not supply labor to the market when their non-market income equals or exceeds their market wage. In turn, factors that increase the effective market wage are assumed to increase the probability of labor supply while factors that decrease the effective market wage tend to decrease its probability (cp. Blau 2006).

While these explanatory factors are surely to be found among the afore-mentioned individual characteristics of women and mothers, they can also be found in the specific configuration of welfare states. While policy instruments from the field of *parental leave*, such as entitlements, length and payments, mainly regulate the relationship between employer and employee in the period after childbirth and function as a stabilizer of labor market attachment, labor supply incentives from the field of *childcare* cover legal, monetary and infrastructural aspects which can help mothers to carry out uninterrupted employment. Even though *school policy* can be understood as institutionalized de facto childcare for every child, the configuration of certain features of school education, such as school schedules, can differ across countries and can be assumed to influence the possibility of reconciliation of work and family life for parents of school-aged children. Policy instruments from the field

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of *employment law* basically capture the extent of (temporal) flexibility and compensation at the workplace, such as overtime payments, vacation, working time and protection against the discrimination of part-time employees. Policy instruments from the field of *taxes and allowances* refer more directly to the influence of the welfare state on the financial situation of families, such as family cash benefits and family tax breaks.

Understandably, the collection of any such a database requires a firm and comprehensive presentation of the single variables. Therefore, the third chapter is used to present the rationales behind and the coding of every single indicator from the five policy fields and will give detailed information on the respective data sources. Furthermore, this chapter will present information on the methodology and on the individual data used for the second part of the analysis which cover 15 European countries and come from the *European Union Statistics on Income and Living Conditions 2005* (EU SILC). This dataset provides individual information for over 40.000 mothers and makes it possible to include data on the educational background, the age, the marital status, the number of children, the parenting status, the individual market wage and the non-labor income.

Just as the theoretical chapter, the analysis is divided in several parts. In a first step, the present study applies the indicators for welfare state incentives for maternal labor supply to a comparison and classification of welfare states on the country level. To what extent do labor supply incentives differ across countries? And to what extent and why do countries cluster differently from traditional welfare state types when these incentives take center stage? This country-level analysis begins by presenting descriptive information on the cross-national variation of welfare state incentives for maternal labor supply across 22 OECD countries which already indicates that conventional welfare state types are likely not to be appropriate to classify countries according to their level of incentives for maternal labor supply. A subsequent cluster analysis reveals that countries are indeed likely to be classified in a way that is considerably different from traditional welfare state typologies. Analyses of variance are used to underline the inappropriateness of traditional welfare state types and the better suitability of the country groups established by means of the cluster analysis which differ according to the level and the policy focus of welfare state incentives

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for maternal labor supply. In this way, for instance, France is found to cluster with a number of Scandinavian countries, the Netherlands show a high degree of similarity with welfare states in Southern Europe, Germany is found to group with countries from the liberal welfare regime and Canada is found to cluster with a number of conservative welfare states. Since this mere result will, however, not reveal enough about its causes, the country analysis concludes by presenting a number of more in-depth country studies which will illustrate to what extent and why some countries show a rather unexpected policy configuration by means of the cases of Norway, Canada and Germany. Those three studies suggest that for every country, the specific historical and political conditions appear to be particular to an extent that it can be seen as an argument in favor of studies using qualitative historical data and that can even call the meaningfulness of country groups or a new typology into question.

In a second step, the analysis turns towards the question which welfare state incentives are positively associated with maternal employment decisions. For the analysis of the effects of welfare state incentives on individual maternal labor supply, the individual level data come into play. Under control for a number of individual and country level characteristics, such as the general female labor market situation and the prevalence of traditional attitudes towards gender roles in society, the association of welfare state incentives and maternal labor supply decisions is analyzed by means of hierarchical logistic regressions. These analyses give further insight on how the relationship between incentives and maternal employment decisions is shaped, which welfare state incentives are most associated with maternal labor supply and how feminist welfare state research of welfare state effects can be made more conclusive and comprehensive. Using the average level of welfare state incentives across the single indicators for each of the five policy fields reveals that these aggregated measures seem to be prone to hide potential effects because they leave the average level of welfare state incentives in the field of parental leave to be the only policy area showing a significant and positive association with the odds of maternal employment.

Therefore, the subsequent analyses use the single indicators from the five policy fields. On the one hand, these analyses help clarify previous inconsistencies with regard to parental leave regulations whose effects have certainly been the most

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ambiguously discussed in feminist welfare state research and show that it is mostly the existence of paternity leave and the length of the *paid* leave (in months and also as share of the total leave) that is positively associated with maternal labor supply as opposed to the legal entitlement to maternity leave and the overall length (without considering how much is covered by a replacement rate) which show no association with maternal labor supply. The analyses of the effects of the single indicators also show that using average levels seems to have concealed the effects of a number of single indicators from the field of childcare and employment law. The more detailed analyses show a significant and positive association of the continuity of the childcare day, of the actual childcare coverage rates and of the public childcare expenditures as a share of the GDP, indicating that the infrastructural and financial aspects of this policy field are more important than, for instance, an existing legal entitlement to care. In the field of employment law, the results show that the length of the standard workweek, the legal number of vacation days per year and the first premium for working overtime hours are positively associated with maternal labor supply, indicating that on the one hand, the aspect of temporal flexibility and, on the other hand, the compensation of arising additional costs due to working overtime are important factors for maternal employment decisions. In turn, all indicators from the field of school policy and from the field of taxation and allowances do not show significant associations with maternal labor supply. These findings can be interpreted as a confirmation of the main critique of welfare state research which has been directed towards the use of indicators for the financial support provided by the state. Furthermore, these findings suggest that crucial decisions about labor supply are already made before children reach school age and that the positive effect of a comprehensive school system only sets in when mothers have already been employed before.

2. THEORETICAL FRAMEWORK

In its beginnings, welfare state research was primarily interested in explaining the welfare state itself, in explaining its emergence and in explaining its cross-national variation. Since the 1980s, theories of welfare state development have been joined by welfare state regime theories which have sought to cluster welfare states according to prevailing policy combinations, underlying patterns and common driving forces of welfare state development. Recent trends in welfare state research, however, go beyond the interest in explaining how welfare states emerged, why they differ from each other and which countries can be grouped into so-called regimes. They bear witness to considerations about the actual effects of welfare state policies on societal and individual outcomes. Furthermore, both theories dealing with welfare state development and theories dealing with welfare state effects have been criticized for their ignorance of the gender dimension and have therefore been increasingly directed towards the specific relationship between women and the welfare state.

Since the present study means to tie in with the state of the art, these developments have to be taken into account when building its theoretical framework. When dealing with questions of maternal labor supply, the gender perspective has to be the center of interest. However, it is important to trace back the evolution of welfare state research to understand its movement from explaining welfare state development to explaining the influence of welfare state policies on societal and individual outcomes and to understand how the present study combines these two research purposes by choosing the same theoretical framework both to compare welfare state incentives for maternal labor supply across countries and to measure the effects of these incentives on actual maternal labor supply.

This chapter will start by tracing back the line of welfare state research that has dealt with the development and the cross-national variation of welfare state policy. After briefly introducing the main schools of research with regard to welfare state development (including their achievements and limitations) and some of the central welfare state typologies, the feminist critique of this research will be presented. On the one hand, this will shed light on the question why it is important to include the gender dimension into welfare state research and why the relationship between

women and the welfare state is assumed to be different from the relationship between men and the welfare state. On the other hand, feminist welfare state research has not only provided a theoretical argumentation in favor of the inclusion of a gender dimension, but has although reviewed existing welfare state classifications and thereby provided more and more evidence for the assumption that countries would cluster in a way that is different from traditional regime types when the gender dimension is taken into consideration.

The development of welfare state research has not only shown that the gender dimension is of particular importance for the evaluation of welfare states, but also that it is worth investigating the effects of welfare state policy on societal and individual outcomes. Therefore, the second part of this chapter deals with existing research on welfare state effects in general and on welfare state effects on the specific living conditions of women in particular. In a final step, the third part of this chapter discusses the theoretical framework for the present study. It illustrates the basic assumptions of labor supply theory and its application on welfare state incentives for maternal labor supply, incentives which are assumed to be found in the policy fields of parental leave, public childcare, school policy, employment law and taxation and allowances. This framework will both be applied to the comparison of welfare state incentives for maternal labor supply across countries and to the analysis of the relationship between those incentives and maternal employment decisions.

2.1. The Welfare State as Explanandum

2.1.1. Theories of Welfare State Development

Initial theories of welfare state development focused merely on the determinants of welfare state emergence and treated the welfare state as a dependent variable. Those theories of welfare state development can be classified into three schools of research (cp. Lessenich 2000). While the first school of research considered economic forces and industrialization to be the determining elements driving welfare state expansion, the second school of research focused on political and institutional factors like the development of democratic institutions. The third school of research assumed power

resources and the degree of working class mobilization to be the explanatory factors for different levels of welfare state expansion and consolidation.

The Systemic / Structuralist Approach

This first approach focuses on systemic or structuralist characteristics of states and their economies. It is mainly the logic of industrialism that provides the basis for this argument, stating that “[...] industrialization made social policy both necessary and possible” (Esping-Andersen 1989: 14). On the one hand, social policy became necessary because industrialization, modernization and all the changes that came along with these developments, such as the increase in social mobility, urbanization and more individualistic ways of life, led to the disintegration of traditional forms of social security provided by families, communities and religious institutions. On the other hand, other developments which accompanied industrialization and modernization, such as the constitution and expansion of bureaucratic institutions, made social policy possible because those institutions were able to manage collective goods and because they were interested in promoting their own growth. Within the structuralist approach, the Marxist logic of capitalism that is assumed to have led to an expansion of welfare state policies rather focuses on the mode of production, arguing that “[c]apital accumulation creates contradictions that social reform can alleviate” (ibid.).

However, many researchers in favor of the structuralist approach argue that without a certain level of economic development, welfare state expansion would not have been possible, by this means explaining why the expansion of social policy started somewhat belated and not directly at the outset of industrialization. Two prominent representatives of this approach of welfare state research are Harold Wilensky and Phillips Cutright. Cutright (1965) measures welfare state policy in terms of national social insurance program experience and social insurance program completion, showing that among more than sixty nations, social security coverage is highly correlated with the level of economic development. Cutright considers urbanization and industrialization to be the main reasons for the appearance of social insurance programs. For him, the reason for many social insurance programs to start with benefits in the case of work injuries was the increasing number of work accidents due to the expansion of industrial activity. After the introduction of accident

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insurances, many countries passed on to establish additional social insurance programs against the risks of unemployment, sickness and old age.

Wilensky and Lebeaux (1965) draw an even more comprehensive picture of the influence of industrialization. They analyze the relationship between the development of the urban-industrial society, the emergence of social problems and the supply and organization of social welfare in the United States. Between the Civil War and World War I, in the early phase of industrialization, the demands and needs of the industry changed and dominated the country's social and political life. A huge part of the population that originally lived in the rural areas of the country was recruited and transformed for the labor in the industrial economy and the new factory system made demands on the workers that they did not experience before. They were confronted with new work routines and they found themselves being dependent on employers and the labor market. Furthermore, industrialization had a major influence on family life. The role of women and mothers changed considerably, their labor market participation increased and elderly care turned out to be a challenge as well since traditional structures of care provided by the family began to disappear. Finally, industrialization influenced the degree of social stratification as well because the distinction between the working class and the capitalist class became more extensive due to the new modes of industrial production (Wilensky and Lebeaux 1965: 50 et seqq.). According to Wilensky and Lebeaux, “[t]he social problems that emerged from industrialization in a capitalist setting created the demand for social welfare [...]” (ibid: 113).

In his later work, Wilensky (1975) goes beyond the case study of the United States and tries to explain the origins and the development of welfare state across sixty-four countries. Here, Wilensky assumes that there is a general agreement concerning the main cause of the establishment of welfare state policies – industrialization and economic development accompanied by a variety of political and social changes. However, Wilensky points out that there is more uncertainty about the role of other nation-specific features, namely the level of economic growth, values and beliefs and the political system. He finds that an increasing level of economic growth is positively related to a broader level of social protection (in terms of eligibility and in terms of covered risks) while the political system seems to be a much weaker

explanatory factor for the level of welfare state development (Wilensky 1975: 20 et seqq.). Liberal democratic and totalitarian regimes have only a small effect on the level of social protection while authoritarian political institutions do not affect the extent of welfare state policies at all. Ideology, operationalized as economic individualism versus economic collectivism, does not seem to have an effect on the level of social protection either (ibid: 27 et seqq.). The only single cause beyond the level of economic development that Wilensky finds to be a predictor of welfare state spending is the proportion of elderly people in the population (ibid: 47). With this work, Wilensky supports Cutright's findings which also indicate that the level of economic development is one central factor influencing the level of welfare state development while other factors like the character of political institutions or values and beliefs do not seem to play an important role.

The Institutional Approach

The second approach towards the causes of welfare state expansion focuses on the exact role of institutions that had been denied by the structuralist approach. Changes in the political system and the introduction of democratic institutions are at the heart of this approach which argues that separating the economic from the political and social sphere will have a negative effect on the society. Social policy is seen “[...] as one necessary condition for the re-integration of the social economy [...]” and democracy is seen as an institution “[...] that cannot resist majoritarian demands [...]” (Esping-Andersen 1989: 15).

Three of the most prominent representatives of the institutionalist approach are Theda Skocpol, Edwin Amenta and Ann Orloff. In Skocpol's book *Protecting Soldiers and Mothers: The Political Origins of Social Policy in the United States* (1995), the author tries to explain why the United States has pursued a very different approach to social policy than many other developed nations. She points out that while at the beginning of the 20th century, many countries started to implement regulations and benefits for male wage earners and their dependents, the United States started to support soldiers and mothers instead. It was only in the 1930s that the United States changed their social policy orientation and did no longer exclusively focus on those two population groups (ibid: 525 et seqq.). Skocpol clearly argues in favor of an institutional perspective towards welfare state

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development. She is not convinced that social policies simply develop along with capitalism, urbanization and industrialization or that the welfare state simply responds to the demands that emerging social classes formulate. Instead, she argues that “[g]overnmental institutions, electoral rules, political parties, and prior public policies – all of these, and their transformations over time, create many of the limits and opportunities within which social policies are devised and changed by politically involved actors over the course of a nation’s history [...]” (ibid: 527.)

Skocpol and Amenta (1986) compare previous approaches to explain welfare state development, such as the logic of industrialism and the logic of capitalism, with studies that focus on the independent impact of states on social policy making. They summarize approaches which consider democratic political processes, global economic interrelations, geopolitical competitions and international cultural modeling to be important determinants of welfare state development and explain the main aspects of a state-centered theory of social policymaking. They assume that the implementation of social policies might be shaped by different organizational structures and capacities of states and by the effects of policies that have been previously implemented (ibid: 147). This can happen by policy initiatives of civil bureaucrats and state authorities and also the degree of (de-)centralization is supposed to play an important role. Furthermore, state structures also impact the possible courses of action of political parties and they refer to one of the earlier works by Orloff and Skocpol (1984) in which those authors show “[...] how various sequences and forms of democratization and state bureaucratization affected both the capacities of civil administrations and the orientations of working-class groups and middle-class reformers toward social spending policies in Britain, Canada, and the United States from the nineteenth century through the 1930s [...]” (Skocpol and Amenta 1986: 149). Finally, the authors argue that existing social policies might as well reshape politics. They refer to two path breaking studies by Esping-Andersen (1978 / 1985) in which he shows how crucial the policy choices made by parties in power are. Esping-Andersen argues that policies shape the future success of those parties who implemented these very policies by either undermining or consolidating electoral coalitions.

The Power Resources Approach

The third approach within the cluster of initial theories of welfare state development considers class struggle to be the decisive factor influencing the degree of welfare state development. Compared to the first two approaches, this approach focuses much more on agents in general, on social classes as the main agents of change in particular and on the balance of class power as the determinants of distributional outcomes. One of the first and path breaking studies within this approach is Korpi's *The Democratic Class Struggle* (1983). Korpi analyses welfare state development in 18 OECD countries with a particular focus on Sweden. He critically assesses two earlier approaches towards welfare state expansion – the logic of industrialism (as exposed above) and the logic of neo-corporatism (i.e. the way of organizing, representing and mediating conflicting interests) – and contrasts them with the power resources approach. According to Korpi, “[p]ower resources are characteristics which provide actors – individuals or collectivities – with the ability to punish or reward other actors [...]” (ibid: 15). These power resources differ with regard to many different dimensions, such as their scope and their degree of essentiality for people's lives and generally, it is assumed that power resources do not need to be actively used to influence other actors' behavior. In this study, Korpi defines the two main power resources as capital (control over the means of production) and human capital (labor power, occupational skills and education). The latter is considered being more limited than the former and it is the possibility of collective action that can increase the effectiveness of human capital as a power resource. The union and left party movement are two central specifications of the idea of collective action and Korpi analyses the consequences of the strengths of such movements on social change. He wants to find out if “[...] the presence of reformist socialist parties in the government can bring public policies closer to wage-earner interests [...]” and he assumes that “[...] the smaller the disadvantage in power resources of the labor movement and the stronger the left party hold over the government, the more likely are state representatives to side with labor in tripartite bargaining [...]” (ibid: 25). With regard to the relationship between the distribution of power resources among the main collective actors in society and the level of welfare in a country, Korpi finds that the role of political struggle, parties and voters account for the orientation towards a rather institutional type (i.e. strongly intervening in the societal distribution of wealth) or rather marginal type (i.e. covering basic needs) of social policy.

Korpi (1985) presents a comparable definition of the two central power resources. The first power resource is the capital as a resource that is usually unequally distributed across society and market-based. The second power resource consists of the political rights to vote and to organize collective actions, a resource that is assumed to be equally distributed in democratic societies. Korpi and other researchers in favor of the power resources approach argue that the political struggle of the working class can help develop and secure social rights and that the workers have the capability to limit capitalist power (cp. Esping-Andersen 1990). However, researchers arguing in favor of this explanation of welfare state development acknowledge that the welfare state is also a power resource by itself. Members of the working class normally have to compete, their employment situation is insecure and they depend on decisions beyond their control. By providing social rights, income security and protection against poverty, the welfare state itself creates the preconditions for collective solidarity within the working class.

Even within this approach, the role and importance of two of the main potential advocates of welfare state expansion, the organized working class and left parties, are not always assessed in a similar way. In his work *Transition from Capitalism to Socialism*, Stephens (1979) argues that left party strength in governments and the extent of working-class organization both influence the extension of the state's role with regard to welfare and the chances of welfare reform. Stephens assumes that both mass labor movements and parliamentary presentation are important and he provides an empirical analysis that shows high correlations between both left party government and welfare expenditure and left party votes and union membership. In turn, Ian Gough argues that it is especially “[...] the degree of class conflict and [...] the strength and form of the working class struggle [...]” that shape public policy (Gough 1979: 64).

Achievements and Limitations of Theories of Welfare State Development

The characteristic that all these approaches have in common is not only that they try to explain welfare state development, i.e. that they consider the welfare state to be the dependent variable, but that in the majority of the cases, they operationalize welfare state policy by using crude social expenditure levels. This approach has been widely criticized (Mitchell 1991; Korpi 1980; Shalev 1983; cp. Johnson 2003).

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Gilbert and Moon (1988) argue that studies which use social expenditure levels to operationalize welfare state policy make three assumptions that do not necessarily hold. The first two assumptions are normative, suggesting that higher levels of social expenditure mean that the level of social protection in a country is higher as well and that taxes do only play a minor role in assessing welfare state policy. Gilbert and Moon argue that mere expenditure data do not take actual need into account – high levels of expenditure for pensions or unemployment benefits do not necessarily stand for extraordinary welfare state generosity, but can simply reflect high shares of retirees or high shares of unemployed persons. Furthermore, they state that there is a risk of obtaining only an incomplete picture of the welfare state, because the share of the GDP that is spent on social programs has to be related to the taxes a country collects because it is the relation between tax revenues and social spending that reveals a state's real commitment to welfare. When two states spend the same share of their GDP on social programs, but one of the countries has considerably smaller tax revenues, we can assume that this country is comparably more committed to welfare than the country that spends the same amount, but has higher tax revenues at its disposal. The third assumption of social expenditure approaches to the assessment of welfare state policy that is criticized by Gilbert and Moon is of a rather technical nature. They argue that by taking only public expenditures into account, research ignores the fact that a share of welfare also comes from voluntary and private sources which supplement the overall level of social protection.

Further criticism has been formulated by Therborn (1987). He argues that a major part of the existing welfare state research shows significant weaknesses like, for instance, the assumption of linear growth, the ignorance of the actual efficiency of the welfare state and the social democratic welfare regime as the dominant ideal type. Furthermore, he goes into the problem of over-quantification of the welfare state, referring to the sizable amount of studies that use social expenditure and quantitative dimensions of social protection such as the proportion of the population which is covered by income replacement eligibility to capture welfare state policy. He advises to include qualitative dimensions of welfare provision like, for instance, information about social services, in future welfare state research.

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Even though the use of social expenditure data has been widely criticized, it has also led to the emergence of some further path breaking studies. Here, the studies of Castles (1982) and Hicks and Swank (1984) are worth mentioning. Castles (1982) presents a comprehensive analysis of the determinants of the main components of public welfare expenditure. He wants to find out whether patterns of public expenditure among capitalist democracies converged or diverged, which role party politics played in the process leading to potentially lesser or greater expenditure and if specific features of the party system mediated the possible relationship between politics and public welfare expenditure. He pursues a cross-national analysis over eighteen developed capitalist democracies and includes the period between the early 1960s and the mid-1970s. The aspects that distinguish his study from other studies using welfare expenditure as a dependent variable are not only the fact that he tries to establish stronger reasons to make causal inferences, but also that he uses a country sample whose units are far more comparable than the country samples that have been used in previous studies. Castles argues that “[...] it is inappropriate to draw conclusions based on the experience of those nations that have not yet achieved even minimal levels of educational, health and public income maintenance provision [...]” and that the countries included should also show some basic political similarities, although he acknowledges that this precondition restricts his analysis to a sample of less than twenty countries (Castles 1992: 35). Furthermore, Castles focuses on a number of diverse categories of public welfare expenditures, such as total public expenditure, transfers and subsidies, education expenditure, public income maintenance expenditure and health expenditure. This allows for a more specific picture of the development of public welfare expenditures than previous studies have provided.

Hicks and Swank (1984) analyze the influence of economic growth rates, party composition of governments and the political influence of civil society and corporations on the development of welfare state spending across eighteen capitalist democracies between 1960 and 1971. They concentrate on the determinants of direct cash transfer payments and like many other studies in this line of welfare state research, they measure the direct cash transfer payments as a share of the gross domestic product. By combining two sets of factors, types of collective action (such as right or left party government control, union and business lobbying and working

class protest) and economic growth, they analyze two competing explanations for welfare state development. Hicks and Swank find that right party government participation has a negative effect on welfare state transfers while government control by non-rightist parties does not have a similar effect. This finding is interesting because they cannot confirm that social democratic or other leftist parties drive welfare state expansion more effectively than other non-rightist parties and furthermore, the middle class seems to be as important for welfare state expansion as the working class. Finally, economic growth seems to be a relevant determinant of cash transfer payments as well (ibid: 105 et seqq.).

2.1.2. Welfare State Regimes

Just as the initial theories of welfare state development, welfare state regime theory continued to focus on the welfare state as a dependent variable. However, this line of research moved beyond using crude social expenditure data to a more comprehensive evaluation of social policies and the specific benefit design of welfare states. We can observe a shift of focus “[...] away from the black box of expenditures towards the contents of the welfare state and the instruments and means that produce welfare [...]” (Johnson 2003: 9). Many welfare state typologies have been developed in the last decade of the 20th century (cp. Arts and Gelissen 2002 for an overview). Those typologies not only take expenditure data into account, but consider specific welfare policy features like the quality and level of benefits and services, eligibility rules, the differentiation between a rather universal or a rather targeted character of the entire welfare system and the orientation towards the achievement of full employment.

Esping-Andersen’s *Three Worlds of Welfare Capitalism* (1990) is one of the earliest and most prominent examples of welfare state typologies. He uses the concept of de-commodification, i.e. “[...] the degree to which individuals, or families, can uphold a socially acceptable standard of living independently of market participation [...]” (ibid: 37), the concept of stratification, i.e. the degree to which the social relations and structures are reproduced by the welfare state, and the role of state and market in the provision of welfare (ibid.: 23) to subdivide eighteen OECD countries into liberal, conservative and social democratic welfare regimes. Esping-Andersen’s

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typology has been followed by many other attempts to classify welfare states into regimes. Leibfried (1992) adds a fourth category of welfare regimes to the model and focuses on poverty, poverty policies and social insurance. Castles and Mitchell (1993) use not only welfare state expenditure, but also benefit quality and the system of taxation to establish a fourfold welfare regime typology. Ferrera (1996) analyses eligibility rules, benefit schemes, welfare state financing and organization across seventeen European countries, and Ferrera (1998) continues in applying these dimensions of the welfare state to examine whether welfare reform in Europe is characterized by developments of divergence or convergence. Bonoli's welfare state typology (1997) is certainly the one that is very close to the initial theories of welfare state development in terms of the operationalization of welfare state policy since he mainly uses social expenditure as a percentage of the GDP. However, he also classifies welfare states according to their orientation towards the Bismarck or the Beveridge model of welfare, i.e. the orientation towards social insurance based welfare state policies or the orientation towards universal provision (ibid: 357).

Johnson (2003) considers the work of Huber and Stephens (2001) to be part of this line of welfare state research as well. They analyze welfare state development during the so-called Golden Age and welfare state crisis during the potential era of retrenchment since the beginning of the 1980s. Huber and Stephens combine different approaches of the power resources theory – the classical theory of class power balance which was central to the power resources approach and often measured by votes for left parties, left party government participation and union membership, theories of state structures and state-society relations and theories of international economic and political relations. Huber and Stephens add Christian democratic government participation as another factor that is supposed to matter for welfare state development, institutional factors like the number of veto players within the political system and the mobilization of women to their model. Their goal is to explain long-term patterns of welfare state expansion and retrenchment and they assume that there are four different mechanisms which link partisan government to welfare state changes: structural limitations (i.e. the limitation of policy options by national power constellations at a given point in time), ideological hegemony (i.e. intentions and desires created by social and political struggles), regime legacies (i.e. influence of the distribution of actor preferences and opportunities by the existing

regime) and the policy ratchet effect (i.e. the abandonment of welfare cutbacks due to the massive popularity of welfare programs) (ibid: 29 et seqq.). One of their main findings is that even though differences between welfare state regimes remain, partisan effects on welfare state policy decreased because all political actors were confronted with severe financial constraints. On the one hand, rightist parties were not able to implement radical cuts and on the other hand, leftist parties were not able to avoid at least some cuts in welfare programs (ibid: 321). Furthermore, they find evidence for moderate path dependency in welfare state development and for a distribution of preferences which is “[...] caused by historical processes of organization and struggle that created different power distributions [...]” instead of by cultural traditions (ibid: 345).

2.1.3. Feminist Critique

The Ignorance of the Gender Dimension

Studies about the causes and consequences of welfare state development and welfare state variation have often been criticized for their ignorance of the gender dimension (cp. Korpi 2000). At the early stages of this critique stand a range of studies which illustrate why the inclusion of a gendered perspective on the welfare state is important and offer an enhancement of the traditional theoretical framework, mostly by means of single country studies. Peattie and Rein (1983) use the example of the United States and the historical perspective to point out that the situation of US-American women has undergone considerable changes. According to their study, the relationship between state and women has changed in two different ways. On the one hand, the expansion of women’s rights has prevented from keeping women outside the state. On the other hand, the state has entered the private sphere as well. Peattie and Rein consider the relationship between women and the state to be very complex. The state acts as provider, as regulator and also as employer. The state provides by setting the rules for social programs organized according to the contribution principle or according to the concept of collective solidarity. Due to women’s disadvantaged position or their non-participation in the labor market, the contribution principle (which is often based on employment) can pose problems for women while welfare based on the concept of collective solidarity is often related to stigmatization (ibid:

82 et seqq.). Furthermore, the state is regulating by passing and implementing laws, by performing administrative tasks and by the field of jurisdiction. All three areas of regulation can, depending on the issue, determine the welfare of women. Finally, the state also acts as an employer which is, according to Peattie and Rein, strongly connected to the role of the state as provider and regulator. Direct public employment as well as indirect public employment through, for instance, publicly funded social services, were responsible for a considerable part of the increase in female labor market participation. Sapiro (1986) examines the relationship between women's welfare and general welfare by means of the example of the United States as well and she argues that the “[a]nalysis of the theory and practice of social policy has rarely taken full account of the relevance of gender, and often implicitly accepts without examination certain paternalistic and patriarchal assumptions about the nature of gender that are also embedded in the policies themselves [...]” and that “[...] there is little understanding of how social policy affects women in particular [...]” (ibid: 224).

Shaver (1983) takes a closer look at the situation in Australia and finds that although many benefits are theoretically designed in a gender-neutral way (or even in a way that favors women, for instance in the case of the family allowance), the Australian system of social security and taxation supports the consolidation of women's subordination. From the family wage that intervened in the domestic sphere and in the division of paid and unpaid work within couples to the forms of redistribution that characterizes Australia's social security system today (from persons in work to persons without, across generations or directed at individuals who are full-time engaged in housework and childcare), “[w]elfare and taxation come together in a circuit of oppression in which the state collects revenues from its taxpayers as individual citizens and returns it to them as bearers of patriarchal relations [...]” (ibid: 161). Even though policy instruments like the family wage or the joint tax assessment of families might have improved the financial situation of families as a whole, these policies often lead to very low maternal labor supply or complete withdrawal from the labor market which, in turn, increase the financial dependence from the husband.

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Ruggie (1984) analyses the situation of women workers by means of the Swedish and the British welfare state regime. She argues that the dramatic increase of female employment has changed the character of the work force and of family life and it is the responsibility of the state to facilitate female employment. Ruggie considers labor market policies, such as training and job placement and anti-discrimination enforcement with regard to placement, promotion and pay, and childcare policies, such as facilities for preschool children, to be particularly important. Sweden and Great Britain show much variation in the policy responses in those fields and Ruggie studies three potential explanations for the existing differences: economic determinants and constraints, women specific factors like the prevailing conceptions of women's roles and the role of the state (weak vs. strong intervention in market forces and attitudes towards women). Ruggie concludes that an evaluation of these two countries can only lead to the assessment that Britain has rather focused on very selective measures which support women in particular while Sweden has chosen to implement a universal framework that not only takes special treatment of women, but also broader social and economic considerations into account (ibid: 17).

Piven (1985) reviews the intellectual evaluation of the relationship between women and the welfare state. While, for instance, socialist feminists focus on the element of dependence executed by the state, she finds that women activists begin to recognize the state as an opportunity for political influence. However, Piven comes to the conclusion that there is no gender-neutral dependence on the welfare state and that the situation is in fact different for men and for women. Women depend on the welfare state as employer and as provider due to the erosion of familial structures and due to their disadvantaged labor market position. Therefore, they have a stronger need to exert political power to assure the future of the welfare state (ibid: 284).

The study by Hernes (1987) focuses on the Nordic welfare states and on how the increase in women's political power has influenced the development of Scandinavian welfare policy, showing that welfare state development and variation can hardly be explained without having a closer look on the role of women. Hernes traces the entry of women into the public sphere which, after decades and centuries of exclusion from social and political institutions, had been more explicit in Northern Europe than in other European countries. Her study is an analysis of the reasons for the gradual

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political inclusion of women and the gradual consideration of their issues with the political agenda, such as structural changes of the economy and the feminist movement in combination with the so-called state feminism or women-friendliness of the Scandinavian welfare states.

Gordon (1988) raises a comparable critique to Piven. She states that even the most radical analyses of the welfare state (which consider social policies as means to maintain social order and to support the accumulative and exploitative economic system) do not consider the gender dimension of welfare state programs, even if the analyses deal with programs that are mainly directed at women, and the gender dimension of determinants of welfare expansion, such as the women's movement. She argues that "[...] the nature and functions of the welfare state cannot be adequately explained without an analysis of the sexual division of labor, the gendered system of domestic labor, and the dynamics of relations between the sexes [...]" (ibid: 628).

The study by Hobson (1990) is in line with the research of Gordon. She argues in favor of the inclusion of economic dependency within families in welfare states comparisons because traditional comparisons of inequality between societies do not consider that families are not necessarily units with shared interests about the distribution of income among their members, but bargaining units "[...] where negotiations can cover a wide range of decisions involving the allocation of money, time and the division of market and domestic work [...]" (ibid: 237). This can lead to wrong conclusions about the effects of redistributive policies. If these policies are based on or directed at family income, they might not necessarily improve the situation of women in the family and society, but could even decrease the bargaining power of women. Hence, policies which are supposed to successfully manage the redistribution of resources within the society might have a detrimental effect on the redistribution of resources within families. Therefore, welfare state research has to take the direct and indirect consequences of social policies for the economic dependency of women within the family into account.

Ann Orloff (1993) also engages in a more gender-specific view of the welfare state. She particularly criticizes Esping-Andersen's regime typology (1990) and his

gender-neutral power resources approach. As indicated in the foregoing section, Esping-Andersen uses three dimensions to evaluate welfare states: stratification, decommodification / social citizenship rights and the role of the state and the market in the provision of welfare. Orloff argues that while the stratification dimension is able to cover gender questions, the dimension of state-market relations needs to be extended by the family as another sphere that contributes to welfare. Finally, Esping-Andersen's decommodification dimension does not consider that political rights might not be as available to women as they are to men and it does not take into account the division of paid and unpaid labor. Therefore, Orloff suggests adding two further dimensions: the access to paid work and women's capacity to form and maintain autonomous households (ibid: 322 et seqq.). She assumes that a more comprehensive and gender-aware understanding of welfare states will lead to a more systematic assessment of the actual effects of welfare state provision.

O'Connor (1993) shares the view of her colleagues that traditional welfare state research lacks the gender perspective and that, in turn, gender-oriented welfare state research has hardly ever been comparative. Furthermore, she criticizes the gender-neutral view of the concept of citizenship which usually focuses on class or race. Even though this concept has often served as the basis of traditional welfare state research, welfare state research did not acknowledge that the relationship between citizenship status and citizenship rights might not be the same for both men and women, meaning that "[...] formal citizenship does not always imply full social membership [...]" (ibid: 504). By means of the example of the social democratic welfare regime, O'Connor shows that even in countries in which class differences have been more dispelled than in others, gender inequalities are still pervasive and worth investigating.

Gender-Sensitive Welfare State Comparisons

The foregoing section has presented a range of studies which provide reasonable arguments in favor of a consideration of the gender dimension in welfare state research. This early feminist work has often been criticized for being little comparative and the aforementioned studies are indeed characterized by a focus on single countries or single welfare state types. However, the feminist critique of traditional welfare state research has not only been directed at bringing forward proof

that welfare state research is incomplete without a look at the specific situation of women and at building theoretical frameworks for evaluating welfare states from a gendered perspective, but also at the reassessment of gender-insensitive typologies and the establishment of gender-sensitive welfare state comparisons.

One of the earliest works in this line of research is the welfare state typology by Siaroff (1994). In contrast to traditional welfare state typologies, his welfare state classification specifically focuses on the gender dimension. Siaroff includes three different dimensions of gender equality - the female work desirability, the welfare orientation towards families and the payment of family benefits, to evaluate welfare state policy across 22 OECD countries. The dimension of female work desirability is constructed by combining information on female to male wage ratios and on the ratio of female to male employment-population ratios and male to female unemployment rates. The dimension of family welfare orientation includes information on the comparative extent of general social expenditures, family policy spending, maternity benefits and public childcare support. However, Siaroff acknowledges that information on family welfare is not necessarily an adequate indicator for female or maternal welfare. Therefore, it has to be considered to whom benefits are paid because "[...] only where the benefits are paid to the mother can high *family* welfare be said to translate in high *female* welfare [...]" (ibid: 93, emphasis in original). The analysis leads Siaroff to a subdivision of the country sample into four different types of countries - protestant liberal, advanced Christian democratic, protestant social democratic and late female mobilization welfare states. While the protestant liberal countries (Australia, Canada, New Zealand, UK and USA) are indeed characterized by rather distinct gender equality with regard to labor force participation, the provided family welfare is minimal. In turn, the protestant social democratic countries (Denmark, Finland, Norway, Sweden) explicitly support female employment whereas in advanced Christian democratic states (Austria, Belgium, France, Germany, Luxembourg, Netherlands), there are no strong incentives for women to participate in the labor market. In the welfare states that belong to the late female mobilization type (Greece, Ireland, Italy, Japan, Portugal, Spain, Switzerland), women's rights are generally low and the incentives for women to allocate some time to the labor market are low as well.

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This brief summary of Siaroffs work shows that the countries mainly seem to cluster along traditional welfare state regime lines, even though he applies a gender-sensitive concept of the welfare state. However, subsequent research raises reasonable doubts that the traditional welfare state regimes can be maintained when the welfare state is evaluated from a gender perspective. Even before the publication of Siaroffs new typology, Lewis (1992) had formulated one of the most fundamental criticisms of previous welfare state research and argues for the indispensable consideration of the private or domestic sphere and the share of unpaid work that is done in this sphere. She asserts that recent welfare state studies analyze the relationship between state and economy or between work and welfare. However, those studies focus on paid work and thereby miss "[...] the problem of valuing the unpaid work that is done primarily by women in providing welfare, mainly within the family, and in securing those providers' social entitlements [...]" (ibid: 160). Hence, the worker that Esping-Andersen (1990) and others have in mind is male and his ability to mobilize for his rights does not only depend on decommodification provided by the welfare state, but also on the unpaid female household labor. She comes to the conclusion that from a gendered perspective on welfare states, countries have to be distinguished according to the strength of the male breadwinner model within the country in which married women are excluded from the labor market, "[...] subordinated to their husbands for the purposes of social security entitlements and tax, and expected to undertake the work of caring (for children and other dependents) at home without public support [...]"(ibid: 162). In her reassessment of traditional typologies, Lewis evaluates Great Britain and Ireland as countries that are characterized by a strong male breadwinner model. In turn, she considers France as a case of a modified male breadwinner country that provides some support for working mothers while Sweden is the ideal-typical case of support for dual-earner households. In further analyses, Ostner and Lewis examine the case of Germany which they also assign a strong male breadwinner orientation (Ostner and Lewis 1995).

The study by Gornick, Meyers and Ross also investigates if there is evidence for country clusters that are somewhat different from the three traditional welfare state regimes defined by Esping-Andersen (1990). They illustrate which family policies are considered to facilitate maternal employment and develop a cross-national

measurement of those policies. According to the assumption that "[...] the *presence of children* in the home will have an impact on a woman's decision to work for pay and on her hours worked [...]", the authors decide to include eighteen indicators covering policy features from the fields of childcare, parental leave and public school schedules into their analysis (Gornick et al. 1996a: 3 et seqq., emphasis in original). The authors construct two indices from those indicators, one for policies that support the employment of mothers with children below school age and one for policies that support the employment of mothers with school-aged children. The index construction and analysis leads the authors to determine several clusters of countries, depending on which index is applied. The country clusters for the public support for mothers with children below the age of six are relatively consistent with the country clusters that result when this index is fragmented into two separate indices - one index that measures public support for mothers of infants and another index that measures public support for mothers of preschoolers (ibid.: 20 et seqq.). Nevertheless, they observe some "[...] subtle differences in national policy emphases [...]" and a number of particular changes in national performances. They find Canada to be more supportive for female employment than other liberal welfare states and while Norway is situated in the medium country cluster of public support of infants' mothers, it is situated in the lowest cluster of public support for mothers of preschoolers, thus providing less support than other social-democratic countries. In turn, Italy performs better than other traditional conservative welfare states when it comes to policies that support preschoolers' mothers (ibid.: 21 et seqq.). The third index measuring public support for mothers with school-aged children only contains six countries and surprisingly shows a relatively high performance of the United States and the United Kingdom, two countries that were situated in the lower clusters on the other indices (ibid.: 22). These results lead the authors to conclude that the observed country clusters only partly correspond to the welfare state typology developed by Esping-Andersen.

Gornick et al.'s (1996a) categorization of countries according to the level of their employment-supportive policies by has been picked up by Stier et al. (2001) who analyze the relationship between welfare regimes, family supporting policies and female employment along the life-course, especially with regard to changes in relation to the presence of children (such as complete exit from the labor market after

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childbirth, part-time employment or a more or less direct return into full employment). Stier et al. argue that policies aimed at supporting mothers' employment are positively associated with their labor market attachment and with their possibility to pursue continuous full-time employment. They find that within all welfare regimes, employment continuity is highest among countries that provide the most support for working mothers, i.e. among countries from both the social-democratic (Sweden) and the conservative regime (Italy). However, in countries in which policies aimed at supporting mothers' employment are less developed, employment interruptions are more prevalent and so are reduced earnings in the long run which result from part-time and discontinuous employment. Just as the countries with the highest support for working mothers belong to both the social-democratic and the conservative regime, countries with less support for working mothers also belong to the social-democratic (Norway) and the conservative welfare regime (Germany). According to Stier et al., the only group of countries which corresponds to traditional regime typologies is the one of the liberal welfare states which provides the least support of maternal employment. This finding is, however, not consistent with the findings of Siaroff and of Gornick et al. which attributed a comparably high performance with regard to employment support to the liberal welfare states.

Gauthier (1999) analyses trends in family cash benefits (allowances and tax reliefs), maternity and parental leave and provision of and subsidies for public childcare in Western and Eastern European countries after World War II. Her main interest is the development of state support for families over time and she finds that family policy has been characterized by trends which are different from other social policies. On the one hand, family cash benefits have not grown as fast as other social expenditures. On the other hand, they have also been characterized by fewer cutbacks than other welfare state benefits. The duration of maternity leave and the wage replacement rate are characterized by overall growth. This indicator for family policy is especially significant because the labor market participation of women increased dramatically over the last decades which, in turn, made a larger number of women eligible for this benefit. Concerning the public support of childcare, Gauthier finds the most extensive cross-national differences. While the Nordic and Eastern European countries have always been characterized by a gradual expansion of these services, other Western European countries have been much more reluctant, with the

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exception of France, Belgium and Italy. With regard to cross-national variation in state support of families, she points out that the average European trends hide major differences between countries and, more importantly, that "[...] no clear clusters of countries emerge from the analysis [...]", implying that conventional welfare state and family policy typologies need to be reassessed. (ibid: 960).

A study by O'Connor et al. (1999) focuses on the United States, Australia, Canada and Great Britain. They show that although these countries are usually characterized as liberal welfare states with a strong primacy of the market and the family over public intervention, significant differences can be observed when questions of gender equality take center stage. Their comparison of labor market and social policies, body and reproductive rights and women's movements shows that for these countries, "[...] dimensions of variability based on gender relations do not correlate neatly with class-related dimensions [...]" (ibid: 26). Despite considerable similarities, the four countries show noteworthy differences with regard to childcare responsibilities and parental leave arrangements, public strategies against labor market inequalities and the degree of gender differentiation in income maintenance provision.

The review of these gender-sensitive welfare state comparisons and classifications shows that research has remained inconclusive on how and why countries can be assumed to cluster. Findings range from welfare state typologies with clusters that are very comparable to traditional regimes to the reassessment of the position of countries to each other. Before turning to the conceptualization of welfare state incentives for maternal labor supply that is used for the present study, the second line of welfare state research which focuses on the effects of welfare state policy rather than on explaining welfare state variation will be reviewed.

2.2. The Welfare State as Explanans

More recent welfare state research has moved beyond the mere treatment of the welfare state as a dependent variable. Researchers started to be interested in how the welfare state affects societies and the life of individuals instead of focusing on the factors that influenced welfare state development in the first place. A “[...] shift towards the results which the different regimes have produced in terms of poverty rates, social rights and income equality [...]” can be observed, both within general welfare state research and in works that deal with the specific effect of welfare state policies on the living conditions of women (Johnson 2003: 10).

2.2.1. Welfare State Effects

Early studies dealing with the effect of welfare state policy mostly focused on aggregate economic well-being like GDP per capita, but this line of research also started to apply more disaggregate measurements of well-being on the household level and on the individual level. Absolute and relative measures of poverty as well as measures of subjective poverty perception have been very prominent conceptualizations of the effect of welfare state policy. Furthermore, studies also started to concentrate on more specific social indicators, such as human capital, life quality, level of living and social exclusion (ibid:27). But even though those studies started to take the outcomes of welfare state policies into account instead of conceiving the welfare state itself as the core of the idea of social policy, they have also been criticized for one short-coming: their predominant focus on poverty rates and income inequality as welfare state outcomes and the prevailing analysis of cash income instead of benefits in kind which are considered being just as important as cash benefits (Townsend and Gordon 2000).

An example of a study that also takes the effects of the welfare state into account has been published by Korpi and Palme (1998). It is evident that this study might remind of the large amount of welfare state typologies. However, Korpi and Palme do not only take welfare state policies into account to classify welfare states. On the one hand, they examine the factors which potentially influence institutional welfare state

configurations, such as bases of entitlement, benefit schemes and organizational aspects of social insurance programs (here: old age pensions and sickness cash benefits) across eighteen OECD countries. On the other hand, they are also interested in the effect of those institutional aspects on interests, preferences and identities. Korpi and Palme argue that, by influencing the role of conflicts among interest groups and the formation of coalitions, institutions affect the degree of inequality and poverty in societies. Like many of their colleagues dealing with the welfare state regime approach, they conclude their analysis with a welfare state typology that distinguishes five different types of welfare regimes: the targeted, the voluntary state subsidized, the corporatist, the basic security and the encompassing model. However, they do not only evaluate and classify welfare states according to their social policies and institutional settings, but also find what they call the paradox of redistribution: “[...] The more we target benefits at the poor only and the more concerned we are with creating equality via equal public transfers to all, the less likely we are to reduce poverty and inequality. [...]” (ibid: 681 et seqq.). From this finding, Korpi and Palme conclude that welfare state regimes can not only have unintended, but even perverted effects.

Kangas and Palme (1998) state that poverty has preoccupied welfare state researchers since Rowntree’s study on the link between poverty, age and family formation over the life-cycle (Rowntree 1922). Although many modern welfare states have developed since the beginning of the 20th century, there is still considerable cross-national variation of social policies and Kangas and Palme intend to analyze whether the institutional variation might be the cause for variation in poverty rates across countries and time. They find that compared to the time of Rowntree’s study, improved social policies have certainly supported the decrease of poverty rates across nations and life cycle stages. However, they attribute the remaining differences in poverty rates to the cross-national policy variation in general and in specific policy fields in particular, such as pension policy and childcare (Kangas and Palme 1998: 16 et seqq.). The studies by Palme, Kangas and Korpi respectively are adequate examples of how welfare state research started to focus not only on conceptualization of the welfare state, but also on measuring the actual effects of different levels of welfare state policy. The following section shows

how the gender dimension and questions of female and maternal employment have been incorporated in the measurement of the welfare state and its effect.

2.2.2. Welfare State Effects on the Living Conditions of Women

Just as the gender-neutral lines of welfare state research, studies which take the gender dimension into account underwent a shift towards the consideration of not only the evaluation and comparison of welfare state policies, but also of welfare state effects, especially when it comes to female labor market participation. The aforementioned study by Gornick et al. (1996a) not only compares welfare states with regard to their support of female employment, but also provides the basis for further studies by these authors. Gornick and her colleagues use the policy indices developed in their earlier work for the subsequent analysis of the relationship between those policies and actual maternal employment rates (Gornick et al. 1996b) and in a somewhat expanded analysis of several different policy indices and outcomes like child mortality, the prevalence of television watching among children and family poverty rates (Gornick / Meyers 2003: 236 et seqq.).

Comparable analyses are carried out by Plantenga and Hansen (1999) who evaluate the welfare state performance of 15 EU member states in terms of female employment and gender equality (leading to four different country clusters with low, medium, medium/high and high performance). Since the implementation of equal opportunities for men and women is one central nominal goal of the European Union, they consider it to be important to effectively monitor national policy measures, to find valuable benchmarks for an assessment of national performances and to compare what they assume to be central determinants of variation in equal opportunity performance. They present a set of possible determinants that includes factors like economic growth and employment rates and attitudes towards female labor market participation, but also indicators from the fields of fiscal, working time, childcare and leave policy. They conclude that policies can affect equal opportunities in an either implicit or explicit way and that it is especially care policies that would help close gender gaps. Without childcare policies, it seems highly likely that “[...]”

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the unequal division of unpaid work will [continue to] translate into an unequal position of women on the labor market [...]” (ibid: 378).

Pettit and Hook (2005) analyze the influence of economic, demographic and institutional characteristics on female employment across nineteen countries. They argue that by all means, variation in social and family policy institutions can account for remaining variation in female labor force attachment and that female labor force attachment should be higher when welfare states provide support for working women and working mothers. They intend to improve existing research by examining the effect of institutional and demographic characteristics and by using specific policy conditions instead of general policy indices because those combined indices make it difficult to disentangle for whom and how certain policy conditions matter. Specifically, they want to find out if demographic and economic reasons for women’s employment differ with the national institutional context and if particular subgroups of women are affected by welfare state arrangements in different ways. Their independent variables are service sector growth and overall unemployment rates as economic determinants and length of maternity and parental leave and public childcare provision as policy determinants and they find that specific policy configurations do actually influence employment patterns of different groups of women. They generally confirm that female employment must be considered in relation to the high variation in institutional conditions and that, although evidence is limited for the length of maternity leave, parental leave has a positive effect on maternal employment as long as the length of the parental leave is taken into account. They find that parental leave seems to keep “[...] women with young children attached to the paid labor force, but [that] extended leave provisions are negatively associated with the effects of having young children on the probability of employment [...]” (ibid: 796). Furthermore, publicly funded childcare fosters the employment of women. Public childcare provision is positively related to the effects of having young children and of being married on women’s employment. Pettit and Hook assume childcare for younger children to enable women to maintain attachment to the labor market which has, in turn, implications for their later labor market experience.

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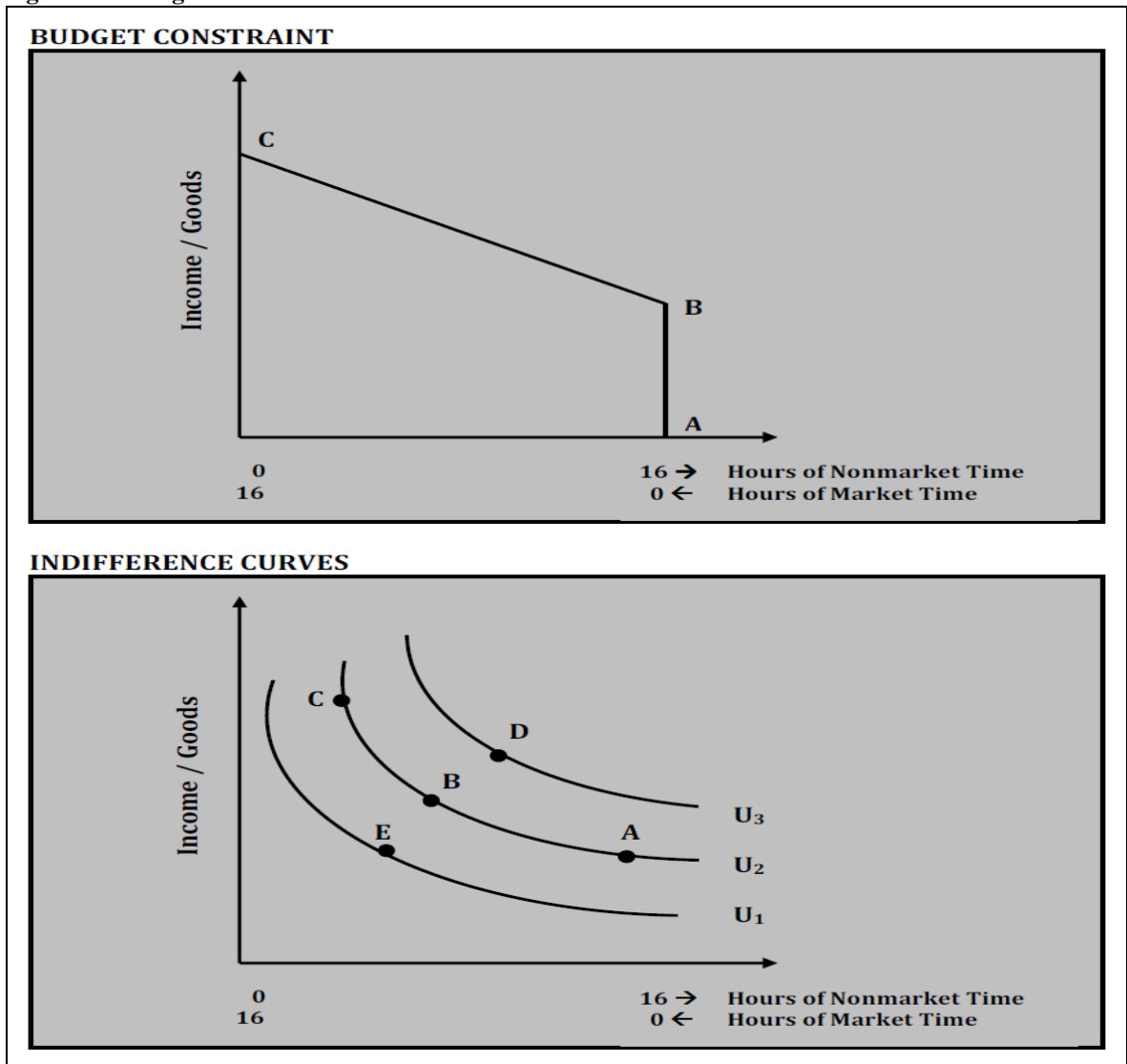
Pettit and Hook (2009) go into further detail with regard to female employment and gender equality in the labor market. They analyze gender inequality in the labor market across 21 OECD countries and they argue that the degree of this gender inequality depends on the way the inequality is measured. Even though the share of female labor market participation might be an appropriate single indicator, they include further information on working hours, occupational segregation and wage structure. They examine the relationship between those labor market outcomes on the aggregate level and specific policies and employment conditions, such as the length of parental leave, public childcare, the degree of unionization and the share of the part-time workforce and they assume that those national policies and conditions generate and reinforce gender inequalities in the workplace by relieving or concentrating the demands of unpaid work and care within households and, therefore, usually in the female sphere of responsibility (ibid: 19). Pettit and Hook conclude that gender inequality cannot only be measured by labor market inclusion, but by the specific conditions according to which women are included. Their very recent publication points to a very important development within research on female and maternal labor supply: the consideration of different types of inclusion and exclusion. However, all the studies presented in this subsection provide useful starting points for the development of a valid selection of political determinants of maternal labor supply and an appropriate basis for the conceptualization of welfare state incentives for maternal labor supply for the present study.

2.3. Welfare State Incentives for Maternal Labor Supply

2.3.1. Labor Supply Theory

Generally, labor supply theory focuses on the individual as object of study. Individuals try to maximize their utility and this utility is derived from the consumption of commodities produced by a combination of time and market goods (whose purchase requires a certain amount of monetary income on hand). According to Blau et al. (2006), individuals have to decide how much time they want to allocate to market and non-market activities in order to maximize utility. Individuals are subject to a budget constraint that indicates the combinations of market goods and non-market time the individuals can choose from, given a certain amount of non-labor income (the part of the income that is on hand without allocating any time to the labor market, such as the income of a spouse or interest) and labor market earnings (a given wage rate). Furthermore, individuals have indifference curves indicating the combinations of market goods and non-market time which provide them with the same amount of satisfaction. This is reasonable to assume because commodities differ according to their time and goods intensity in consumption and production. In this way, individuals who decide to decrease their non-market time will most likely opt for less time-intensive commodities in consumption and production, but choose goods-intensive ones instead and will still be able to reach the same amount of satisfaction. In turn, individual who decide to increase the time not spent in the labor market will most likely opt for more time-intensive and less goods-intensive commodities in consumption and production and will also be able to reach the same amount of satisfaction. Figure 2.1. showing the budget constraint and the indifference curves illustrates the underlying principle in simplified terms. Segment AB in the budget constraint graph represents the non-labor income at zero hours of market work. On the horizontal axis, daily hours of market work are measured from the right to the left and daily hours of non-market time are measured from the left to the right (assuming that eight hours per day are spent on recovery). Each additional hour that is supplied to market work implies a waiver of an hour of non-market time, but, simultaneously, an increase in the total income available.

Figure 2.1. Budget Constraint and Indifference Curves



Source: Blau et al. (2006: 97 et seqq.)

A closer look on curve U_2 on the indifference curves graph reveals all combinations of the ratio of market time and non-market time (point A, B and C) that lead to the same amount of utility. However, there might be combinations on other indifference curves that are less preferable (point E on curve U_1) or more preferable (point D on curve U_3) than the combinations on curve U_2 .

Applying labor supply theory to questions of maternal employment means that this theoretical approach needs to combine labor supply assumptions about individual

behavior with assumptions about families as economic unit¹. Starting with the path breaking works of Mincer (1962) and Becker (1965), labor supply theory began to acknowledge that labor supply decisions are not only made by individuals, but also in the context of families and that the decision on time allocation between the adult members of a household influences the maximization of utility or satisfaction of the whole family (cp. Blau et al. 2006; Bryant and Zick 2006). These adult members are assumed to be able to choose forms of specialization and exchange to maximize this utility. This means that one individual is likely to specialize in non-market work and the other individual is likely to specialize in market work if “[...] the ratio of the value of time spent at home to the value of time spent in the market is higher for one individual than for the other [...]” (Blau et al. 2006: 38). It can nevertheless be the case that, “[...] as long as an extra hour of market work by both partners creates the ability to buy more goods and services than are required to compensate for their lost hour of household time [...]” (Ehrenberg and Smith 2009: 217), both partners will opt for allocating some time to paid work to enhance their resources. But since the traditional understanding of gender roles and remaining gender differences in earnings still play a role in today’s societies, this possibility of specialization and exchange has to be considered when it comes to the influence of specific policy instruments on maternal labor supply and will therefore be explained in further detail with regard to the respective policies. Furthermore, it has to be taken into account that although the specialization within one field of production and the subsequent exchange of goods can seem useful for the maximization of utility in the short-run, this choice can have negative consequences and disadvantages in the long-run. A complete specialization on non-market work always implies that an individual foregoes labor market experience and continuous labor market attachment which can have negative effects on future earnings.

The basic theoretical assumptions show that the labor supply decision affects the maximization of utility. The value of non-market time, also referred to as the reservation wage, as the non-labor income or as the slope of the indifference curve at zero hours of market work (W^R), is compared to the value of the time in the market

¹ In the context of labor supply decisions within the household, research still focuses on heterosexual married couples. However, cohabiting heterosexual couples and cohabiting or married homosexual couples start to be taken into account as well in labor supply research (cp. Blau et al. 2006: 36).

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that is given by their wage rate (W). When the market wage is larger than the reservation wage, the individual will supply labor to the market. In turn, when the reservation wage equals or is larger than the market wage, the individual will not supply labor to the market (cp. Blau et al. 2006; Franz 2006).

$W > W^R$	\rightarrow Labor supply
$W^R \geq W$	\rightarrow No labor supply

Generally, factors that increase the market wage are assumed to increase the probability of labor supply, so that labor force participation is positively related to the market wage. In turn, factors that increase the reservation wage tend to decrease the probability of labor supply, so that labor force participation is negatively related to the reservation wage (Blau et al. 2006: 104). The following two subsections present a selection of individual and policy factors that can be assumed to influence market and reservation wage and therefore maternal labor supply.

2.3.2. Individual Determinants of Maternal Labor Supply

It can be derived from the afore-mentioned theoretical assumptions that the *individual wage* plays an important role for the labor supply decision. However, in labor supply theory, other micro-level factors influencing the individual labor market participation decision have been widely discussed as well. Besides the individual wage which is supposed to be positively associated with a person's labor supply, the *total disposable household income* or, more specifically, the income of the potential partner, has to be taken into account as well. The income of the partner and other fractions of the household income are part of the so-called non-labor income of a person and labor supply theory assumes that there can be a trade-off between non-labor income and income from employment. The one partner's income from employment can decrease when the other partner decides to supply labor to the market as well. If both partners decide to allocate some time to the labor market, there is a possibility that they each supply less labor to the market than they would,

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individually, if the respective other partner would decide to specialize in non-market work. Therefore, it can be assumed that with increasing non-labor income, the trade-off between supplying labor to the market and not supplying labor to the market increases as well and the employment probability decreases.

The educational background of a person is often assumed to be a central determinant of a person's market wage and therefore of a person's labor supply (Mincer 1985). It is assumed that the decision to allocate some time to market work requires initial investment on the part of the person who wants to supply labor because the knowledge and skills acquired by this person “[...] generate a certain stock of productive capital [...]” (Ehrenberg / Smith 2009: 279). In turn, these abilities determine the earnings of a person. If the average earnings would not rise with the level of education, investments in education would not be worthwhile and in terms of utility maximization, the incentive for these investments would vanish (ibid.: 293).

Furthermore and especially in the case of mothers, we can expect certain additional individual factors to influence the labor market participation decision. With an increasing *number of children* in the household, the potential costs of childcare purchased outside the home rise. These rising costs can be understood as an effective decrease of or tax on the market wage and do therefore influence the labor supply decision. The same logic can be applied to the *age of the children* within the household. The younger the children, the higher is the probability that childcare has to be purchased because regular school schedules are not yet applicable which in turn may be understood as an effective market wage decrease.

Additionally, the *marital status* of mother can influence the labor market participation decision as well. Here, the theoretical assumptions on household production and families as economic unit have to be taken into account. As indicated above, labor supply theory supposes that partners often decide to specialize in either market or domestic work and that they base their decision on their relative productivity at home and in the labor market. It is not impossible that both partners allocate some time to the labor market because goods produced at home can also be purchased (like food, cleaning or childcare etc.) and because it has been observed that a longer period with greater hours of household work seems to have long-term

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consequences for future earnings (Ehrenberg / Smith 2009: 217). Nevertheless, lower wage rates for women and assumptions on socialization may increase the probability that the wife allocates more time to household work because she is considered being more productive in that field and the family forgoes less market goods than if the husband opts for household work (ibid.). In the case of separated, divorced, widowed or never married mothers (assuming that they take care of their family only by themselves), the individual model of labor supply can be applied, i.e. in this case, the considerations between two adult household members about a form of specialization and exchange do not necessarily have to be taken into account. It can be assumed nevertheless that the need for household time for mothers is higher than for women without children and that unmarried mothers have to allocate more time to household and childrearing tasks than childless women. But since they are in charge of both taking care of children and household and of earning money to purchase necessary goods and services, they are less likely to specialize in either market or non-market work and therefore supply more labor than married mothers.

2.3.3. Welfare State Determinants of Maternal Labor Supply

As indicated above, previous research suggests that not only individual characteristics, but also welfare state policies can influence the maternal decision on labor supply. In terms of labor supply theory, the focus has to be on policies that change the relationship of market wage and reservation wage, i.e. that increase or decrease them. Policies that increase the market wage and decrease the reservation wage respectively are expected to increase the maternal employment probability while policies that decrease the market wage and increase the reservation wage respectively are expected to effect the opposite. The following paragraphs will present a specific labor supply application for a number of policy fields: parental leave, public support and provision of childcare, school policy, employment law and family related benefits and taxation.

Parental Leave

The long-term effect of parental leave on female employment is often inconsistently discussed in the literature because particularly the provision of long leave periods

can decrease women's labor market attachment and downgrade their career options (Gornick et al. 1996a: 5; Pettit and Hook 2005; Mandel and Semyonov 2006). Nevertheless, the provision of a relatively short, but well compensated maternity leave is generally considered having a positive effect on female employment and ensuring a fast return to paid work (cp. Meyers et al. 1999: 121 et seqq.). As Trzcinski (1991) points out, there is not only a psychological, but also an economic need for parental and especially maternal leave. The right to parental leave facilitates a temporary withdrawal from the labor market without losing the attachment to the current job and the expected wage increase related to job tenure (Trzcinski 1991: 210). It "[...] provides protection against unemployment when the caregiver is ready to return to work [...]" and it can break down the "[...] structural barrier to women's entry into the higher-paid male-dominated occupations [...]" (ibid.). In the words of labor supply theory, a relatively short and well compensated parental leave with legislated job guarantee avoids a decrease of the value of market time due to the interruption of employment, even though the possibility of parental leave implies an actual employment discontinuity.

Public provision and support of childcare

The costs of childcare can be seen as a tax on the market income of a working mother. A decrease in childcare costs in terms of a public provision of affordable childcare and / or in terms of financial reliefs for childcare costs is seen as an equivalent to an effective increase in the wage rate and would therefore lead to an increase in female labor supply (Blau et al. 2006: 116 et seqq.). Furthermore, a decrease in childcare costs is also expected to affect maternal employment in the long run because fewer and shorter employment interruptions lead to "longer and more continuous labor market experience", can have a "[...] favorable effect on types of jobs and earnings" and can "reinforce the tendency to spend more time on the labor market [...]" (ibid.). The effect of public support and provision of childcare on maternal labor supply has been tested empirically and those empirical studies seem to confirm the theoretical assumptions (cp. Michalopoulos et al. 1991; Connelly 1992). In summary, the public provision and support of childcare is considered an incentive for maternal employment. Public childcare is considered "[...] an essential form of support for parents if they want to combine earning and caring [and] the availability and cost of child care are powerful predictors of

women's labor market attachments [...]” (Gornick and Meyers 2003: 185). Previous research suggests that “[...] care responsibilities constitute a major obstacle to (full) employment [...]” (Plantenga / Hansen 1999: 370) and “[...] that having more attractive childcare options increases maternal employment [...]” (Gornick et al. 1996a: 5).

School policy

According to Gornick et al., “[...] public schools provide *de facto* childcare for mothers of school-aged children [...]” (Gornick et al. 1996a: 6; emphasis in original). Therefore, the effect of encompassing public school schedules on maternal employment is comparable to the public provision and support of childcare for children below school age. When women mainly rely on school schedules for childcare (in terms of length of school days, school years and the continuity of school days, i.e. the surveillance of children at school during lunch time), it is reasonable to assume that public school policy influences the probability of maternal employment (ibid.). It can be assumed that longer and continuous school days and longer school years increase the value of market time and the probability that mothers decide to participate in the labor market. Public school schedules that correspond to usual employment schedules reduce the need for additional care and this, in turn, increases the actual market wage. The starting age of compulsory schooling can also play an important role. When school schedules facilitate employment by corresponding to usual employment schedules, it can have a positive effect on maternal employment when compulsory schooling starts as early as possible. However, when the opposite is the case, it can also be argued that the reconciliation of work and family life can even become more difficult when children reach school age (ibid.). Hence, an early school starting age will only have a positive effect on maternal employment when school schedules comprise as many hours per day and as many weeks per year as possible and when schools offer a continuous school day without breaks during lunch hour. If public school schedules are considered as free *de facto* childcare, mothers can allocate a part of their available time to the labor market without risking an effective real wage decrease due to emerging childcare costs.

Employment Law

Working time policy involves different aspects such as standard weekly working hours, part-time regulations, non-standard hour work practices and vacation rights. The reason for including working time regulations in the evaluation of welfare states' incentives for maternal labor supply lies in the consideration that parents should "[...] have the option to reduce their hours of paid work before their children reach school age and possibly throughout their children's lives without risking great sacrifices in earnings, benefits and career opportunities [...]" (Gornick and Meyers 2003: 147). A standard workweek between 35 and 39 hours (short full-time) can help mothers to make choices about allocating time between work and family responsibilities while standard workweeks of at least 40 or even more hours can inhibit such choices. However, if it is not possible for mothers to take up full-time employment, available and high-quality part-time work should ensure that job changes are not necessary. It is also important that part-time employees are not discriminated in terms of pay or social security benefits. The term of available and high-quality part-time employment is rather broad. A closer look at the ILO Part-Time Work Convention reveals that possible discriminations of part-time employees can refer to wage, social security and maternity protection, termination of employment, paid leave, vacation and sick leave. Furthermore, the convention points out that countries should facilitate the access to part-time employment and the voluntary transfer from full-time to part-time employment (and vice versa) and that the threshold for exclusion from social security or other benefits schemes due to insufficient earnings should be as low as possible (ILO 1994). Gornick and Meyers take up those elements and argue that governments can support parents' choice to work part-time by ensuring that they do not have to change jobs and that part-time workers are not treated less favorably than comparable full-time workers in terms of pay, social security, occupational benefits and training, promotion opportunities and collective bargaining (Gornick / Meyers 2003: 163 et seq.). Favorable conditions for non-standard hour work, such as the compensation for overtime hours, as well as legally warranted minimum vacation and holiday rights are also considered to support mothers' reconciliation of work and family life (Gornick / Meyers 2003: 155 et seq.). When working time regulations facilitate the reconciliation of paid work and care responsibilities by providing for relatively flexible labor market participation, they can be expected to increase maternal labor supply. In turn, when

labor market participation requires immense costs because employment schedules do not at all correspond to childcare or public school schedules, maternal employment probability is expected to decrease.

Family-related benefits and taxation

Since it is assumed that the public provision and support of childcare increases the probability of maternal employment because it enhances the value of market time and decreases the value of non-market time, it can also be assumed that children's allowances increase the value of non-market time or, more precisely, the amount of non-labor income that refers to the money an individual has at his or her disposal without devoting time to market activities. Children's allowances are assumed to effectively increase a mother's reservation wage, the value that "[...] an individual places on his or her time at home [...]" (Blau et al. 2006: 104). A general rule of labor supply theory assumes that individuals choose to participate in the labor market when the market wage is higher than the reservation wage. By contrast, individuals choose not to participate when the market wage is lower than the reservation wage.

Although it is reasonable to assume that high children's allowances positively affect the economic situation of families and alleviate the risk of child poverty, it is only the possible effect of these cash benefits on female labor supply that is taken into account for the present purpose. However, in the case of children's allowances, the receipt of these benefits does usually not depend on the maternal labor market status. The effect of certain child-rearing benefits or similar offers can, however, be assumed to be even more detrimental to maternal employment because they encourage mothers not to participate in the labor market, but provide them with a certain amount of money from the welfare state for taking care of their children at home. Here, the tradeoff between participating and not participating in the labor market is different because the decision to participate in the labor market actually implies a (partial) renouncement of the benefits. If the reservation wage (including child-rearing benefits) is higher than the market wage, the probability of a mother deciding to participate in the labor market can be assumed to decrease.

When it is rather the couple or the family that is subject to taxation instead of the individual, "[...] married women, often regarded as secondary earners within the

family, face relatively high tax rates [...]” on their labor market earnings (Blau et al. 2006: 116). Labor supply theory assumes that certain modes of taxation, such as the so-called joint tax assessment of married couples, have a negative effect on maternal labor supply, at least when we assume that wives generally earn less than their husbands. Joint tax assessment implies that the incomes of spouses are summed up and distributed equally among them and that the respective tax rate is then applied to both spouses. It is evident that couples cannot expect an extensive tax advantage when both partners earn similar incomes. Therefore, joint tax assessment is considered being especially beneficial when partners earn very unequal incomes or when there is even only one breadwinner in the family. Taking into account that it is often the husband who earns the higher income, joint tax assessment can lead couples to make the decision that the labor supply of the wife should be relatively low because this is more beneficial for the family as a whole. This mechanism reflects the above-mentioned assumptions about specialization and exchange because in the case of joint tax assessment, the wife would give up some of her non-market time to join the labor force without a significant effect on utility maximization. In turn, the loss of non-market time might even decrease the satisfaction of the family. Despite the possible advantages for the family if the wife decides not to supply any labor, joint tax assessment implies a stronger dependency of the wife from the husband’s income. In turn, individual taxation can be expected to attenuate the influence of tax rates on women’s income and therefore increase their labor supply.

Empirical studies support this assumption. For instance, Gustafsson (1992) has compared maternal employment in Sweden after the implementation of individual taxation and maternal employment in Germany which is characterized by a system of joint taxation of married couples. Gustafsson concludes that joint taxation “[...] decreases married women’s economic remunerations from participating in the labor force [...]” (Gustafsson 1992: 82). The evidence from her empirical study suggests that “[...] German wives would increase labor force participation if faced with Swedish taxes and that Swedish women would decrease their participation if faced with German taxes [...]” (ibid.). Those results are supported by Crossley and Jeon (2005) who find that joint taxation can effectively be considered as a determinant of

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the labor supply of married women² by using the 1988 Canadian federal tax reform as a natural experiment for a switch from joint to individual taxation. Disadvantageous taxation that leads to a disproportional decrease of market income can therefore be considered as a disincentive for maternal employment.

Despite the theoretical considerations and the empirical evidence, information on the mode of taxation will not be included in the present analysis. On the one hand, the cross-national variation is rather small with Germany and Luxembourg being the only countries in the sample still applying the joint taxation of spouses. On the other hand, there is already an overall trend of abolishing this mode of taxation as the examples of United Kingdom, Sweden, the Netherlands, Spain, Portugal or Austria show (Bach et al. 2011).

² The effect is particularly important in the case of low-income women who are married to high-income husbands.

3. VARIABLES, DATA AND METHODS

The following chapter describes in more detail which variables are used in the subsequent analyses and where the data come from. The first subchapter presents the individual level variables which also include the dependent variable for the multi-level analysis. The single macro level variables, which have been assembled in the FEMMES Dataset compiled for the present study, cover a wide range of policy fields and welfare state measures. Therefore, the used data sources are diverse and require some detailed explanation which will be presented in the second subchapter. The final section of this chapter will introduce the methods.

3.1. Individual Level Variables and Data – The EU SILC Dataset

The second chapter has clearly pointed out that in its beginnings, labor supply theory has focused on the individual. Therefore, it is necessary to include individual level determinants of labor supply into the analysis to control for their effects on the labor market participation decision. The micro data come from the 2005 European Union Statistics on Income and Living Conditions (EU SILC)³. The EU SILC provides individual and household level data on cross-sectional and on longitudinal basis and covers a wide range of social and economic issues, such as income, social exclusion, housing, education, employment and health. The subsample of the EU SILC 2005 used for the present analysis consists of nearly 43.000 women from 15 European countries⁴, aged 25 to 54 and living in households with at least one dependent child.

The foregoing chapter has illustrated why certain individual characteristics are important determinants of labor supply. Before turning to the explanatory variables on the individual level, it is reasonable to give some information about the central dependent variable. The present study tries to determine factors that influence maternal labor supply. For this purpose, maternal labor supply will be operationalized as the *basic activity status*. The original variable displays if an

³All information on the original variables comes from the EU SILC codebook provided by the European Commission (2008).

⁴Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Sweden, Spain and the United Kingdom

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individual is employed, unemployed, in retirement or early retirement or if the individual is inactive for other reasons. For the purpose of the present study, the original variable is transformed into a dichotomous variable. Women in (early) retirement have been dropped from the sample and women who are unemployed or inactive have been summarized under the value 0. In turn, women who are employed have been assigned the value 1.

According to labor supply, the *market income* of a person is one of the main determinants for the labor supply decision. The EU SILC provides information on the amount of the yearly gross cash income from the main employment position of the individuals for eleven of the fifteen countries in the sample. The gross cash income is measured in EUR and refers to the monetary component of the compensation of an employee. Social security contributions on the part of the employee and on the part of the employer as well as income taxes and other taxes have not yet been deducted. Cash income not only includes wages and salaries, but also, for instance, holiday and overtime payments, commissions and tips and thirteen month payments. For Spain, Greece, Italy and Portugal, the EU SILC does not provide information for the yearly gross cash income, but for the gross monthly earnings. The gross monthly earnings are basically defined in the same way as the yearly gross cash income. They refer to monthly cash income in EUR before the deduction of social security contributions and taxes and they include additional payments, such as overtime premiums, commissions and thirteen month payments. For the purpose of the present study, the yearly gross cash income has been broken down to a monthly value to make the income information available and comparable for all the fifteen countries in the sample. However, it cannot be ignored that especially variables like the gross cash income from employment or the gross monthly earnings from employment can only be measured if an individual is actually employed. Therefore, those variables are subject to a possible selection bias that can only be avoided if the information is estimated for the individuals who have no own income or earnings from employment at their disposal. Missing cash income and earnings have therefore been calculated by means of the Heckman correction to estimate this information for those women who do not have their own income from employment at their disposal and this estimation had to be pursued for about 16.000 women in the sample. The exact procedure of estimation will be presented in the

methodological subchapter. Furthermore, the variable has been linearly transformed by means of a division by 1000 to facilitate the interpretation.

In a considerable number of cases, an individual's income or earnings from employment is only one of many different components of the total amount of money that is at their and their household's disposal every month. While labor supply theory has elaborated on the positive effect of personal income on the labor market decision, it has also pointed out the potential negative effects of these other components, usually referred to as the so-called *non-labor income*. Non-labor income is the amount of money at an individual's disposal without supplying labor to the market. It can consist of different financial resources, such as income from capital, social benefits and also of the income from employment that other members of the household contribute to the total household income. Labor supply theory assumes that there can be a trade-off between non-labor income and income from employment because some social benefits might be connected to not being employed. Furthermore, the one partner's income from employment might decrease due to a reduction of market time when the other partner decides to supply labor to the market as well. Therefore, it can be assumed that with increasing non-labor income, the trade-off between supplying labor to the market and not supplying labor to the market increases as well, i.e. that the probability of supplying labor to the market decreases with an increasing amount on non-labor-income. For the purpose of the present study, the EU SILC variable for the *total disposable household income* comes closest to the idea of the non-labor income, since it includes many different financial components, such as income from employment for all household members, income from capital and property and different kinds of social benefits. Just like the individual cash income, the information is measured in EUR. The information on the household income is provided on a yearly basis, so it has been broken down to a monthly value as well. Since the individual income from employment is included in the total household income, it has been subtracted from the household income to obtain a more accurate value of the non-labor income. Just as in the case of the individual labor market income, the information on the non-labor income has been linearly transformed by means of a division by 1000 to facilitate the interpretation.

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Information on the *age* of the individuals is thoroughly provided by the EU SILC and the values of the original variable take on values between 0 and 80. However, individuals below and above a certain age limit are only of limited relevance for the present study. If the conclusions about labor supply behavior are to be as undistorted as possible, children, adolescents and younger individuals with higher probabilities of still being in education should be excluded from the sample as well as older individuals who have a lower probability of living with children of young age. Therefore, the dataset is reduced to women of working age between 25 and 54 years.

Labor supply theory has widely elaborated on the meaning of *education* for the labor supply decision. Since it is assumed that average earnings rise with the level of education, individuals with a higher level of education are assumed to be more likely to supply labor to the market than individuals with a lower level of education. The original variable measures which level of the International Standard Classification of Education ISCED (UNESCO 1997) has currently been attained and it is subdivided into six categories. This classification of education levels has been developed since the 1970s and is technically subdividing educational degrees into seven categories. However, the EU SILC has summed up the last two categories (*first stage of tertiary education (not leading directly to an advanced research qualification)* and *second stage of tertiary education (leading to an advanced research qualification)*) into one single category and assigned the value 5 to it. The remaining five categories have been adopted one-to-one by the EU SILC. Individuals with only pre-primary education are assigned the value 0 and individuals with primary education are assigned the value 1. If individuals have attained the lower secondary level of education, i.e. if they have finished the compulsory part of schooling, they are assigned the value 2. Individuals who have attained upper secondary education are assigned the value 3 and individuals with post-secondary non tertiary education have been assigned the value 4. For the purpose of the present study, the variable has been recoded into a dichotomous variable. All individuals who have not attained more than lower secondary education, i.e. who have no educational achievement beyond compulsory schooling, have been assigned the value 0. All individuals who have invested in their educational achievement beyond compulsory education have been assigned the value 1.

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With regard to *the number and age of children*, the information covered by the EU SILC is not very straightforward in the sense that there are no variables which provide answers to these exact two questions. However, the EU SILC gives information on the composition of households. The original variable displays how many adults live in the household and in which age groups the adults are and it also gives information on the question if there are dependent children living in the household, dependent children being defined as household members aged 17 or less and household members aged between 18 and 24, but economically inactive and living with at least one parent. The original variable is subdivided into ten categories of which half of them are not essential for the research question of the present study. Individuals living in one person households and individuals living in households with two adults of working age or of retirement age and no dependent children have been excluded as well as other households (with no dependent children) and cases in which no information on the household type has been given. The household types that remain are two adult households with either one dependent child, two dependent children or three or more dependent children, single-parent households with at least one dependent child and other households with at least one dependent child. For the purpose of the present analysis, this variable has been transformed into a categorical variable with living in a household with at least one dependent child having been assigned the value 1, with living in a household with at least two dependent children having been assigned the value 2 and with living in a household with three or more dependent children having been assigned the value 3. Since the original variable also provides information on the number of adults in the household, it has also been used to construct a further variable on the parenting situation, namely if the household is a single mother household or if the household is run by more than one parent. Households with more than one adult have been assigned the value 0 while single mother households have been assigned the value 1.

According to the assumptions that labor supply theory makes with regard to specialization and exchange between spouses, it is essential to include information about the *marital status* of an individual. In the EU SILC, the original variable subdivides individuals into those who have never been married, those who are married and those who are separated, divorced and widowed. Clearly, neither unmarried nor separated, divorced or widowed women are necessarily single. Also,

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women who are separated, divorced or widowed have obviously been married before and have possibly chosen to specialize in non-market work during the time of their marriage with all the potential negative consequences for their human capital and for their labor market chances. But since labor supply theory assumes that married couples might be most likely and able to opt for specialization and exchange and since in this case, it is most likely that the wife focuses on non-market work and the husband focuses on market work, the main distinction has to be made between women living in a marriage relationship and women not living in a marriage relationship. For the purpose of the present study, the original variable has therefore been transformed into a dichotomous variable. Women who have never been married and women who are separated, divorced or widowed have been summarized to the category of women living without a partner. This category has been assigned the value 0 while the value 1 has been assigned to married women.

3.2. Country Level Variables and Data – The FEMMES Dataset

The majority of the data in the FEMMES Dataset cover 22 OECD countries⁵ and the period from the mid- to late-2000s. The following section describes which specific instruments from the five afore-mentioned policy fields are included in the present study. However, the selection of particular policy variables not only follows labor supply rationales, but also tries to draw a comprehensive picture of welfare state incentives for maternal labor supply. Therefore, the selected variables cover different dimensions of welfare state intervention, such as rights and entitlements, benefits, allowances and services (cp. Kaufmann 2002 for a detailed overview of the different dimensions of welfare state intervention). Detailed tables containing the raw data can be found in Appendix B of this study.

Coding

Before the selection of variables from the different policy fields is presented, some general information about the handling and coding of the variables will be given. All variables take on values ranging from 0 to 1. Higher values always imply a higher degree of welfare state incentives for maternal labor supply. This implies that some variables, such as, for instance, the level of childcare fees, had to be recoded to assign countries with a high level of private childcare costs a lower value than countries with a low level of private childcare costs. Another important example for which this kind of recoding had to be applied are family cash benefits, since low benefits are actually considered having a more incentivizing effect on labor supply than high family cash benefits. Providing a lower level of cash benefits is, hence, positively connoted and leads to ascribing higher values to countries which provide a lower level of benefits. The variables whose values were already ranging between 0 and 1 (or 0 and 100 respectively) and where higher values already implied a higher level of welfare state incentives, such as, for instance, childcare coverage, were simply applied in their original form. When meaningful, some policies were recoded into categorical variables, for instance with regard to the information on entitlement and financial extent of parental leave. For other variables, the highest actual value

⁵ Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Sweden, Spain, Switzerland, the United Kingdom and the United States.

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was used as a maximum and assigned the value 1 while the other values were transformed to a percentage share of it. This has been done to relate the values of the different countries to each other. For instance, the value 1 has been assigned to the country with the highest number of school days per year (212 days in Luxembourg). The fact that in other countries, the school year only comprises 175 days (Germany and Spain) does not mean that those countries do not provide any incentive at all in the field of school education as a form of de facto childcare. Since it could be considered as distortion if the value 0 would be assigned to those countries, the values of such a variable for the other countries are an expression of the percentage share of the maximum value.

Parental Leave

The variables from the policy field of parental leave mainly refer to legal entitlements. Policy instruments from this field regulate the relationship between employer and employee in the period after childbirth and when it comes to questions of caregiving for children. It has been argued before that parental leave with legislated job guarantee avoids the decrease of the value of market time that would normally be caused by the interruption of employment although parental leave implies an actual employment discontinuity. Consequently, a variable on the *statutory entitlement to maternity leave* is included in the analysis, taking into account if there is any existing statutory entitlement, if it is paid and to what extent it is paid. A statutory entitlement to maternity leave with a replacement rate of more than 50% should have a positive effect on maternal labor supply. Without this entitlement, mothers might tend to opt for a complete withdrawal from the labor market after childbirth and this can call their re-entry into question. If mothers have the possibility to take up a period of paid maternity leave, they can return to their workplace and they are not at risk for considerable financial losses during or after the employment break. Likewise, a variable on the statutory entitlement to paternity leave is included, assuming that the possibility for fathers to withdraw temporarily from the labor market has a positive effect on maternal labor supply as well. Existing paternity leave entitlements can shorten the period of time that mothers take off for caregiving which, in turn, strengthens their labor market attachment and reduces income losses. Just as the variable on maternity leave, the variable on paternity leave

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takes into account as well if there is any existing statutory entitlement, if it is paid and to what extent it is paid.

It has been indicated before that the effect of the actual length of parental leave periods has been inconsistently discussed in the literature (cp. Gornick et al. 1996a; Pettit and Hook 2005). To shed more light on the question which element of leave duration has a positive effect on maternal labor supply, three different variables on the length of parental leave are included in the present study to explore which element of the length of parental leave affects maternal labor supply in a positive way. Besides the *maximum number of months of parental leave*, the *maximum number of paid months of parental leave* is taken into account as well. Finally, the *maximum number of paid months as a share of the maximum number of months* is included to analyze if, for instance, it is not the actual length of (paid) leave, but the share of the leave that is covered by wage replacement that affects maternal labor supply.

Finally, the option of *leave in case of sickness of a child* is included. The variable captures information on the existence of statutory entitlements to sick child leave, on the replacement rate during sick child leave and on the extent of this leave arrangement, i.e. on the existence of additional leave entitlements covering a wider range of family members other than young children and/or situations of serious illness. The possibility of sick child leave can positively affect maternal labor supply because it anticipates the option of taking time off from work when necessary without the risk of financial losses.

The data on parental leave entitlements and conditions come from a study by Moss and Wall (2007) who have edited an issue that reviews parental leave arrangements from an international perspective in the context of the Employment Relations Research Series published by the Employment Market Analysis and Research Group (which is affiliated to the UK Department for Business, Innovation and Skills). The study presents information and research on leave policies such as maternity leave, paternity leave and parental leave for 24 countries. For each country, the report includes information on statutory entitlements, on the existence, length and amount of income replacement rates during take-up, but also on additional leave in case that

children (or even other family members) become sick. Their information is based on detailed country studies reviewing the legal situation in each country which can be assumed to ensure a sufficient amount of comparability.

Public Childcare

Previous research has shown that childcare responsibilities are one of the main factors which prevent mothers from carrying out uninterrupted full-time employment (cp. Platenga and Hansen 1999). In the present study, the variables on public childcare cover the legal, the monetary and the infrastructural dimension of welfare state intervention. A *legal entitlement to infant care and / or kindergarten / pre-school care* is assumed to affect maternal employment in the long run. An entitlement to childcare for children below school age can lead to fewer and shorter employment interruptions which, in turn, provide for more time spent in the labor market leading to more continuous labor market attachment and experience and it can also have a positive effect on the type of employment and the amount of earnings (Blau et al. 2006). However, a legal entitlement to public childcare does not necessarily make a clear statement about the actual provision of childcare. The provision rather falls into the category of the infrastructural welfare state intervention and two variables on *childcare coverage*, covering the percentage share of children below the age of three and the share of children aged three to five in childcare, are used to analyze the effect of actual welfare state provision on maternal labor supply. Information on the *continuity of days in public childcare* is included as well to approximate the actual support since a more comprehensive childcare day provides mothers with a better possibility to supply more than part-time labor. For the present purpose, the childcare day is categorized into mostly half-day, mostly full-day and a mixed category for countries in which neither half-day nor full-day prevail, assuming that when childcare is provided mostly full-time, this will have a positive effect on maternal labor supply.

Since the private costs of childcare can be seen as a tax on the market income of a working mother, low childcare fees are seen as an equivalent to an effective increase in the wage rate and can therefore be expected to lead to an increase in female labor supply (Blau et al. 2006). Therefore, a variable on *childcare fees as a percentage of the average wage* is included. Here, it is assumed that a high level of welfare state

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support with regard to the financial resources that go into public childcare, i.e. requiring as low private childcare costs as possible, has a positive effect on maternal labor supply. The inclusion of a variable on the *public spending on childcare* as a share of the GDP points in the same direction by indicating how much financial support the welfare state directed towards the provision of childcare which can, in turn, indicate how much of the financial burden is passed on to the parents. Furthermore, previous research has suggested that childcare quality indeed plays a role when parents make a decision about transferring a part of the caregiving task to childcare institutions and the parental decision about childcare can indirectly influence the labor supply decision. Therefore, the *child-staff-ratio* in childcare institutions for children below the age of three and for children aged three to five is included as a proxy for the quality of childcare institutions.

The basic information on legal childcare entitlements comes from a paper by Bennett (2008) which has been published in the context of the UNICEF Innocenti Research Centre. The paper reviews current research and policies with regard to early childhood education and care in OECD countries. It provides an overview of entitlements to formal early childhood services by age and gives information about the legal rights to childcare services, the covered age span, the continuity and length of the childcare day, the duration of the entitlement and the childcare costs for families. For most of the data, Bennett makes recourse to information from the OECD (2006) which provides information on the state of early childhood education and care institutions for the mid-2000s.

In general, the OECD has turned out to be one of the main providers of data on questions of work and family life reconciliation and childcare services. Under the title *Babies and Bosses*, the OECD has issued a series of publications that reviews policies to promote the compatibility of family and work by means of detailed country studies and a final study that compares and summarizes the findings (OECD 2007). This last synthesizing study provides a large amount of comparative indicators for countries' efforts to facilitate the reconciliation of work and family obligations. For the present purpose, this data source has been used to obtain information on the child-staff-ratio as a proxy for the quality of childcare institutions. It includes cross-national information on the average child-staff-ratio in formal

daycare services for children below the age of four and on the average child-staff-ratio in kindergartens and other pre-primary education services for children aged three to six (OECD 2007: 144). This OECD study has also been used to obtain information on the public spending on formal childcare services including pre-primary education services. The data are derived from the *OECD Social Expenditure Database* and they measure childcare expenditures as a share of the gross domestic product in 2003 (OECD 2007: 135). Furthermore, the OECD study also provides information on the length of the childcare day. However, information on part-time or full-time arrangements for childcare had to be compiled from different data sources, since the OECD study only covers Australia, Austria, Belgium, Denmark, Finland, France, Italy, Norway and Sweden with regard to this question (OECD 2007: 133 et seq.). Therefore, the afore-mentioned study by Bennett (2008) has been used to fill the information gap for Canada, Ireland, the Netherlands, Portugal, the United Kingdom and the United States. In turn, information for Germany and Greece come from the Eurydice Database which has also been used for data on school schedules and which will be described in more detail below.

Another OECD source which provides detailed information on policies for the reconciliation of work and family obligations is the OECD Family Database (OECD 2011). This database ties in with the *Babies and Bosses* series and provides further indicators on the situation of families and children, including family outcomes and family policies. The database compiles information from different OECD and non-OECD databases and covers four main topics – the structure of families (fertility and marriage), the labor market situation of families (employment and working time), public policies for families and children (tax-benefit systems, parental leave and childcare) and child outcomes (health, poverty and education). For the purpose of the present study, the OECD Family Database has been used to derive information on the costs of childcare for families. Here, the OECD does not only provide information on childcare fees, but also calculates the net childcare costs for families. The use of full-time childcare for one child at the age of two and one child at the age of three in a typical daycare institution constitutes the basis of the calculation. Net childcare costs are defined as the childcare fees net of possible cash benefits, rebates and tax breaks. The use of net childcare costs is reasonable since subtracting varying kinds of reductions "[...] from the gross fee charged by the childcare provider gives

the net cost to parents, i.e. the "out-of-pocket" expenses resulting from the use of a formal childcare facility [...]" (OECD 2010a).

The afore-mentioned review by Moss and Wall (2007) also includes information on the coverage of childcare institutions. Their data on the share of children below the age of three and the share of children aged three to five who attend formal early childhood education and care services are from the beginning to mid-2000s and mainly come from the OECD Family Database. They also compare varying information about childcare coverage for children below the age of three across different data sources and unfortunately, the information for some countries is characterized by extensive differences. However, the decision is made in favor of the OECD data for children below the age of three in formal childcare because the data for the share of three to five year olds in formal childcare come from the OECD Family Database as well. Since Moss and Wall (2007) do not provide data for Austria, information by the Austrian Federal Bureau of Statistics has been used to fill the gap (Statistik Austria 2010).

School Policy

With regard to the effect of school schedules on maternal labor supply, this relationship can be compared to the relationship between public childcare and maternal labor supply. In a large part of the developed world, a certain amount of school years is compulsory for every child. In contrast to public childcare provision for children below school age, school education is normally institutionalized and available to every child without specific legal entitlement. However, the configuration of certain features of school education can be assumed to influence the reconciliation of work and family life for parents of school-aged children and in this way also affect the labor supply decision of mothers. Since the *start of compulsory schooling* somehow rings in the start of institutionalized and guaranteed de facto childcare, a variable on the school starting age is included, assuming that a low school starting age has a positive effect on maternal labor supply. Furthermore, information on the *number of school hours per week* (for school students in primary and secondary education) and on the *number of school days per year* is included to approximate the comprehensiveness of public school schedules. A high comprehensiveness of school week and school year decreases the need for childcare

beyond the regular school schedules which will, in turn, have a positive effect on maternal labor supply.

The Eurydice Database (2010) has been used to gather information on school policy and school schedules, although it is in the very nature of this source that the data is only available for member states of the European Union. However, this will not lead to inconsistencies in the analysis since the Gower Dissimilarity Coefficient used for the later cluster analysis allows for missing values on single variables which makes it possible to include the non-European states in the procedure and to gain insights into the situation in these countries as well. Furthermore, the subsequent multi-level analysis uses micro data from the European Union Statistics on Income and Living Conditions which, by definition, only focuses on European Union member states. The Eurydice Database provides information on education systems and education policy in Europe and it is affiliated to the Education, Audiovisual and Culture Executive Agency (EACEA) of the European Commission which is responsible for the management of parts of the European Union's programs in these policy fields. Eurydice primarily focuses on the structure and organization of education at all levels and across Europe. It collects detailed data and overviews of national education systems from pre-primary education to the entire school system to vocational and university education and lifelong learning. It provides indicators and statistics and the country studies are suitable for the purpose of the present study since they make comparable data available with regard to the start of compulsory schooling, the number of school hours per week at different levels of school education and the number of school weeks per year.

Employment Law

This policy field basically captures the (temporal) flexibility at the workplace and mostly refers to the legal form of welfare state intervention, even though its effects on the financial situation cannot be denied. Generally, working time policy protects the employee from inappropriately high working hours, regulates overtime conditions and compensation, provides for sufficient vacation and protects from discrimination. Working conditions can be assumed to affect maternal labor supply because they indicate the possibility of reconciliation of work and family life without substantial income losses. In this way, the *length of the standard full-time workweek*,

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categorized in short full-time (less than 40 hours), normal full-time (40 hours) and long full-time (more than 40 hours) indicates at which rate mothers are enabled to pursue full-time employment and enjoy all social and earnings-related benefits that accompany this type of employment. Since long full-time employment can involve an increased need for childcare at rather atypical hours which, in turn, will decrease the effective market wage, short full-time is expected to have a positive effect on maternal labor supply.

The amount of *legally guaranteed vacation days* per year as well as the number of *mandatory paid holidays* is an indication for the possibility of reconciling work and family life as well. Not only does it allow for some quality time within the family, but it also implies that parents have the possibility to take time off from work simultaneously with their children. This decreases the risk of additional childcare costs which will, in turn, increase the effective market wage. The need to work overtime can occur in many types of employment. For mothers, this case can be assumed to imply additional childcare costs which can decrease the effective market wage. Therefore, two variables on *overtime premiums* are included, one capturing the compensation for the first set of overtime hours and a second variable capturing the potential compensation for the second set of overtime hours (which does not exist in every country). These variables account for the welfare state incentives that are supposed to outweigh the potential costs of overtime work. Finally, if full-time employment is not available or feasible for mothers, it is important that the welfare state provides the *possibility of part-time employment without the risk of discrimination*. Two variables covering part time employee protection are included which deal with the security against discrimination regarding the benefits enjoyed by full-time workers, such as leaves, overtime premiums and social security and regarding the legal rights to advance notice and separation fees for the termination of the employment contract.

The data on employment law primarily come from a database on labor regulation which has been put together by Botero et al. (2004). Most of the data are from the beginning of the 21st century and have been derived from primary legal sources, although the authors have used secondary sources to confirm their data. For Botero and his colleagues, employment law covers four different dimensions which are, in

turn, operationalized by a number of single variables: alternative employment contracts, the cost of increasing working hours, the cost of firing workers and dismissal procedures. For the purpose of the present study, the first two dimensions are considered particularly important. The dimension of alternative employment contracts measures the existence and cost of alternatives to the standard employment contract. This dimension covers, among others, information on the discrimination of part-time employees, both with regard to benefits and with regard to the termination of part-time employment contracts. Here, it is important to mention that in their operationalization of anti-discrimination of part-time employees, Botero et al. not only code those variables with the value 1 if there is no discrimination, but also if the option of part-time employment is completely prohibited by labor law. The rationale behind that is most likely that if the opportunity of part-time contracts does not exist, there cannot be any discrimination with regard to benefits or with regard to the termination of contracts. Since it is assumed that measures to protect part-time employees against discrimination are a crucial element in encouraging maternal labor supply, it would be unfortunate if every country which has been assigned the value 1 would actually be characterized by a prohibition of part-time employment instead of an anti-discrimination policy. However, all countries in the sample are either a member of the European Union or of the International Labor Organization or a member of both entities. Both these organizations have passed laws or conventions that require the introduction of the opportunity of part-time work on the part of their member states (cp. ILO 1994; EU 1997). Hence, it can be assumed that in the majority of cases, countries which have been assigned the value 1 on both variables are most likely to be countries in which anti-discrimination protection of part-time employees exists and not to be countries in which part-time employment is prohibited by labor law.

Measuring the cost of an increase in the number of working hours refers to various single variables on the number of paid mandatory holidays per year, on the maximum duration of the regular work week (working hours per week without overtime) and overtime payments, i.e. the premiums for overtime (ratio of the overtime wage over the normal wage). The variable on overtime premium is subdivided in information on the premium for the first set of overtime hours per week and the premium for the second set of overtime hours per week because

employment laws generally provide for a two tiered system of overtime payments. This dimension of employment law also covers information on the number of minimum vacation days per year. However, by definition, Botero et al. (2004) only refer to the days of annual leave with pay in the manufacturing sector after twenty years of employment. Therefore, most of the information on yearly minimum vacation comes from the ILO TRAVAIL Database of Conditions of Work and Employment Laws (1996 – 2011). This database provides information on the regulatory environment of working time, minimum wages and maternity protection across more than 100 countries. It contains comprehensive legal data and does not only focus on one specific economic sector with regard to the duration of annual leave. Therefore, this database has been selected as the source of information for the minimum vacation days per year for a majority of the countries. Since TRAVAIL did not include information for Belgium, Ireland, the Netherlands, Portugal and Switzerland, the data by Botero et al. (2004) have been used to fill the information gap for these five countries.

Family Allowances and Modes of Taxation

Since in most cases, earnings from employment are the kind of income that is subject to taxation (compared to, for instance, some social benefits), *family tax breaks* are an important policy instrument to increase the effective market wage of a working mother. Therefore, the present study includes a variable on tax breaks as a share of the GDP. The main intention of *family cash benefits* is certainly not related to questions of labor supply. It is evident that family cash benefits imply an important financial relief for many families and that they can prevent the risk of extensive poverty. However, when the logic of labor supply theory is applied, family cash benefits can actually have a negative effect on maternal labor supply by increasing the reservation wage. For the present purpose, family cash benefits will therefore be understood as a disincentive to labor supply and the level of welfare state incentives for maternal labor supply will be rated higher when the share of the GDP spent on family cash benefits is lower. Furthermore, for many countries, we find combinations of relatively high spending on family benefits in kind (cp. the public spending on childcare) and relatively low spending on family cash benefits. This suggests that countries spending less on cash benefits might simply follow a different order of

priority than countries spending more on cash benefits instead of assuming that low family cash benefits generally imply low welfare state provisions for families.

The *Babies and Bosses* study has been used to derive data on family cash benefits and tax breaks. Public social spending as a share of the gross domestic product or public social spending as a share of total government spending usually covers more than the spending on family policy. The OECD provides data on family spending that explicitly refers to public support for families, such as child payments and parental leave benefits. Furthermore, the OECD also gives information on family tax breaks which are considered being one key measure of financial support for working parents (OECD 2007: 72). Information on joint or individual modes of taxation will not be included due to small cross-national variation and the overall trend to introduce individual taxation (cp. page 47).

Country Level Control Variables

When analyzing questions of labor supply, the possible influence of the general national employment situation cannot be disregarded. Hence, the main and most obvious indicator for the purpose of the present study is the overall female employment rate. The indicator comes from the OECD Factbook (OECD 2010b) and gives, just like the individual data and the majority of the policy data, information on the situation in the year 2005. It would be distorting to use the simple unemployment rate, since the unemployment rate only measures the ratio of those individuals in a country which are unemployed compared to the national labor force. However, it is by all means possible that a considerable number of individuals is neither employed nor unemployed, i.e. that a considerable number of individuals is not a part of the labor force. Therefore, it is advisable to use information on the employment-population ratio. The employment-population ratio "[...] relates the level of employment to the working-age population (those aged 15 – 64), regardless of whether or not (individual) people are officially considered to be in the labor force [...]" (Siaroff 1994: 86; Leon 1981). It is assumed that the female employment-population ratio is a valid indicator for the general economic and labor market situation of a country. If a large share of the women of working-age has no trouble finding employment, women with children are not likely to be excluded from this favorable labor market situation.

Research dealing with the public support of maternal employment is often associated with questions of culture, traditions and attitudes towards the role of women and mothers which can influence maternal labor supply decisions as well (cp. Pfau-Effinger 2000; Leira 2002; Pfau-Effinger 2004). Even though the present study generally assumes that these attitudes can also be influenced and shaped by the degree of state support for female employment, the relationship between public and private attitudes can also be subject to reverse causality, implying that the state aligns its own policies with the traditions and attitudes that are prevalent in its society to, for instance, ensure the support of voters. Therefore, the present study includes a control variable that measures to which extent traditional attitudes towards the role of women and mothers are still prevalent across countries. Since the EU SILC 2005 does not provide this information, the corresponding data have been gathered from the European Values Study 2008. The European Values Study has been initiated to collect information about attitudes across Europe and about the convergence, divergence or change of values across countries with an overall focus on questions of religion. Until today, there have been conducted four waves in the years 1981, 1990, 1999 and 2008. The EVS 2008 is the one that comes closest to the general time frame of the present study and it provides a variable that asks for the relationship between working mothers and their children or, more specifically, if the respondents think that working mothers can establish a relationship with her children that is just as warm and secure as the relationship that stay-at-home mothers can potentially establish with their children. For the purpose of the present study, the respondents who (strongly) disagreed with that statement have been summarized and are used as a representation of the share of the population that holds more conservative values towards the role of mothers.

3.3. Methodology

3.3.1. Country Level Analysis

Analysis of Variance

The analysis of the country level data is performed by means of different methodological approaches. The appropriateness of conventional country clusters and of the country clusters that will be established in the course of the study will be tested by means of analyses of variance which are, ultimately, single regression analyses with the respective average levels of welfare state incentives in the single policy fields being the dependent variables and the country groups being the independent variables. For these regressions, the country groups have been transformed into dummy variables. This procedure implies that one country group is treated as reference category. The mean of the reference group is the regression constant while the coefficients of the other country groups indicate the difference of their mean compared to the mean of the reference group. Just like other regression analyses, these regressions report the amount of explained variance. Since analyses of variance are applied to conventional country clusters and to the classification established in the course of the present study, the differences in the amount of explained variance can be used to compare the appropriateness of the different typologies.

Cluster Analysis

The first step of the cluster analysis is the calculation of a dissimilarity matrix by which the countries' performances are compared. The distances between the different countries give some first indication about possible country clusters. Since the dataset contains binary and continuous variables, the Gower dissimilarity coefficient is the dissimilarity measure of choice which has the further advantage of not excluding observations with missing values on single variables. In the following formula of the Gower coefficient, the inclusion of binary variables and the consideration of missing values for the calculation of the distances d are represented by δ . The Gower coefficient calculates pairwise dissimilarities between the observations in the data set. The distance d between two units i and j is the sum of all variable specific

distances. When values are missing for either one unit or both units under comparison or when the values of both units i and j equal 0, δ equals 1.

$$d_{ij} = \frac{\sum_{k=1}^p \delta_{ij}^{(k)} d_{ij}^{(k)}}{\sum_{k=1}^p \delta_{ij}^{(k)}}$$

The dissimilarities calculated by means of the Gower coefficient are commonly used as inputs to cluster analysis. In the present study, cluster analysis is applied to attain a more specific picture of potential country clusters. Cluster analysis is a method of numerical classification of cases and pattern recognition. From the different available ways of cluster analysis, the agglomerative hierarchical form is chosen which does not require the prior determination of a certain number of clusters. Agglomerative hierarchical clustering proceeds by grouping single observations and by enlarging those groups to bigger clusters until the entire sample is included. The underlying principle is the achievement of maximal homogeneity within the single clusters and the achievement of maximal heterogeneity between the single clusters (cp. Wiedenbeck / Züll 2010). Within the method of agglomerative hierarchical clustering, the procedure of choice is Ward's Algorithm which groups the observations that only minimally increase the variance within one cluster (cp. Backhaus et al. 2000). Compared to other agglomerative hierarchical cluster procedures, Ward's Algorithm tends to produce more stable results.

3.3.2. Multi-Level Analysis

Hierarchical Logistic Regression

The present study is not only interested in comparing welfare state incentives for maternal labor supply on the country level, but also in analyzing the effects of these incentives on individual maternal labor supply. Since the outcome variable (being employed or not being employed) is an individual characteristic and since it has been shown that the basic assumptions of labor supply theory refer to individual

characteristics, these individual determinants have to be included in the analysis to control for these associations. This turns the analysis into one which considers individual and country level factors. Furthermore, the dependent variable is binary (0 = not being employed, 1 = being employed), so that the models of choice are hierarchical logistic regressions to estimate the impact of welfare state incentives on the odds of maternal labor force participation while controlling for individual level determinants.

The application of hierarchical logistic regressions allows to determine beforehand how much of the variance is located on the country level. This is done by using the first model as an intercept-only-model including the dependent variable *employed_{ij}*, the average intercept γ_{00} and the residual error variances on the country level u_{0j} . Neither the intercept-only-model nor the following individual- and country-level models contain the usual error term e because in contrast to linear multi-level models, this error variance is implied by the choice of the logistic distribution and equals $\pi^2 / 3$. Furthermore, in this and all the following models, the subscripts i and j refer to individual mothers i in countries j .

Intercept Only Model:

$$\text{logit}(\textit{employed}_{ij}) = \gamma_{00} + u_{0j}$$

The residual error variances on the individual and on the country level are used to calculate the so-called intra-class correlation coefficient ρ . The intra-class correlation coefficient is used to determine if individuals from the same country are more alike than individuals from different countries. If this is the case, it is assumed that the explanatory variables on the country level can indeed be held accountable for the variation between the countries. The intra-class correlation coefficient ranges from 0 to 1 with higher values implying a higher share of the variance being located on the country level. In the case of hierarchical logistic regressions, the calculation of the intra class correlation coefficient includes the intercept variance τ_{00} and the error variance of the logistic model $\pi^2 / 3$ (cp. Snijders/Bosker 1999; Hox 2010).

$$\rho = \frac{\tau_{00}}{\tau_{00} + \frac{\pi^2}{3}}$$

In the next step, the explanatory variables on the individual level are added to the model. The individual level model estimates the effects of the individual level variables on the odds of maternal labor force participation and these effects are allowed to be random, i.e. to vary across countries, since it cannot necessarily be assumed that their impact is equal across countries. Furthermore, the three continuous individual variables *diff*, *age* and *wage* are centered on their grand mean.

Individual-Level Model

$$\begin{aligned} \text{logit}(\text{employed}_{ij}) = & \gamma_{00} + \gamma_{10} * (\text{age}_{ij} - \overline{\text{age}}..) + \gamma_{20} * \text{married}_{ij} + \\ & \gamma_{30} * \text{education}_{ij} + \gamma_{40} * \text{children}_{ij} + \gamma_{50} * \text{single}_{ij} + \\ & \gamma_{60} * (\text{wage}_{ij} - \overline{\text{wage}}..) + \gamma_{70} * (\text{diff}_{ij} - \overline{\text{diff}}..) + \\ & u_{1j} * (\text{age}_{ij} - \overline{\text{age}}..) + u_{2j} * \text{married}_{ij} + u_{3j} * \text{education}_{ij} + \\ & u_{4j} * \text{children}_{ij} + u_{5j} * \text{single}_{ij} + u_{6j} * (\text{wage}_{ij} - \overline{\text{wage}}..) + \\ & u_{7j} * (\text{diff}_{ij} - \overline{\text{diff}}..) + u_{0j} \end{aligned}$$

The individual-level model contains the dependent variable *employed_{ij}*, the average intercept γ_{00} and the constant regression coefficients for all seven explanatory variables on the individual level used in the present study (γ_{10} through γ_{70}). The error terms u_{1j} through u_{7j} account for the possible country-dependent variation of the influence of the individual-level variables on the probability of maternal labor force participation, indicated by the subscript *j* denoting to which country it belongs.

In the multi-level models, the explanatory variables and the control variables on the country level are added to the model to explain cross-national differences in the average employment probability of mothers. While the country-level control variables *culture* and *employment* are included in every multi-level model, the explanatory variables are added to the model separately and one by one. There will be five models calculating the influence of the average levels of welfare state incentives in all five policy fields, six models for the single indicators from the field of parental leave, eight models for the single indicators from the field of childcare, seven models for the field of employment law, four models for the field of school

policy and two models for the single indicators from the field of taxation and allowances. These single variables are indicated by the term $\gamma_{03} * Z_j$.

Multi-Level Model

$$\begin{aligned} \text{logit}(\text{employed}_{ij}) = & \gamma_{00} + \gamma_{10} * (\text{age}_{ij} - \overline{\text{age}}_{..}) + \gamma_{20} * \text{married}_{ij} + \\ & \gamma_{30} * \text{education}_{ij} + \gamma_{40} * \text{children}_{ij} + \gamma_{50} * \text{single}_{ij} + \\ & \gamma_{60} * (\text{wage}_{ij} - \overline{\text{wage}}_{..}) + \gamma_{70} * (\text{diff}_{ij} - \overline{\text{diff}}_{..}) + \\ & \gamma_{01} * \text{culture}_j + \gamma_{02} * \text{employment}_j + \gamma_{03} * Z_j + \\ & u_{1j} * (\text{age}_{ij} - \overline{\text{age}}_{..}) + u_{2j} * \text{married}_{ij} + u_{3j} * \text{education}_{ij} + \\ & u_{4j} * \text{children}_{ij} + u_{5j} * \text{single}_{ij} + u_{6j} * (\text{wage}_{ij} - \overline{\text{wage}}_{..}) + \\ & u_{7j} * (\text{diff}_{ij} - \overline{\text{diff}}_{..}) + u_{0j} \end{aligned}$$

Heckman Correction

The theoretical remarks and the formula of the individual level estimation presented above have shown that the individual market wage is assumed to be one central predictor of the labor supply decision and that it is used as one of the main individual independent variables. Unfortunately, information on individual wages often falls prey to so-called incidental truncation because this information normally depends on another variable, namely the employment status. The wage can only be observed when a person is working and it cannot be observed when a person does not participate in the labor market. Therefore, it is necessary to estimate the missing wages by means of the so-called Heckman estimation method to correct for the selection bias in a preparative step. This method, developed by James J. Heckman (1979), has established itself as the most common way of estimating missing wages in labor supply research, even though it is not free from critique (cp. Puhani 2000). The estimation of missing wages is possible in the case of the present study because all the variables that are assumed to determine the wage and the selection bias can be observed for each individual. The Heckman correction suggests adding a selection equation to the model (cp. Wooldridge 2002: 560).

$$\begin{aligned} y &= x\beta + u, E(u/x) = 0 \\ s &= 1 [zy + v \geq 0] \end{aligned}$$

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Here, it is important that any \mathbf{x} is also an element of \mathbf{z} while some elements of \mathbf{z} are not supposed to be in \mathbf{x} . For the present purpose, the available micro data have already been reduced to women living in households with dependent children, thus the wages of the employed individuals provide the basis for the estimation of the wages of the unemployed individuals. The first equation uses the gross cash income as the dependent variable and comprises two determinants of the salary, namely the age and the level of education. The selection equation additionally includes information on the number of children, the marital status and the parenting status. Adding these three variables to the selection equation is based on the assumption that these three factors are most likely to cause the selection bias.

4. RESULTS AND DISCUSSION

The fourth chapter presents the results of the country-level and the multi-level analysis. Starting with a discussion of the cross-national variation of welfare state incentives for maternal labor supply, the first part of this chapter presents an attempt to establish a classification of countries according to their extent and emphases of those welfare state incentives. This chapter reviews the adequacy of traditional country clusters and presents a new suggestion of country clusters which are more appropriately corresponding to the cross-national variation of welfare state incentives for maternal labor supply. It starts by comparing single welfare state incentives from all five policy fields included in the present study and by comparing average levels of welfare state incentives across all indicators from each policy field across countries. Those cross-national comparisons will provide a first indication for the performance of welfare states and for the appropriateness of existing gender-sensitive typologies. However, the subsequent analyses of variance for the conventional country clusters and for the new country clusters established by means of a cluster analysis using all indicators included in the present study will reveal that the here established country clusters are more appropriate to group countries according to the effort they direct towards maternal labor supply. As a final step of the country-level analysis, three specific countries not displaying the expected performance will be studied in more detail. By means of three more in-depth studies of the cases of Norway, Canada and Germany, possible causes for the different allocation of these countries in the new country clusters will be traced.

The second part of this chapter presents the results of hierarchical logistic regressions testing for the association of the welfare state incentives with individual maternal labor supply under control for the economic situation and for the common individual determinants of labor supply. Since the country-level analysis will show that labor supply incentives are partly characterized by considerable cross-national differences, it is worth investigating if this variation is reflected by the labor supply decisions of mothers, i.e. if higher levels of welfare state incentives are associated with a higher probability of maternal labor supply. The second part will present descriptive information of the association between the maternal employment rate, the average levels of welfare state incentives and the individual and country-level control

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variables. Subsequently, it will present six hierarchical logistic regressions to analyze the influence of the average levels of welfare state incentives across all five policy fields and of all the single indicators from each of the five policy fields on maternal labor supply.

4.1. Welfare State Incentives for Maternal Labor Supply – Starting Point for a New Welfare State Typology?

4.1.1. Cross-National Variation of Welfare State Incentives for Maternal Labor Supply

Cross-National Variation of Single Welfare State Incentives

How are welfare state incentives for maternal labor supply shaped across countries? Is the degree and focus of employment supportive policies dissimilar across countries? And, if countries turn out to perform differently, are they varying in ways that are comparable to established typologies or are the traditional welfare state types not appropriate to explain cross-national variation of welfare state incentives for maternal labor supply?

Table 4.1. Cross-National Variation of Single Welfare State Incentives (2004 – 2010)

Length of Paid Leave in Months (2007)	Childcare Costs in % of Average Family Net Income (2004)	Minimum Vacation Days per Year (2004)	Length of the School Year in Days (2010)	Tax Breaks as % of GDP (2007)
US 0	BE 4	US 0	GR 175	SE 0,00
GR 2	PT 4	JP 10	ES 175	DK 0,00
NL 2,5	GR 5	CA 14	SE 178	FL 0,00
ES 3,5	SE 6	NZ 14	AT 180	IT 0,00
PT 4	LU 6	IE 15	FR 180	GR 0,00
IE 4,5	ES 7	BE 20	PT 180	CH 0,00
UK 6	FL 7	DE 20	IE 181	LU 0,00
BE 9,5	NO 8	NL 20	BE 182	NZ 0,00
DK 10,5	DK 8	CH 20	NO 190	AU 0,10
CA 11,5	DE 8	GR 20	FL 190	CA 0,10
NO 12	AU 8	PT 24	UK 195	AT 0,10
IT 13,5	FR 11	FL 24	DE 198	NO 0,20
DE 14	NL 12	LU 25	NL 200	PT 0,20
SE 16	IT 13	NO 25	DK 200	ES 0,20
AT 24	JP 14	DK 25	IT 200	IE 0,20
FR 36	AT 15	SE 25	LU 212	UK 0,40
FL 36	CA 22	UK 28		NL 0,40
	NZ 28	AU 28		JP 0,40
	USA 28	IT 28		BE 0,50
	IE 29	AT 30		US 0,60
	CH 30	FR 30		FR 0,70
	UK 33	ES 30		DE 1,00

Source: FEMMES Dataset (Appendix B).

Note: Raw data for one single incentive per policy field in ascending order.

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A first look at the level of certain single incentives across countries already indicates that there is considerable variation and that the incentives do not necessarily vary along traditional welfare state types. Table 4.1. shows the levels of five policies for all the countries for which data were available, one policy from each field of incentives respectively. For this illustration, the raw data of the actual policies have been used and the countries are arranged in order of size of the corresponding indicator. On the one hand, this illustration reveals that the cross-national differences of welfare state support for maternal employment are considerable. And since the countries are ranked according to the level of the respective incentive, it also reveals that, on the other hand, countries do mostly not group as existing typologies would expect them to. From the field of parental leave, the variation within the length of paid leave in months illustrates very well that the provision across countries is very different. There are countries which only provide six or less months of paid parental leave, such as the United States, the Netherlands or Portugal, and there are countries which provide between nine and sixteen months of parental leave, such as Canada, Germany or Sweden. At the upper limit, countries like Austria, France and Finland provide two years or more of paid parental leave and this loose ranking reveals that especially the group with medium paid leave provision combines countries from the traditional liberal, the social-democratic, the conservative and the Southern European welfare regime.

In the field of early childhood education and care, the variation in childcare costs for families, measured as the percentage of the average net family income, is similarly high. No country provides childcare facilities for free, but in five countries, families have to invest six percent or less of their income in childcare. Not surprisingly, Sweden is among these countries, but also Southern European welfare states like Portugal, Spain and Belgium. In the other Scandinavian countries, the childcare costs for families are slightly higher, just as they are for families in Germany and Australia. Families in countries like France, Japan and Austria have to invest between eleven and fifteen percent of their income in childcare. The selection of countries in which the costs are considerably higher, ranging between 22 and 33 percent of the average net family income, mostly consists of liberal welfare states.

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Within the policy field of employment law, many liberal welfare states provide fifteen or less vacation days per year. Among the countries which provide 20 to 24 vacation days per year are conservative welfare states like Belgium and the Netherlands, Southern European states like Greece and Portugal and Finland as a social democratic welfare state. The group of countries providing between 25 and 28 vacation days per year is similarly diverse, comprising states such as Denmark and Sweden, Italy, the United Kingdom and Australia. Finally, the group of countries with the maximum number of legally guaranteed vacation days per year contains Austria, France and Spain.

From the field of school policy, the indicator on the number of school days per year has been chosen to give an idea on cross-national variation. The indicator varies from less than 180 school days per year to more than 200. The group with the lowest number of school days per year consists of Greece, Spain and Sweden. The second group, providing 180 or more school days per year, consists of countries like France, Portugal and Ireland. The third group of countries, providing 190 or more school days per year, comprises two further Scandinavian countries (Norway and Finland), the United Kingdom and Germany. The final group of countries with at least 200 school days per year consists of countries like the Netherlands, Denmark and Italy.

In the policy field of taxation and allowances, the variation of the indicator on family tax breaks as a percentage of the GDP gives further insight into cross-national differences. The level of tax breaks generally ranges between no tax breaks at all and tax breaks which constitute one percent of the GDP. A considerable number of countries does not provide tax breaks at all, such as the majority of Scandinavian welfare states, but also Italy, Greece and New Zealand. The remaining Scandinavian welfare state, Norway, finds itself in the group of countries which provides tax breaks at the 0.10 to 0.20 percent level of the GDP in conjunction with liberal welfare states like Australia and Canada and Southern European welfare states like Portugal and Spain. The third group of countries provides tax breaks at the 0.40 to 0.50 percent level and combines the United Kingdom, the Netherlands, Japan and Belgium while the last group of countries with family tax breaks of at least 0.60 percent consists of the United States, France and Germany, Germany being the only country with tax breaks of one percent of the GDP.

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Cross-National Average Levels of Welfare State Incentives

Since the look at single indicators from the different policy fields already gives an idea of the extent and the way in which welfare states vary, the averages across all indicators of each policy field and countries will be examined in a next step.

Table 4.2. Variation of Average Levels of Welfare State Incentives across Countries and Policy Fields (2004 – 2010)

Country	Parental Leave (2007)	Childcare (2007 – 2008)	School Policy (2010)	Employment Law (2004)	Taxation and Allowances (2007)
Protestant Social Democratic Welfare States					
Norway	0,67	0,67	0,66	0,56	0,23
Sweden	0,77	0,88	0,71	0,80	0,13
Denmark	0,60	0,93	0,49	0,69	0,13
Finland	0,83	0,79	0,57	0,86	0,25
Protestant Liberal Welfare States					
UK	0,43	0,55	0,82	0,49	0,20
Australia	-	0,47	-	0,87	0,05
Canada	0,57	0,62	-	0,61	0,48
New Zealand	-	-	-	0,53	0,00
USA	0,00	0,47	-	0,50	0,80
Advanced Christian Democratic Welfare States					
Austria	0,72	0,31	0,68	0,79	0,05
Belgium	0,63	0,63	0,75	0,69	0,38
Germany	0,59	0,49	0,71	0,55	0,60
France	0,92	0,61	0,67	0,58	0,75
Luxembourg	-	-	1,00	-	0,00
Netherlands	0,60	0,59	0,76	0,66	0,58
Late Female Mobilization Welfare States					
Portugal	0,70	0,48	0,66	0,84	0,48
Spain	0,66	0,41	0,68	0,61	0,60
Italy	0,50	0,55	0,72	0,45	0,38
Greece	0,50	0,35	0,82	0,67	0,38
Ireland	0,42	0,50	0,74	0,59	0,10
Switzerland	-	0,35	-	0,54	0,25
Japan	-	0,52	-	0,33	0,70

Source: FEMMES Dataset (Appendix B).

Note: Countries are arranged according to the typology by Siaroff (1994). Averages for each policy field are generated from the values of the single indicators in each policy field.

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National averages have been calculated for those policy fields for which enough data on the single policy indicators were available to construct meaningful and comparable means. Here, the countries are ranked according to the afore-mentioned typology by Siaroff to facilitate the overview. Calling in mind which conclusions Siaroff made about the different degrees of support for female employment within the different welfare state types, the protestant social democratic countries are expected to explicitly support female labor force participation. Although the provided family welfare is considered minimal in the protestant liberal countries, they are also assumed to be characterized by rather distinct gender equality with regard to labor force participation. In turn, there should be no strong incentives for women to participate in the labor market in advanced Christian democratic states. In the welfare states that belong to the late female mobilization type, women's rights are generally expected to be low and the incentives for women to allocate some time to the labor market are expected to be low as well.

However, a closer look at the average levels of welfare state incentives across policy fields and countries reveals that these assumptions only partly hold when the explicit focus of analysis are labor supply incentives. On the one hand, the levels are mostly characterized by high intra-group variation and on the other hand, they do partly not correspond to the degree of support for female employment that would have been expected from previous research. In the protestant social democratic welfare states, the average level of welfare state incentives in the field of parental leave ranks from 0.60 in Denmark to 0.83 in Finland. The average levels are considerably lower in the protestant liberal countries, comprising the exceptional case of the United States with no parental leave provision at all and average levels of welfare state incentives of 0.43 in the United Kingdom and of 0.57 in Canada. In turn, the average levels of welfare state incentives in the field of parental leave across the Christian democratic countries is higher than in the protestant liberal countries, ranking from 0.59 in France to 0.92 in Germany which characterizes the latter country by an even higher incentive level than the protestant social democratic welfare states. The values for late female mobilization countries are, in turn, comparable with those in the protestant liberal welfare states.

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In the field of early childhood education and care, the extent of support seems to be more consistent with existing gender-sensitive typologies, but the in-group variation remains considerable. In the protestant social democratic countries, the average levels of welfare state incentives are comparably high, ranking from 0.67 in Norway to 0.93 in Denmark. In all other country groups, the maximum average level is lower than the minimum average level in the protestant social democratic countries. The average levels of welfare state incentives in the protestant liberal welfare states rank from 0.47 in Australia and the United States to 0.63 in Canada. Across the advanced Christian democratic countries, Belgium shares the maximum values with Canada, but with 0.31 in Austria, the minimum value is considerably lower than in the protestant liberal welfare states. Comparable values can be found in the late female mobilization countries which rank from 0.35 in Greece and Switzerland to a maximum of only 0.55 in Italy.

Turning to the field of school policy, the picture becomes again less consistent with existing gender-sensitive typologies. Here, the Scandinavian countries generally show lower average levels of welfare state incentives than in the policy fields of parental leave and early childhood education and care. The values rank between 0.49 in Denmark to 0.71 in Sweden. Since the data on school policy are only available for the European countries in the sample, it is difficult to formulate a statement about the situation in the liberal welfare states. However, it can be considered noteworthy that after Luxembourg, the United Kingdom, as the only liberal welfare state with information on school schedules in the sample, provides the second highest average level of welfare state incentives in the field of school policy along with Greece. This information already indicates that also in the advanced Christian democratic and late female mobilization welfare states, the average level is not as low as it would have been expected from previous research. Although the differences between the single countries are very distinct within the advanced Christian democratic welfare state type, the minimum value amounts to an average of 0.67 in Germany and the maximum value amounts to 1.00 in Luxembourg. The variation is a little less pronounced in the late female mobilization countries with a minimum average level of welfare state incentives in the field of school policy of 0.66 in Portugal and a maximum average level of 0.82 in Greece.

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In the field of employment law, the protestant social democratic, the protestant liberal and the advanced Christian democratic welfare states are very similar. The average level of incentives is very diverse in all three groups. Among the protestant social democratic welfare states, the values rank from 0.56 in Norway to 0.86 in Finland. Among the protestant liberal welfare states, the values rank from 0.49 in the United Kingdom to 0.87 in Australia and the variation is a shade less distinct in the advanced Christian democratic countries which rank from 0.55 in France to 0.79 in Austria. The situation is different among the late female mobilization countries in which the minimum average level of welfare state incentives in the field of employment law amounts to 0.33 in Japan and the maximum average level amounts to 0.84 in Portugal.

Lastly, even more pronounced variation and differences from conventional gender-sensitive welfare state comparisons can be observed within the field of allowances and taxation. Indeed, the differences among the protestant social democratic welfare states are less distinct, with an average ranging from 0.13 in Sweden and Norway to 0.25 in Finland. However, with these values, the Scandinavian countries are located at the lower end of the average incentive levels. Although some countries of the other welfare state types are also characterized by relatively low average incentive levels in this policy field, there are more cases providing a higher level of incentives in these groups than among the protestant social democratic welfare states. Among the liberal welfare states, New Zealand provides a minimum average level of welfare state incentives of 0.00 while the maximum average level amounts to 0.80 in the United States. Among the advanced Christian democratic countries, Austria provides a minimum average level of welfare state incentives of only 0.05 while the maximum average level amounts to 0.75 in France. A similar picture can be detected among the late female mobilization countries, with average levels of incentives ranging from 0.10 in Ireland to a maximum value of 0.70 in Japan.

These mere comparisons do not allow for concluding statements about the performance of welfare states and the appropriateness of conventional gender-sensitive welfare state typologies. However, they provide a first indication for what can be expected from a welfare state comparison which focuses on incentives for maternal labor supply. On the one hand, the average levels of welfare state incentives

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in the respective policy fields often differ considerably among countries that are supposed to belong to the same welfare state type. This has, for instance, been detected in the case of France and Germany with regard to parental leave provision, in the case of Norway and Denmark with regard to early childhood education and care or in the case of Denmark and Sweden in the field of school policy. Similar variation has, for instance, been observed for the average levels of incentives in the field of employment law in the case of Japan and Portugal which are both supposed to belong to the late female mobilization welfare state type and for the average levels of incentives in the field of taxation and benefits in the case of New Zealand and the United States. On the other hand, it is not only the variation within the traditional country groups, but also the general levels of performance that create doubts about the suitability of existing welfare state typologies. It cannot be detected that the protestant social democratic countries are always characterized by the highest level of incentives, followed by the protestant liberal, the advanced Christian democratic and the late female mobilization welfare state type. The only policy field that is more or less consistent with this assumption is the one of early childhood education and care. With regard to the remaining policy fields, the picture is far less consistent. For instance, the advanced Christian democratic countries are characterized by a level of incentives in the field of parental leave that is very comparable to the one of the protestant social democratic countries. In turn, the level of incentives in the field of school policy and taxation and benefits is lower than expected in the protestant social democratic countries.

Analysis of Variance

The foregoing presentation of the variation of a selection of welfare state incentives for maternal labor supply in their original state and of the variation of averages across policy fields has already shed some light on differences between countries and also on the potential inappropriateness of conventional country clusters. However, this variance can be analyzed in further detail to examine how much of the cross-national variance in the policy fields can actually be explained by the conventional country clusters. Table 4.3. shows the means of the country groups for every policy field and the results of an analysis of variance by means of single regressions of dummies for the country groups on the respective average level of welfare state incentives in the single policy fields.

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Table 4.3. Analysis of Variance for Conventional Country Clusters

Countries	Parental Leave		Childcare		School Schedules		Employment Law		Taxation and Allowances	
	Mean	β	Mean	β	Mean	β	Mean	β	Mean	β
Protestant Liberal Welfare States (Reference Group) Australia Canada New Zealand UK USA	.33		.53		.82		.6		.31	
Advanced Christian Democratic Welfare States Austria Belgium Germany France Luxembourg Netherlands	.69	.359*	.52	-.003	.76	-.058	.65	.054	.39	.087
Protestant Social Democratic Welfare States Sweden Norway Denmark Finland	.72	.384***	.82	.29***	.61	-.212*	.73	.127	.18	-.121
Late Female Mobilization Welfare States Portugal Spain Italy Greece Ireland Switzerland Japan	.56	.223**	.45	-.076	.72	-.096	.57	-.024	.41	.107
Constant	.333***		.527***		.82***		.6***		.306**	
R²	.485		.687		.373		.16		.116	

Source: FEMMES Dataset (Appendix B).

Note: Countries are arranged according to the typology by Siaroff (1994). Averages for each policy field are generated from the values of the single indicators in each policy field.

*** = $P \leq 0.01$, ** = $P \leq 0.05$, * = $P \leq 0.10$

The welfare state typology by Siaroff (1994) suggests four groups of countries, leading to the creation of four country group dummies of which the first group, i.e. the liberal or protestant liberal welfare states (UK, USA, New Zealand, Australia and Canada), is used as a reference category. The mean of the reference group is the regression constant while the coefficients of the other country groups indicate the difference of their mean compared to the mean of the reference group. The last row of table 4.3. shows the amount of explained variance for the single regressions. These values show indeed that the conventional country clusters are not completely inappropriate to explain the variance of welfare state incentives for maternal labor supply across countries. An R^2 of 0.49 for the field of parental leave and an R^2 of 0.69 for the field of childcare can by all means be considered a convincing result and an argument in favor of conventional gender-sensitive typologies. However, the results for the fields of employment law and taxation and allowances are less powerful. In combination with the foregoing descriptive comparisons of countries' performances which have also shown that different country clusters might actually be more adequate to explain the cross-national variance of welfare state incentives, there is sufficient reason to examine if a different and potentially more appropriate classification of countries can be established.

4.1.2. Determination of New Country Clusters

Cluster Analysis

While the first descriptive results in the foregoing section have already given some indication on cross-national differences and similarities of welfare state incentives for maternal labor supply, this section presents the results of a cluster analysis that has been run for the sample of 22 countries and across all policy fields⁶. As described in the methodological subchapter, cluster analysis is a method of numerical classification of cases and pattern recognition and requires the preliminary computation of a dissimilarity matrix that takes all the variables into account. The obtained distances between the single countries give some first indication about

⁶ The indicators for school policy are only available for the 15 European countries in the sample. Therefore, statements about the similarities or dissimilarities with regard to this policy field cannot be made for the non-European states. However, the Gower Dissimilarity Coefficient allows for missing values on single variables which made it possible to include the non-European states in the analysis.

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possible country clusters. Since the dataset contains binary and continuous variables, the Gower dissimilarity coefficient is the dissimilarity measure of choice which has the further advantage of not excluding observations with missing values on single variables. The matrix is shown in figure 4.1. and a closer look at the degree of dissimilarity between single pairs of countries reveals a potential underlying structure. Higher numbers imply higher dissimilarity and it can be seen that, for instance, Denmark and Sweden and are comparably little dissimilar. The same applies to Portugal and Spain and to the United Kingdom and New Zealand. By contrast, the United States and countries like Finland, France and Sweden show a comparably high degree of dissimilarity.

Figure 4.1. Distances between the Countries across all Policy Indicators (Gower Dissimilarity Coefficient)

	AU	AT	BE	CA	DK	FI	FR	DE	GR	IE	IT	JP	LU	NL	NZ	NO	PT	ES	SE	CH	UK	US
AU	0																					
AT	.221	0																				
BE	.182	.289	0																			
CA	.334	.293	.212	0																		
DK	.401	.445	.221	.286	0																	
FI	.239	.406	.295	.391	.242	0																
FR	.432	.407	.302	.427	.345	.308	0															
DE	.333	.298	.296	.290	.464	.389	.374	0														
GR	.183	.399	.269	.285	.382	.363	.410	.332	0													
IE	.284	.263	.308	.256	.436	.451	.512	.222	.334	0												
IT	.323	.337	.234	.251	.397	.402	.399	.269	.337	.351	0											
JP	.487	.437	.399	.351	.447	.473	.444	.363	.323	.411	.302	0										
LU	.129	.335	.339	.484	.253	.356	.470	.454	.381	.452	.352	.522	0									
NL	.285	.381	.277	.255	.377	.348	.371	.238	.198	.270	.338	.251	.355	0								
NZ	.342	.353	.340	.257	.350	.379	.592	.340	.341	.208	.280	.408	.324	.298	0							
NO	.264	.290	.287	.299	.322	.327	.393	.295	.422	.345	.309	.366	.261	.343	.361	0						
PT	.223	.294	.252	.304	.418	.311	.349	.247	.237	.296	.363	.479	.379	.195	.454	.291	0					
ES	.311	.325	.262	.339	.404	.359	.338	.246	.263	.307	.264	.347	.550	.244	.223	.299	.160	0				
SE	.273	.387	.209	.290	.161	.209	.357	.407	.311	.362	.390	.499	.348	.343	.295	.305	.319	.339	0			
CH	.296	.318	.332	.311	.487	.343	.383	.248	.239	.219	.319	.3839	.407	.243	.303	.421	.342	.311	.365	0		
UK	.347	.388	.319	.284	.379	.425	.415	.297	.351	.264	.315	.320	.266	.217	.187	.387	.340	.281	.444	.363	0	
US	.373	.466	.386	.336	.476	.561	.631	.389	.371	.324	.451	.226	.664	.335	.372	.493	.443	.423	.555	.423	.311	0

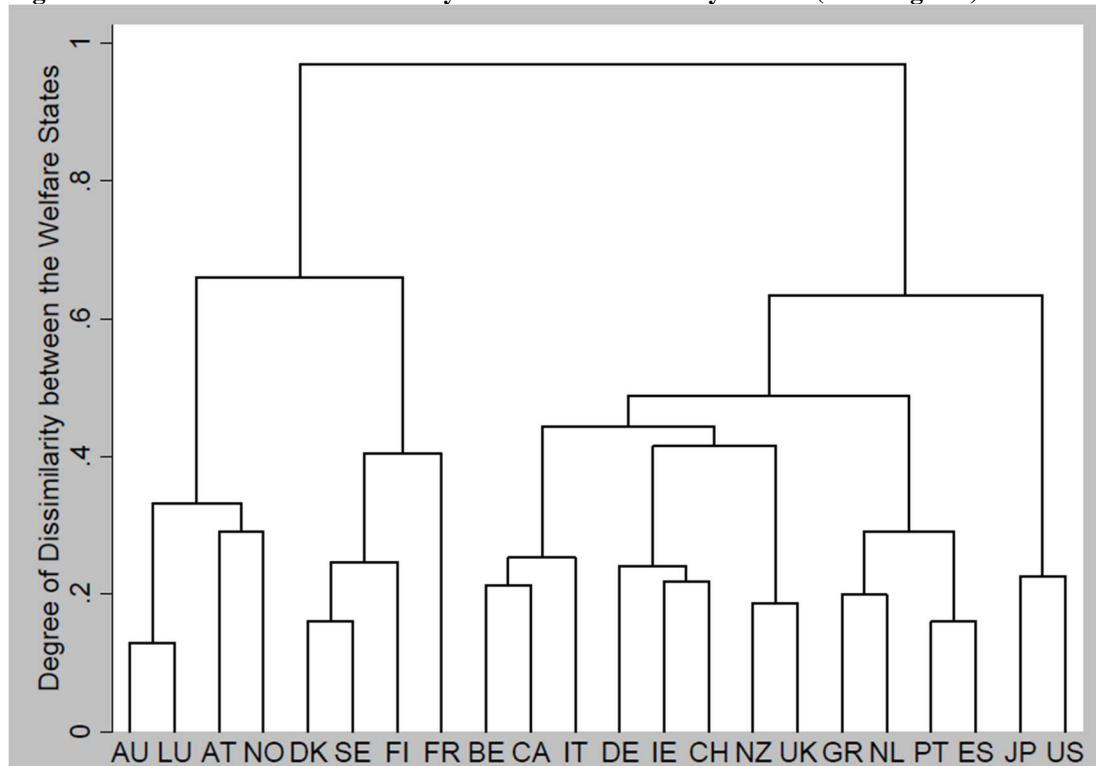
Source: FEMMES Dataset (Appendix B), own calculations.

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However, the consideration of the mere distances appears to be an insufficient and ambiguous way to determine which countries can be grouped together according to their welfare state incentives for maternal labor supply. When hierarchical cluster analysis is applied to the dissimilarity matrix, it is possible to obtain a more conclusive picture of the groups of countries that show the least degree of dissimilarity. The underlying principle of cluster analyses is the achievement of maximal homogeneity within the single clusters and the achievement of maximal heterogeneity between the single clusters (cp. Wiedenbeck / Züll 2010). Within the method of agglomerative hierarchical clustering, the procedure of choice is the Ward's Algorithm which groups the observations that only minimally increase the variance within one cluster and which also tends to produce more stable results. Hierarchical clustering begins with as many clusters as there are countries and gradually combines the cases that show the smallest dissimilarities until those countries find themselves all in one cluster. The dendrogram, which is the standard tree diagram of cluster analysis, is displayed in figure 4.2. and shows this process of aggregation. The determination of the number of clusters that represents the structure of the data best is often considered being a critical issue. The lengths of the vertical lines which link the clusters show how dissimilar the merged clusters are. Consequently, lengthier lines indicate greater dissimilarity (cp. Powell / Barrientos 2004).

In the case of the present analysis, the structure of the data is best captured by six country clusters because after the value of 0.4 in the vertical scale on the left, further mergers lead to very dissimilar clusters. These six clusters group countries that, in the majority of the cases, seem to be very different from what is known from traditional welfare state typologies. However, the dendrogram only indicates the degree of dissimilarity and does not give any indication about the extent of welfare incentives or their emphases of certain policy fields. Clearly, it appears to be less surprising to see France grouped together with Denmark, Sweden and Finland or to detect a cluster which contains Greece, Portugal and Spain. However, most of the other country groups consist of cases that would normally not be expected to be comparably little dissimilar.

Figure 4.2. Results of the Cluster Analysis for the Dissimilarity Matrix (Dendrogram)



Source: FEMMES Dataset (Appendix B), own calculations.

Note: The lengths of the vertical lines indicate the degree of dissimilarity. Shorter lines indicate less dissimilarity.

Therefore, there is a need to examine what it is exactly that makes the countries within the clusters less dissimilar from each other than from the countries in the other clusters. A closer look at the raw macro data reveals that the countries in the single clusters are indeed characterized by different degrees and different emphases of welfare state incentives for maternal labor supply. An overview of the structure of the different country clusters and their ranking according to their average levels of welfare state incentives can be found in table 4.4. The table also shows that the variation with regard to school policy is rather narrow and on a very comparable level in every cluster and that the last two country clusters put considerably less effort on the field of employment-related measures than the other country groups. Furthermore, it is noticeable that many country groups are characterized by a very low level of incentives in the field of taxation and allowances, a field in which the sixth country cluster seems to be an irregular exception considering its overall level of incentives. Since table 4.4. only displays averages, a closer look at the raw data gives more information on the importance of single policy measures in each cluster,

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on the extent of similarity between the countries in the clusters and on the level of welfare state incentives for maternal labor supply.

Table 4.4. Structure of the Six Country Clusters

Cluster	Mean across all Policy Fields and Countries in the Cluster	Policy Fields	Means for the Single Policy Fields across all Countries in the Cluster
Cluster 1 France Sweden Denmark Finland	0.64	Parental Leave	0.78
		Childcare	0.80
		School Policy	0.61
		Employment Law	0.73
		Taxation and Allowances	0.28
Cluster 2 Netherlands Portugal Spain Greece	0.60	Parental Leave	0.62
		Childcare	0.45
		School Policy	0.73
		Employment Law	0.69
		Taxation and Allowances	0.51
Cluster 3 Belgium Italy Canada	0.58	Parental Leave	0.57
		Childcare	0.60
		School Policy	0.73
		Employment Law	0.58
		Taxation and Allowances	0.41
Cluster 4 Australia Luxembourg Austria Norway	0.55	Parental Leave	0.69
		Childcare	0.48
		School Policy	0.78
		Employment Law	0.74
		Taxation and Allowances	0.08
Cluster 5 Germany Ireland UK New Zealand Switzerland	0.50	Parental Leave	0.48
		Childcare	0.47
		School Policy	0.76
		Employment Law	0.54
		Taxation and Allowances	0.26
Cluster 6 Japan USA	0.41	Parental Leave	0
		Childcare	0.49
		School Policy	
		Employment Law	0.41
		Taxation and Allowances	0.75

Source: FEMMES Dataset (Appendix B), own calculations.

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The first cluster (Denmark, Sweden, Finland and France) consists of countries which provide the highest level of welfare state incentives for maternal labor supply and the comparison of mean values has already shown that they are distinguished from all the other country clusters by their particularly high effort in the field of public childcare. These countries offer legal entitlements to childcare, they provide full day care; they are characterized by low private and high public spending and by a comparably high coverage for both age groups and favorable child-staff ratios, especially for young children below the age of three. Apart from that, the level of incentives is comparably high in the two policy fields of employment law and parental leave. The countries provide full maternity and paternity leave and they pay the full length of the leave, even though not all the countries provide full sick child leave. The countries are characterized by high part-time benefits protection, medium to high first and second overtime premiums, high minimum vacation and a medium to low length of the workweek. With Denmark and France, this cluster encloses the two countries with the lowest number of maximum working hours per week. The level of welfare state incentives in the other policy fields is, however, comparably low. The school starting age is rather late and the length of school week and school year is mostly shorter than in the other country clusters. The level of cash benefits is rather low which is considered an incentive, but the level of tax breaks is low as well.

Greece, Portugal, Spain and the Netherlands compose the second country cluster which is characterized by a lower average level of welfare state incentives for maternal labor supply. Compared to the first country cluster, its average level of incentives is considerably lower in the field of parental leave and childcare, but it is similar or even higher in the three remaining policy fields. The countries provide maternity, paternity and sick child leave, but only a relatively low share of the leave is paid and there is no full legal entitlement public childcare. Furthermore, the childcare facilities mostly offer part-time care and the public childcare spending is low as well. However, the countries provide high part-time benefits and contract termination protection, a comparably high number of paid holidays, a medium number of maximum working hours per week and medium to high minimum vacation. While the level of cash benefits is low (which is an incentive for labor supply), the tax breaks range at a medium level. Finally the school starting age is

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relatively early and the length of school week and school year range at a medium level.

The third cluster (Belgium, Italy and Canada) is, for the most part, characterized by a slightly lower average level of welfare state incentives than the foregoing cluster. The countries provide fully paid maternity leave, but at low length. There is no full legal entitlement to public childcare and the public childcare expenditures are rather low, although the coverage for children between the age of three and five is comparably high. The school starting age is rather late, but the length of the school week for children in primary education is high, while it is only at a medium level for older children and with regard to the length of the school year. The part-time contract termination protection is high, the standard workweek is at medium length and the provided minimum vacation is partly low. Just as in the second country cluster, family cash benefits are low, but family tax breaks are low as well.

In the fourth country cluster (Australia, Luxembourg, Austria and Norway), the general level of welfare state incentives for maternal labor supply is again slightly lower. These countries focus on parental leave and employment law and are characterized by, for instance, high part-time contract termination protection, a high first overtime premium, high minimum vacation and a medium length of workweek, by full maternity leave and by full sick child leave, although all four countries do not provide paternity leave arrangements. Apart from that, there is no legal entitlement for childcare and only low to medium public childcare spending, although private childcare costs range at a medium level. However, childcare by means of school schedules is higher than in any other country cluster. The lowest level of welfare state incentives for maternal labor supply can be found with regard to family allowances and taxation, since the level of family cash benefits is comparably high and the level of tax breaks is comparably low.

The fifth country cluster (Germany, Ireland, the United Kingdom, New Zealand and Switzerland) can certainly be considered as a group of countries which only provides low incentives for maternal labor supply with no more than a slight emphasis on the field of school policy. Full maternity leave entitlements are not available in all countries in the cluster, there is almost no paternity leave and only a relatively low

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share of the leave is paid, although most of the countries provide the possibility of sick child leave. There is no full legal entitlement to childcare and the care arrangements are mostly on a half day basis. The private childcare costs are high and the public spending for childcare is low, just as the childcare coverage for children below the age of three. Although the countries provide high part-time benefits and contract termination protection, they are characterized by some of the longest work weeks and comparably low minimum vacation. Furthermore, they mostly offer comparably high and therefore disincentive cash benefits in combination with a comparably low level of tax breaks.

The sixth and last country cluster (United States and Japan) is, just like the fifth country cluster, characterized by a rather low level of welfare state incentives for maternal labor supply. These two countries focus on taxation and allowances and are characterized by a considerable distance to the other country clusters. Parental leave entitlements are limited, if not non-existent and there is no legal entitlement to public childcare and only low public spending on early childhood education and care. There is high part-time contract termination protection, but no paid holidays, a medium length of the workweek and a low level of minimum vacation. However, the level of cash benefits is low while the tax breaks range at a medium level.

Analysis of Variance

After having run an analysis of variance for the conventional country clusters in the foregoing subchapter, this method of analysis will be repeated to determine if the country groups established by the cluster analysis are better suited to explain the cross-national variation of welfare state incentives for maternal labor supply. Table 4.5. shows the means of the new country groups for every policy field and the results of the analysis of variance by means of single regressions of dummies for the country groups on the respective average level of welfare state incentives in the single policy fields. The cluster analysis suggested six groups of countries, leading to the creation of six country group dummies of which the group consisting of France, Denmark, Sweden and Finland is used as a reference category. Again, the mean of the reference group is the regression constant while the coefficients of the other country groups indicate the difference of their mean compared to the mean of the reference group. A comparison of the amount of explained variance of these regressions to the results of

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the analysis of variance for the conventional country clusters reveals that for three of the five policy fields, the share of explained variance is considerably higher when the countries are grouped according to the established clusters. The amount of explained variance in the field of parental leave doubled and it increases more than threefold in the fields of employment law and taxation and allowances.

Table 4.5. Analysis of Variance for New Country Clusters

Countries	Parental Leave		Childcare		School Schedules		Employment Law		Taxation and Allowances	
	Mean	β	Mean	β	Mean	β	Mean	β	Mean	β
Group 1 (Reference Group)										
Australia	.69		.48		.78		.74		.08	
Austria										
Luxembourg										
Norway										
Group 2										
France										
Sweden	.78	.085	.80	.319**	.61	-.17*	.73	-.007	.28	.195
Denmark										
Finland										
Group 3										
Belgium										
Italy	.57	-.128	.6	.117	.73	-.045	.58	-.157*	.41	.331**
Canada										
Group 4										
Germany										
Ireland										
Switzerland	.48	-.215**	.47	-.011	.76	-.023	.54	-.2**	.26	.177
New Zealand										
UK										
Group 5										
Portugal										
Spain	.62	-.08	.45	-.028	.73	-.05	.69	-.045	.51	.427***
Greece										
Netherlands										
Group 6										
USA	0	-.695***	.49	.012	-	-	.41	-.325**	.75	.667***
Japan										
Constant	.695***		.483***		.6***		.74***		.082	
R²	.841		.653		.336		.57		.583	

Source: FEMMES Dataset (Appendix B), own calculations.

Note: Countries are arranged according to the clusters established by the foregoing analysis. Averages for each policy field are generated from the values of the single indicators in each policy field.

*** = $P \leq 0.01$, ** = $P \leq 0.05$, * = $P \leq 0.10$

Even though the amount of explained variance remain approximately constant in the field of childcare and is slightly lower in the field of school policy, it is reasonable to conclude that the here established country clusters prove to be more appropriate to explain the cross-national variance of incentives for maternal labor supply than conventional welfare state typologies.

4.1.3. In-Depth Country Studies for Norway, Canada and Germany

Although the comparison of welfare state incentives for maternal labor supply across countries can be very insightful and although explorative cluster analyses can give an indication about how countries might have to be classified, it hardly reveals why the emerging country clusters are different from conventional and partly also from gender-sensitive welfare state typologies. A detailed review for every country included in the present study would go beyond its scope, but detailed reviews for a selection of countries which do not display the expected performance will give some indication of underlying causes. By means of the cases of Norway, Canada and Germany, the following subsections will show in more detail why these countries differ from other welfare state classifications. What makes Norway different from the other social-democratic welfare states? Why does Canada group with two more conservative welfare states and not with other liberal welfare states? And what classifies Germany with a number of liberal and so-called late female mobilization welfare states? The subsequent country studies intend to provide some insight into these questions by tracing some country-specific developments and characteristics that make them different from their traditional welfare state families.

Norway

It is true that with regard to many aspects of the political system and of the social policy orientation, Norway closely resembles the other social-democratic welfare states. Just like Sweden and Denmark, the country is a monarchy with a parliamentary government. The general social policy orientation is based on egalitarianism and universalism, i.e. the welfare state mainly provides equal benefits for all citizens or residents and welfare services are mainly financed through high taxation of incomes and goods (Bø 1993). However, a closer look at the data on

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welfare state incentives for maternal labor supply reveals that Norway differs in some decisive respects. This finding is especially important since even gender-sensitive welfare state typologies generally assume that all social-democratic welfare states do not only provide universal and equal social benefits for all their citizens, but also are the most supportive states with regard to services for families and with regard to female and maternal employment (cp. Siaroff 1994). In the case of Norway, the most significant deviations can be found in the policy fields of parental leave and public childcare. For instance, Norway is the only Scandinavian country that does not provide full paternity leave. That means that although there is a legal entitlement, the leave for fathers is unpaid. Furthermore, although Norway offers the maximum number of 36 months of general parental leave, only a third of this period is paid (cp. Moss and Wall 2007: 66).

With regard to early childhood education and care, Norway bears resemblances to the other social-democratic countries in several respects. The childcare institutions predominantly provide full-time care and the private childcare costs do not exceed eight percent of the average family income. The childcare coverage for children below the age of three and for children aged three to five is just about as high as or even slightly higher than in other Scandinavian countries. However, Norway is the only Scandinavian country that does not provide a legal entitlement to infant care, kindergarten or pre-school and that does not spend more than one percent of the gross domestic product on the public provision of childcare. This is considerably less than the amount spent by the other social-democratic welfare states whose childcare expenditures equal or exceed 1.3 percent of the gross domestic product. Deviations can also be found in the field of employment law where Norway does not provide a protection of part-time employees with regard to benefits that is as extensive as it is in the other social-democratic welfare states.

In turn and not surprisingly with regard to the findings of the cluster analysis, Norway shares a range of characteristics with the countries that the cluster analysis performed in the present study has identified as least dissimilar – Australia, Austria and Luxembourg. Generally, this cluster has been identified as one that provides a level of welfare state incentives towards maternal labor supply that is lower than in the cluster comprising the other Scandinavian welfare states. Just like Austria,

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Norway provides full maternity and sick child leave. Australia, Austria and Norway offer full part-time contract termination protection and high premiums for the first set of overtime hours and in all three countries, the maximum number of working hours per week amounts to 40. The three other countries in the cluster spend about the same or less on early childhood education and care and the family tax breaks as a percentage of the gross domestic product do not exceed 0.20 percent in any of the countries.

Apparently, Norway shares a considerable amount of characteristics with these welfare states when the focus is on welfare state incentives for maternal labor supply. No matter if conventional or gender-sensitive welfare state typologies are taken as a basis, the countries which cluster with Norway do normally all belong to different welfare state types. Norway's deviations from other social-democratic welfare states with regard to welfare state incentives for maternal employment and its similarities with Australia, Austria and Luxembourg lead to the question which country-specific developments and characteristics make Norway more dissimilar from its traditional welfare state family than from the country cluster identified in the present study.

Existing research has pointed out that there are some Norway-specific developments that make the country different from its Scandinavian counterparts and that make its effort with regard to welfare state incentives for maternal labor supply less distinct. A study by Anttonen and Sipilä (1996) deals with the division of responsibilities between the state and the family with regard to the care for children below the age of three and for the elderly population. The authors establish a typology of so-called caring regimes that separates Norway from the other Scandinavian welfare states. While Sweden, Denmark and Finland cluster together and represent welfare states which offer extensive public care for children below the age of three and for the elderly population, Norway is assigned to one country group with Great Britain and the Netherlands – countries in which public services for the elderly are equally comprehensive, but in which the availability of public services for early childhood care is insufficient (Anttonen and Sipilä 1996: 93).

Other studies confirm that Norway seems to be the only Scandinavian country in which, for a long time, the demand for public childcare significantly exceeded the

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supply. Henriksen and Holter (1978) argue that in general, Norwegian government intervention in family issues has been lagging behind actual changes in family life. In Sweden, for instance, the 1930s had been the decade of reforms in the field of family policy while these kinds of innovations did not start in Norway before the postwar period. This can partly be explained by the fact that until the 1960s, family relations in Norway were considered comparably stable and that divorce rates and the number of children born out of wedlock had been relatively low. During the 1960s, these patterns started to change and they were accompanied by an increase in female labor force participation. However, it was not until the 1970s that the Norwegian government started to adjust its family policy to the emerging changes.

The observations on Norway as a welfare state that is lagging behind with regard to welfare state incentives for maternal labor supply have also been discussed by Bø (1993: 392) who explains that the connection between the entry of Norwegian women and mothers into the labor force – which has taken place slightly later than in Denmark or Sweden - and the public provision of early childhood education and care has not been as explicit in Norway as it has been in other Scandinavian countries. In Norway, the expansion of childcare services has not been a concomitant development to female labor force participation, a condition that has led to a high demand in combination with a level of supply that was lagging behind. And even though public childcare provision has improved during the last years, its expansion has still been slower than in other social-democratic countries. Bø also refers to the works of Leira (1987) who concludes that there are three reasons for Norway being a public childcare laggard and these reasons are of course related to each other. Having a predominantly agricultural economy, the relatively late industrialization and urbanization of Norway have resulted in public childcare services which mainly cover urban areas, but not the rural parts of the country. The second reason refers to the afore-mentioned increase in female and maternal labor force participation which has taken place at a later stage than in other Scandinavian countries. Third, and even though gender equality and women's rights do play an important role in today's Norwegian politics, traditions with regard to the importance of the family in children's early socialization can also have influenced the slower expansion of public childcare services.

This is in line with the works of Henriksen and Holter who suppose that even if Norwegian politics started to consider family matters also being of public concern, family policy has not necessarily been focusing on the situation of women and mothers. What had indeed become a matter of public concern very early were the legal protection of women within marriages, divorce rights and mother-child related health issues, but for a long time, family policy had not been directed towards maternal labor force participation and towards enabling mothers to maintain autonomous households. To the contrary, "[t]he view that children need their mothers at home was strongly advocated in most political parties, also within the Labor Party [...]" (Henriksen and Holter 1978: 57). This view is supported by a study by Crompton and Harris (1997) who find that although Norway is characterized by more liberal attitudes towards gender roles and relations, the country turns out to be more conservative with regard to the effect of women's employment on family life (ibid: 186).

Further studies dealing with the similarities between Norway and Australia, two countries which have also been assigned to the same cluster in the present analysis, seem to support this assumption. Eriksen and Lindsay (1999) compare unmarried cohabitation and family policy across the two countries and find large-scale similarities despite the general assumption that Norway is supposed to belong to the social-democratic welfare regime while Australia is supposed to belong to the liberal welfare regime. They argue that both countries have tended towards rather conservative attitudes towards the family. The afore-mentioned observations about the rather ambiguous opinions about gender roles and female employment in Norway also apply to Australia, although the political discourse has been even slightly more conservative in the latter country. Eriksen and Lindsay describe that Norwegian and Australian early family policies have been very similar in diverse respects. In the 1950s and 1960s, family policy focused on the traditional nuclear family, favoring one-breadwinner families by means of tax rules in Norway and by means of family wages and lower wages for women in Australia. Childcare facilities were underdeveloped in both countries. Slight differences can be found in the field of support for unmarried mothers which has been provided in Norway, but not in Australia. Party rhetoric points to further similarities, showing that comparable to Norway (see above), "[...] the [Australian] conservative political parties have tended

to emphasize traditional family values in their policy-making [...]" (ibid: 92). Furthermore, both countries provide or have provided a form of allowance paid to mothers who stay at home to take care of their children. In Australia, this measure had been introduced by the conservative coalition government elected in 1996 which has also implemented cuts in the program of childcare subsidies introduced by the former Labor government. In Norway, a similar allowance for mothers who stay at home had been introduced by the center government elected in 1997.

Canada

The cluster analysis that has been performed in the present study groups Canada with Italy and Belgium and this cluster has been considered the one with the truly moderate level of welfare state incentives for maternal labor supply. At first sight, this combination of countries seems unusual, since both conventional and gender-sensitive typologies are far from assuming that these countries should cluster together. While conventional welfare state research assumes Canada to be a liberal welfare state with only residual and means-tested social benefits, gender-sensitive typologies assign Canada to the type of welfare state which does indeed provide only minimal family welfare, but is concerned about gender equality with regard to labor force participation. In turn, Belgium and Italy are considered being more conservative or late female mobilization welfare states respectively, depending on if the conventional or a gender-sensitive perspective on welfare state performance is applied. However, both lines of research assume Belgium and Italy to be welfare states in which the family embodies the main pillar of welfare provision and in which incentives for female and maternal employment are not developed very strongly.

Again, a closer look at the raw data reveals in which respect Canada is very different from its conventional welfare state family and in which respect it is very similar to Belgium and Italy. Compared to the other (protestant) liberal countries, such as the United Kingdom, Australia, the United States and New Zealand, Canada generally provides a higher level of incentives for maternal labor supply. The level of family cash benefits is comparably low which is considered being an incentive for labor force participation. Furthermore, Canada provides better childcare quality than most of its liberal counterparts, especially when the child-staff ratio in kindergartens and preschools is considered. Also, Canada is the only liberal welfare state that offers full

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maternity leave provision whose length of twelve months is almost fully paid. It is especially these last two characteristics that Canada shares with Italy and Belgium. These two countries also offer full maternity leave entitlements in combination with financing the full leave period which adds up to between nine and thirteen months. Consequently, the length of leave is also something that these three countries have in common. Further similarities can be established in the field of employment law. Just like Belgium and Italy, Canada provides full part-time contract termination protection, no premium for the second set of overtime hours and a standard workweek of 40 hours.

Finding similarities between the (protestant) liberal Canada and the conservative Belgium and Italy can surprise, especially when the historic development of Canada as a country is considered and when the existing literature on welfare state comparisons is taken into consideration. In this respect, Canada is much closer to its usual welfare state counterparts than it is to Italy and Belgium. Historically, Canada is a country whose current population emerged due to large immigration movements from Europe, mainly from the United Kingdom and France. Between 1951 and 1971, a quarter of the population growth could still be assigned to immigration (Armitage 1978). These immigration movements also involved large-scale contact and conflict with indigenous people and this characteristic of state development is certainly shared with many other liberal nations, such as the United States and Australia. Furthermore, Canada is considered a country that "[...] has felt regional, linguistic, intergovernmental, and cultural tensions [...] and [...] competing pressures of centripetal and centrifugal force [...]" (Pence 1993: 61). In contrast to other immigrant countries, Canada has been considered a nation "[...] that embraced the idea of a multicultural mosaic rather than the idea of a melting pot of different cultures [...]" and until the 1970s, it has not been possible to actually "[...] class one's ethnic origin as "Canadian" in the Canadian census [...]" (Armitage 1978: 373).

After the end of World War II, Canada had been one of the few developed countries which had not been directly affected by the war and which experienced a period of economic growth and prosperity. This era has also been the heyday of the traditional male-breadwinner family and until then, family policy had not been a major field of

interest of Canadian social policy. But just like in many other Western countries, these structures began to change by the end of the 1960s and "[l]iving as part of the traditional two-parent nuclear family with children [...]" became part of the life of a considerably smaller share of the Canadian population (ibid: 371). Since then, the labor force participation of women and mothers increased considerably, families became less stable and, comparable to the developments in Norway, "[t]he welfare oriented childcare system "[...] was not able to keep up with the greatly enhanced demand for child care spaces [...]" (Pence 1993: 62 et seqq.). Despite the increasing acknowledgment of this situation by the Canadian governments from the 1970s through to the 1990s, there had not been any federal legislation directly dealing with the issue of public childcare by the turn of the century. Also due to the highly provincial or regional character of the country, Canada is mainly characterized by a "[...] collection of dissimilar policies and programs [...]" (ibid: 79).

Generally, it seems that it is more the dissimilarities to the other liberal welfare states that lead Canada to be classified differently from Australia, New Zealand, the United Kingdom and the United States. A study by O'Connor, Orloff and Shaver (1999) points out that even though in Canada, the level of social spending and the character of social programs appears to be similar to the situation in the United States, Canada has also been more successful in fighting poverty among families with children and, most importantly, the country has established a universal health care system. Furthermore, Canada seems to pursue a less liberal approach in the sense that public intervention in social issues is not necessarily associated with negative connotations. Canada offers paid maternity and parental leave and despite the problematic situation in the field of childcare outlined above, Canada has been less reluctant in financially supporting non-profit childcare providers (O'Connor et al. 1999: 5 et seqq.). Even though in Canada, the private responsibility for setting up childcare arrangements is still very high and the use of informal or non-licensed care considerably exceeds the use of formal and licensed services, Canada has had a National Childcare Strategy that planned to improve the tax relief for childcare and to create new childcare spaces in cooperation with the provinces. However, it cannot be ignored that not every element of the strategy has been implemented and that in the end, the goals had to give way to other social policy concerns, such as child health, child abuse and child poverty (ibid: 81 et seqq.).

Nevertheless, the entire Canadian social security system appears to be more similar to the systems established in Europe than to the system established in other liberal countries, such as the United States. Despite cutbacks and retrenchment, this still holds true for the arrangements in the fields of family allowances, retirement plans and health care (ibid: 128). Furthermore, single mothers in Canada seem to be better off in terms of income inequality and poverty and their caregiving work was supported under the Canada Assistance Plan. The Canada Assistance Plan had been replaced by the in some respects less generous Canada Health and Social Transfer in 1995, but support for single parents has mostly continued in the context of provincial welfare programs (ibid: 132 et seqq.). And even though the general level of the services for the working population with caring responsibilities is lower than in some European countries, "[...] the range of support services for labor market participants is consistent with the [Canadian] policy orientation towards gender sameness in the labor market [...]" (ibid: 193).

A study by Gauthier (1996) is in line with the observations made by O'Connor et al. Her comparative analysis of family policies across a range of industrialized nations finds that the number of task forces, initiatives and committees which have been set up in by Canadian governments to deal with the public childcare question are rather unusual for a country belonging to the liberal welfare state family. Additionally, there are large-scale similarities between the pro-natalist orientation and policy of the francophone part of Canada and the pro-natalist programs implemented in France which is, again, underlining the similarities with European welfare states and the differences from other liberal welfare states.

Germany

No matter if conventional or gender-sensitive typologies are applied, Germany is almost always the ideal-typical case of the conservative, Christian-democratic state in which the family is considered the central provider of welfare and in which welfare state incentives for female and maternal labor supply are not very pronounced. However, the cluster analysis performed in the present study does not group Germany with its usual conservative counterparts, but with countries which are usually assigned to (protestant) liberal and late female mobilization regimes, such as the United Kingdom, Ireland and New Zealand. A closer look at the data show

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that Germany does indeed share more characteristics with the (protestant) liberal and late female mobilization states than with its conventional conservative counterparts. Unlike other conservative welfare states, Germany is characterized by a very high level of family tax breaks of one percent of the gross domestic product. This is, however, the almost only case in which Germany provides a higher level of welfare state incentives for maternal labor supply than the other countries in its traditional welfare state family. Apart from that, Germany provides the lowest level of public spending for early childhood education and care of only 0.40 percent of the gross domestic product. Furthermore, in Germany, the standard work week is longer than in any other conservative welfare state with a legal maximum of 48 hours per week. In addition, there are no paternity leave arrangements at the time point that has been chosen for data collection and with 14 paid months out of 36 total months, the share of paid leave is lower than in any other conservative welfare states.

In turn, it is mostly these characteristics which unify Germany with the countries in the cluster identified in the present analysis. The countries in this cluster only provide a limited legal entitlement to childcare and offer mostly half day care services. Furthermore, they are all characterized by low levels of public spending for early childhood education and care and they do all provide only limited paid shares of the total period of parental leave. Germany, Ireland and the United Kingdom only pay about a third of the period of parental leave – 14 out of 36 months in Germany, 4.5 out of 14 months in Ireland and 6 out of 18 months in the United Kingdom. The countries are further associated with each other by the level of welfare state incentives in the policy field employment law. While they do all provide full part-time benefits and part-time contracts termination protection, the number of paid holidays per year is at a medium level and there is no premium for the second set of overtime hours.

Generally, the former cluster analysis has shown that the country cluster that Germany belongs to is one that only provides a low level of incentives for maternal labor supply with no more than a slight upward tendency. Considering with which countries Germany clusters, there are two possible logics behind this classification. Germany is clustering with countries which are usually assigned either to late female mobilization welfare states or to (protestant) liberal welfare states. Applying the late

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female mobilization logic in combination with the Christian-democratic background of the country, it could be assumed that it is the high significance of the family as a welfare provider and as the main institution in charge of early childhood socialization that leads to a limited provision of welfare state incentives for maternal labor supply. A closer look at the situation of family policy in Germany after World War II reveals that for a long time after the end of the war, the family was seen as a natural institution that should be as unaffected as possible by state intervention. From the ideological Christian perspective, the only goal of family policy was to protect this natural institution from destructive societal influences, so "[...] that governmental activities, besides affirming the family as a central element, concentrated on providing direct cash benefits [...]" for child rearing and housing (Neidhardt 1978: 219). At least until the 1960s, this view on family policy could easily prevail because family relations remained stable, including high marriage and low divorce rates and a stabilized birth rate.

Having said that, it is doubtless that Germany has undergone some significant changes in its social and family structures. Female and maternal labor force participation have increased and after the reunification with the former German Democratic Republic, the differences between East and West Germany with regard to female employment and public childcare services became apparent, since the GDR had always put considerably more effort on the facilitation of employment for women and mothers (Pettinger 1993). These changes have certainly reinforced the debate about the importance of the family as a central societal institution and about the importance of mothers for the early socialization of children. However, at least until the turn of the century, changes in, for instance, the public provision of childcare can hardly be observed. Early childhood education and care institutions for children below the age of three have seemed to be "[...] unable to shake off their origins as provisions for families in distress [...]" and they still resemble their historic predecessors which were mainly directed at "[...] the neglected children of the poor, working population [...]" (ibid: 212 et seq.).

A study by Daly (1999) compares the relationship between Catholicism and social policy in Ireland and Germany and her study confirms the important role that religious traditions play with regard to the orientation of German and Irish family

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policy, even though their social Catholic policy approaches have had different results. With regard to general family policy, public support is more extensive in Germany than it is in Ireland. On the one hand, Daly finds a diversified range of policies in Germany, including general cash transfers and tax allowances for all families. On the other hand, the range of policies is rather limited in Ireland, mostly supporting low earner families with children, providing targeted benefits and a level of financial support that is generally lower than the one provided in Germany. Furthermore, the policy objectives differ from each other, since Irish family policy is mostly directed at the alleviation of child poverty while German family policy is designed to support traditional family structures. Therefore, German family policy mostly targets the traditional male breadwinner family with children while low-income families are the target of Irish family policy. Additionally, while Germany provides at least part-time childcare services for children above the age of three, public childcare in Ireland has mostly been limited to the provision of services for children who are considered to be at risk (ibid: 113).

However, with regard to gender-related questions, the situation is slightly different. Daly takes a closer look at questions concerning the receipt of benefits by married women and mothers at their own right, concerning the differentials in the value of male and female benefits and concerning the size of tax incentives for a non-employed spouse and here, Ireland performs better. In Ireland, mothers are the general recipients of benefits, the differences in the value of benefits are low and there are no tax incentives for couples in which one spouse is not employed or only employed at a low income (ibid: 115). These observations can lead to the conclusion that social Catholic traditions are persistent and influential in both Ireland and Germany, although they manifest themselves in different ways and that welfare state research has reasonable causes to assume that religious motives play an important role in determining the role of the state with regard to the support of families and the employment of mothers.

Accrediting Germany's lack of welfare state incentives for maternal labor supply to its conservative Christian tradition is in line with existing conventional and gender-sensitive research. In turn, applying the logic of liberalism can lead to the assumption that it is more the role of the market that determines the role of the welfare state. This

can be assumed to have similar consequences on welfare state behavior as religious traditions, since it also leads to as few state intervention in social and employment questions as possible, even though the rationale behind this reluctance is different. From this perspective, the labor market participation of mothers and incentives for their labor supply is a relevant question as well and recent developments in German labor market policy show considerable similarities with liberal welfare states like the United Kingdom. The idea of a so-called Third Way in social policy has originated in the United Kingdom and it was surrounded by a resurgent debate about the functions, responsibilities and duties of welfare states and their citizens. The works of Anthony Giddens (1998) emphasize that social rights should not be unconditional, but that they should depend on the acceptance of responsibility and obligations on the part of the citizens. Keywords like labor market flexibilization, active labor market policies, training and education have determined the debate and underlined the contrast between the conventional welfare state providing universal entitlements, the protection of labor and social services and the new, enabling welfare state which emphasizes a more efficient delivery of social welfare services and goods by private agencies, the promotion of work also by means of sanctions and a selective targeting of benefits instead of universal entitlements (cp. Gilbert 2002 / Surender 2004). In its extreme form, the welfare state of the Third Way has also been understood as a kind of workfare state, an idea that is linked to an increased conditionality of rights, more obligations for the benefit recipient and a stronger compulsion to accept a job offer, even if this implies an employment in the low-wage sector (cp. Dingeldey 2007).

The ideas of the Third Way logic have also found their way into the feminist debate. For instance, Lewis (2002) assumes that the Third Way perspective on family policy would include an increase in gender neutrality, leading to a generalization of the male-oriented model of employment and welfare to women. Furthermore, Daly (2004) explains that with regard to family policy, Third Way ideas manifest themselves in measures such as a decrease in unconditional support for unemployed (lone) mothers and in a decreasing legitimacy of care as the full-time activity of mothers. By contrast, the significance of fostering if not compelling employment increases, since according to the Third Way logic, social inclusion equals inclusion in the labor markets. A Third Way approach towards families would include the encouragement of working among parents by facilitating leaves from employment,

by reforms of tax and benefit provisions and by expanding the public support of childcare. However, a Third Way approach towards family policy would also imply a conditionality of financial support and other family benefits on parental behavior and a reevaluation of motherhood in the sense that mothers are more strongly expected to combine it with paid employment.

Even though the literature on Third Way politics attempts to illustrate that these kinds of reforms do not imply that responsibilities only lay with the citizens, the implementation of these liberal reforms conveys the impression that they have not necessarily led to an even involvement of both state and individuals. In Germany, the first important reform was the adoption of the so-called *Job-AQTIV Law* in 2002. This abbreviation stands for activation, qualification, training, investment and job placement and it has been considered as an important step of reorientation in the field of labor market policy, equaling a break with the conservative welfare state regime and a move towards Anglo-American policy traditions in the sense of the so-called *New Deal* (Fleckenstein 2008). It was meant to lead to an improvement of the quality of placement and an increase of further education offers, for the creation of job applicant profiles and a stronger cooperation with the unemployed person. Furthermore, it was supposed to strengthen the preventive character of labor market policy and facilitate a faster reaction to unemployment. The implementation of this law has been notably characterized by key words that are very comparable to the debate in the United Kingdom, emphasizing that the new German labor market policy is supposed to be supportive and demanding at the same time. These key words can easily be linked to their British equivalents of *No Rights without Responsibilities*. Furthermore, key concepts like proactiveness and individual responsibility, especially in the field of further education and training, have played a prominent role in the both the German and the British rhetoric and debates around the new labor market legislations.

Summary

The cluster analysis performed in the present study has indicated that with regard to welfare state incentives for maternal labor supply, countries seem to be classified differently from existing conventional and even from gender-sensitive welfare state typologies. By means of the cases of Norway, Canada and Germany, the foregoing

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exemplary country studies have attempted to show which country-specific characteristics and developments have contributed to the deviations from existing welfare state classifications. The case of Norway has shown that even though the country resembles other social-democratic welfare states in many respects, such as the political system and the general universal and egalitarian features of social policy, it is showing less pronounced welfare state incentives for maternal labor supply. Industrialization and the increase in female labor force participation have taken place at a slightly later stage than in Norway's Scandinavian counterparts and the creation of welfare state incentives for female labor supply has developed more slowly. The country study has shown that in comparison to other Scandinavian countries, Norway has proven to be characterized by considerably more conservative attitudes towards family structures and maternal employment. The fact that Norway shares this characteristic with Australia, a country that it has been grouped with in the present cluster analysis, further supports the fact that the more traditional attitudes towards family life have been one of the significant driving forces behind Norway falling behind.

A more detailed look at the situation in Canada has also given some insights about how and why the country performs differently from its traditional liberal welfare state family. It can most certainly be said that Canada provides a higher level of welfare state incentives for maternal labor supply than other liberal welfare states. It also appears that it is more the differences from other liberal welfare states than the distinct comparability with non-liberal welfare states that leads Canada to cluster away from its traditional welfare state family. Nevertheless, both the historical similarities with other liberal welfare states and the European origins of the country have to be taken into consideration. A closer examination of the development of Canadian social policy shows that it cannot be ruled out that the country has maintained a higher proximity to its European roots than other typical immigration countries and that the influence of its liberal neighbors has not manifested itself in every field of social policy.

In the present analysis, Germany has been clustered with liberal welfare states like the United Kingdom and late female mobilization welfare states like Ireland. This country cluster shows a relatively low level of welfare state incentives for maternal

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labor supply and in the case of Germany, the combination of two more or less subsequent developments can be held accountable for that. Just like Ireland, Germany has started off as a welfare state that has been heavily influenced by religious traditions, leading to limited welfare state intervention in family issues and a promotion of traditional family structures. But the promotion of traditional family structures has not prevented female labor force participation rate from increasing. In this sense, Germany has undergone the same societal changes as many other European countries. However, the original conservative attitude towards welfare state intervention in family structures has recently been joined by a more liberal attitude towards social policy. This type of move towards Anglo-American politics has not led to more welfare state intervention either. By contrast, it is characterized by an emphasis of individual responsibilities and a conditionality of rights. Limited welfare state intervention due to religious traditions in combination with a turn towards more liberal social policies can be considered one possible cause for Germany's low level of welfare state incentives for maternal labor supply.

4.2. The Relationship between Welfare State Incentives for Maternal Labor Supply and the Labor Market Participation of Individual Mothers

The foregoing analysis of the cross-national variation of welfare state incentives towards maternal labor supply has revealed that the support of maternal employment is shaped differently across countries and that patterns of support seem to be different from conventional and other gender-sensitive typologies. Since the country level analysis has shown that labor supply incentives are partly characterized by considerable differences, it is worth investigating if this variation is reflected by the labor supply behavior of mothers, i.e. if higher levels of welfare state incentives are positively associated with higher average levels of maternal labor supply. This procedure is in line with the development of welfare state research. The theoretical chapter has pointed out that welfare state research has moved from explaining welfare state development and variation to the analysis of the effects of welfare state policies on societies and individual lives. While early studies dealing with the effects of welfare state policy mostly focused on aggregate economic well-being like GDP per capita, absolute and relative measures of poverty as well as measures of subjective poverty perception, more recent work has started to focus on the effects of social policy on specific population groups. The effects of welfare state policies on the living situation of women have been of particular interest for this line of research. Just as the gender-neutral lines of welfare state research, studies which take the gender dimension into account underwent a shift towards the consideration of not only the evaluation and comparison of welfare state policies, but also of welfare state effects, especially when it comes to female labor market participation. The studies by Gornick et al. (1996b), Platenga and Hansen (1999), Gornick and Meyers (2003) and Pettit and Hook (2005 / 2009) are a few prominent examples of an analysis of the relationship between welfare state policies and individual outcomes. All these studies provide useful starting points for the development of a valid selection of welfare state incentives for maternal labor supply. With the FEMMES Dataset, the present study has assembled central indicators for public support of maternal employment identified in previous research and has extended this selection by adding further explanatory factors which are, from a theoretical point of view, considered as incentives for maternal labor supply. The selection of explanatory factors used for the present study is strictly limited to labor supply incentives and is combined with the necessary

individual and country level control variables to test their association with the individual labor supply behavior of mothers by means of hierarchical logistic models. The first subsection of this chapter presents information on the dependent variable on the individual level and the independent variables on the country level. The second subsection of this chapter describes the selection of individual and country level control variables included in the hierarchical logistic models. The third subsection presents and discusses the results of the multi-level analyses.

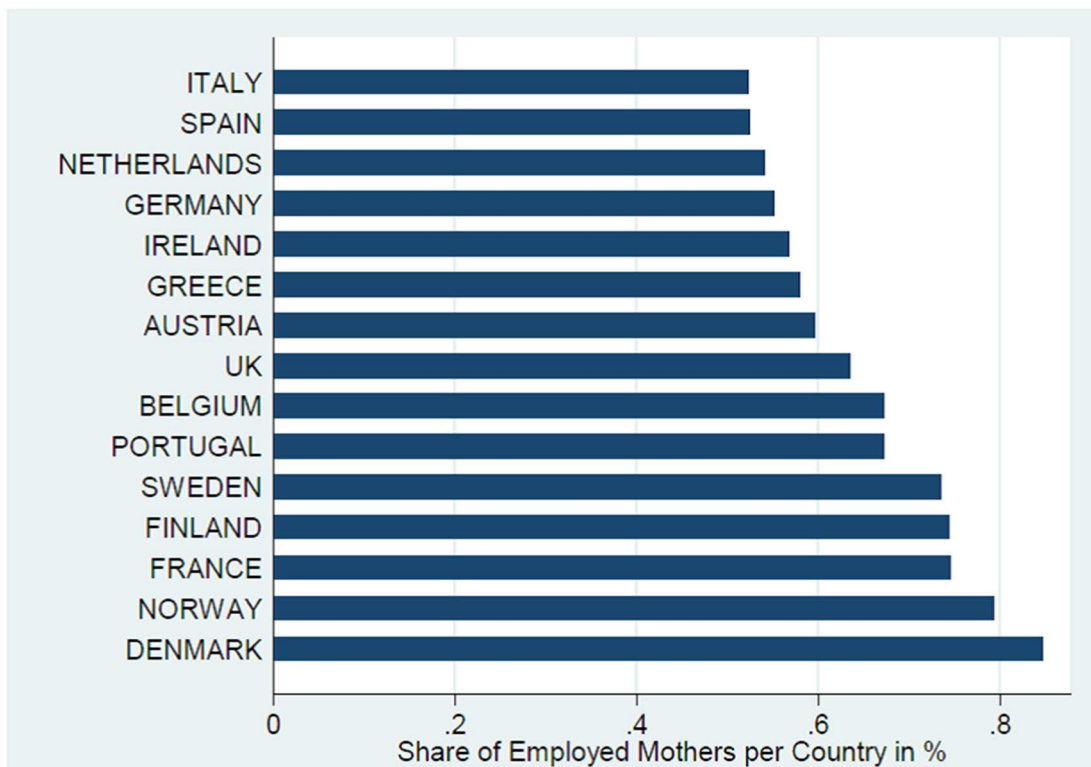
4.2.1. The Association between Individual Labor Supply and the Explanatory Variables on the Country Level

Chapter 3.1. has already provided the most central information on the source and the coding of the individual level variables of which one is the dependent variable, i.e. the *basic activity status* of mothers. The subsample of the EU SILC 2005 used for the present study consists of 42.789 women with children from 15 European countries⁷. Graph 4.1. shows the share of employed mothers (as opposed to mothers who do not supply labor to the market) by country in ascending order. These descriptive numbers document that maternal labor force participation differs considerably across countries and gives further justification on why the welfare state determinants of maternal labor supply are still worth investigating. While the share of employed mothers does, for instance, not exceed 60 percent in some Southern European countries, it amounts to more than 60 percent in the United Kingdom and it exceeds the 70 percent threshold in France. In some of the Scandinavian countries, it amounts to more than 80 percent. The order of countries does not seem to be very striking or different from what could have been expected from earlier empirical findings. The Southern European countries and the countries with a strong Christian tradition are characterized by lower female employment rates than the social-democratic welfare states. One exception is the case of Portugal which is characterized by a relatively high share of employed mothers compared to other Southern European welfare states, but existing research has shown that this unusually high female employment rate can be traced back to the specific historic and economic development of the former dictatorship (cp. Cardoso 1996).

⁷Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Sweden, Spain and the United Kingdom

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Graph 4.1. Share of Employed Mothers



Source: EU SILC, women with children, 2005 (n = 42.789).

The selection of labor supply incentives that are assumed being a possible explanation for this cross-national variation covers the five different policy fields of parental leave, childcare, school policy, employment law and taxes and benefits. While the theoretical argumentation in favor of those policy fields and of the single indicators from each field has been presented in further detail in chapter 2.3., chapter 3.2. has provided the main information on the data sources and the coding procedures for the explanatory variables on the country level. All country level variables take on values ranging from 0 to 1. Higher values always imply a higher degree of welfare state incentives for maternal labor supply. Consequently, a positive relationship between (the indicators from) all five policy fields and maternal labor supply is expected. For the coding of the macro level variables, this approach implies, in turn, that some variables, such as, for instance, the level of childcare fees, had to be recoded to assign countries with a high level of private childcare costs a lower value than countries with a low level of private childcare costs. Another important example for which this kind of recoding has been applied are the family cash benefits, since low benefits are actually considered having a more incentivizing effect on labor

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supply than high family cash benefits. Providing a lower level of cash benefits is, hence, positively connoted and leads to ascribing higher values to countries which provide a lower level of benefits. The variables whose values were already ranging between 0 and 1 (or 0 and 100 respectively) and where higher values already implied a higher level of welfare state incentives, such as, for instance, childcare coverage, were simply applied in their original form. When meaningful, some policies were recoded into categorical variables, for instance with regard to the information on entitlement to and replacement rates during parental leave. For other variables, the highest actual value was used as a maximum and assigned the value 1 while the other values were transformed to a percentage share of it. Table 4.6. shows the average levels of welfare state incentives across countries which are used as a starting point for the hierarchical logistic analysis.

Table 4.6. Average Levels of Welfare State Incentives for Maternal Labor Supply (2004-2010)

Country	Average Incentive Level				
	Parental Leave	Childcare	School Policy	Employment Law	Taxation and Allowances
AT	0.72	0.31	0.68	0.79	0.05
BE	0.63	0.63	0.75	0.69	0.38
DE	0.59	0.49	0.71	0.55	0.75
DK	0.60	0.93	0.64	0.69	0.13
ES	0.66	0.48	0.68	0.61	0.60
FL	0.82	0.79	0.57	0.86	0.25
FR	0.92	0.61	0.67	0.58	0.60
GR	0.50	0.47	0.82	0.67	0.38
IE	0.42	0.50	0.74	0.59	0.10
IT	0.50	0.51	0.72	0.45	0.38
NL	0.60	0.59	0.76	0.66	0.58
NO	0.67	0.67	0.66	0.56	0.23
PT	0.70	0.48	0.66	0.84	0.48
SE	0.77	0.88	0.71	0.80	0.13
UK	0.43	0.56	0.82	0.49	0.20
Mean	0.63	0.58	0.70	0.63	0.40

Source: FEMMES Dataset (Appendix B), own calculations.

Note: Averages for each policy field are generated from the values of the single indicators in each policy field.

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In two cases, there were no or not enough data available for the single welfare state incentives to calculate meaningful and comparable averages for the respective policy fields. For Denmark, the information on school policies is missing and for Spain, the data on early childhood education and care is incomplete. For these two cases, the respective average levels of welfare state incentives have been calculated by using the average of the values of the countries that Denmark and Spain are usually grouped with. Both conventional and gender-sensitive welfare state typologies as well as the cluster analysis performed in the present study have shown that Denmark is most similar to Sweden and Finland while Spain is most similar to Portugal and Greece. It is not unreasonable to assume that with regard to school policy and childcare, these similarities exist as well. Therefore, the average values for school policy in Sweden and Finland have been used to calculate the average level of school policy for Denmark. The average values for childcare in Portugal and Greece have been used to calculate the average level of early childhood education and care for Spain respectively.

The variables from the policy field of *parental leave* mainly cover legal entitlements, regulations of length and payments. Policy instruments from this field regulate the relationship between employer and employee in the period after childbirth and with regard to questions of caregiving for children at home. It has been argued before that parental leave with a legislated job guarantee avoids the decrease of the value of market time that would normally be caused by the interruption of employment although parental leave implies an actual employment discontinuity. If parents in general and mothers in particular have the possibility to take up a period of paid maternity leave, they can return to their workplace and they are not at risk of considerable financial losses during or after the employment break. In this sense, the advantages of a regulated leave from employment outweigh the disadvantages of the virtual interruption of work that is associated with the leave.

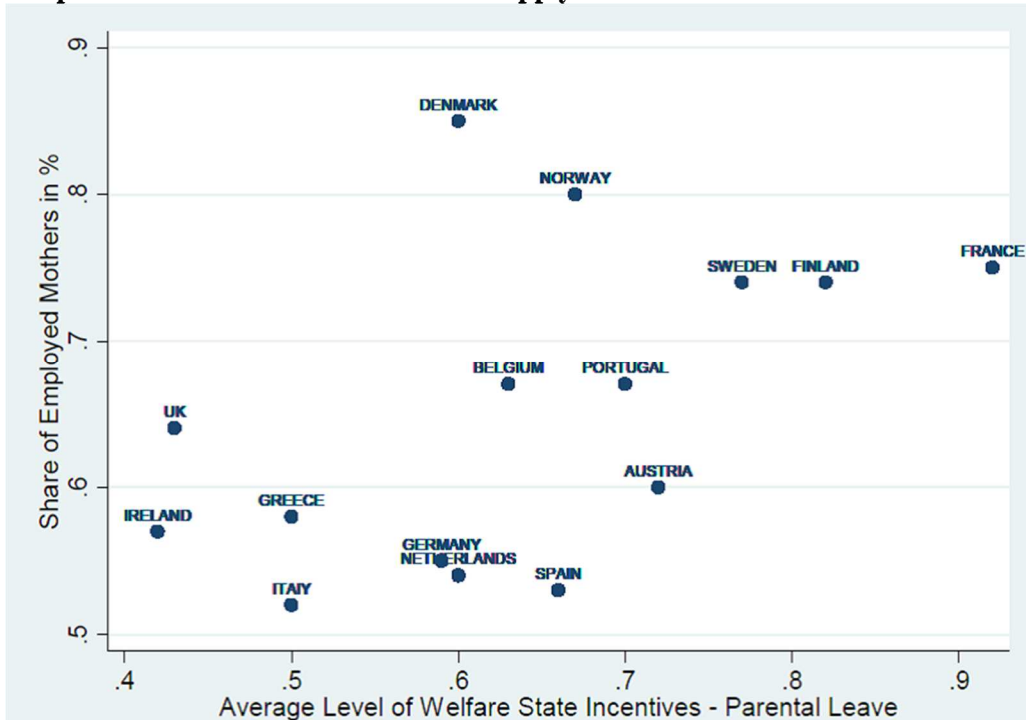
Previous research has also shown that childcare responsibilities are one of the main factors which prevent mothers from carrying out uninterrupted full-time employment (cp. Platenga and Hansen 1999). In the present study, the variables on *public childcare* cover the legal, the monetary and the infrastructural dimension of welfare state intervention. With regard to the effect of *school schedules* on maternal labor

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supply, this relationship can be compared to the case of public childcare. In a large part of the developed world, a certain amount of school years is compulsory for every child. In contrast to public childcare provision for children below school age, school education is normally institutionalized and available to every child without specific legal entitlement. However, the configuration of certain features of school education can be assumed to influence the possibility of reconciliation of work and family life for parents of school-aged children and in this way also affect the labor supply decision of mothers.

The policy field of *employment law* basically captures the (temporal) flexibility at the workplace, even though its potential effects on the financial situation cannot be denied. Generally, working time policy protects the employee from inappropriately high working hours, regulates overtime conditions and compensation, provides for sufficient vacation and protects from discrimination of part-time employees. Working conditions can be assumed to affect maternal labor supply because they indicate the possibility of reconciliation of work and family life without substantial income losses. Labor supply incentives from the policy field of *taxes and allowances* refer more directly to the influence of social policy on the financial situation of families. Since in most cases, earnings from employment are the kind of income that is subject to taxation (compared to, for instance, some social benefits), family tax breaks are an important policy instrument to increase the effective market wage of a working mother. Family cash benefits can actually have a negative effect on maternal labor supply by increasing the reservation wage. For the present purpose, family cash benefits will therefore be understood as a disincentive to labor supply and the level of welfare state incentives for maternal labor supply will be rated higher when the share of the GDP spent on family cash benefits is lower. The following scatterplots of the share of employed mothers per country and the average level of welfare state incentives in the five different policy fields already give some indication on how maternal labor force participation can possibly be associated with social and family policies and if the assumption that a higher level of incentives leads to a higher level of maternal labor supply can hold true.

Graph 4.2. Parental Leave and Labor Supply

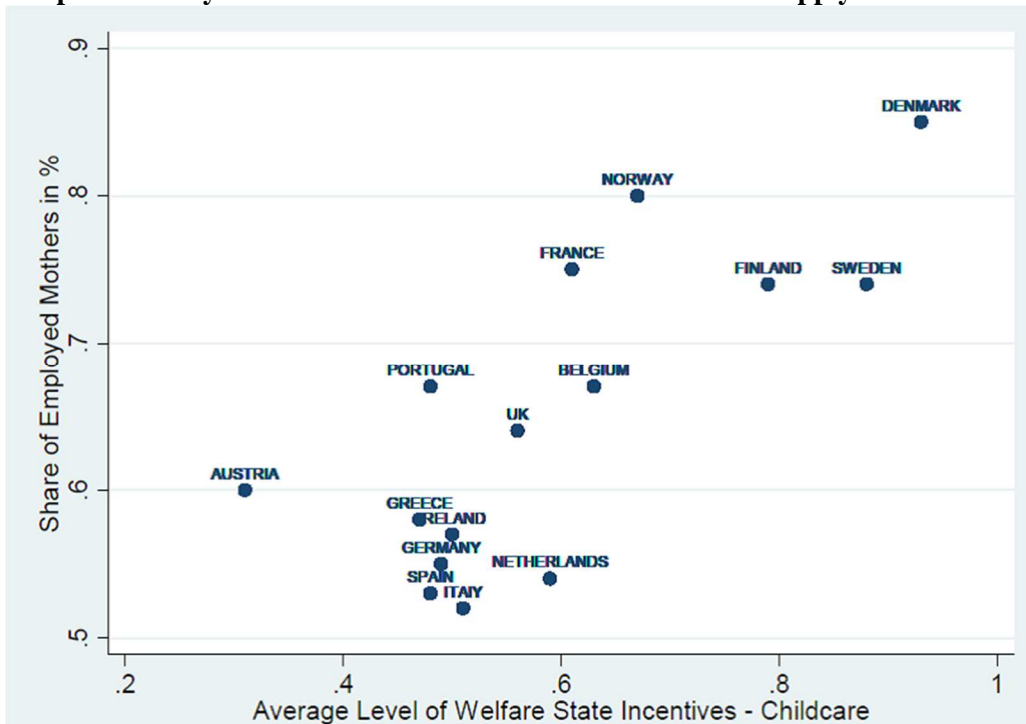


Correlation coefficient: $r = 0.57$

Source: EU SILC, women with children, 2005 (n = 42.789).

Note: Averages for each policy field are generated from the values of the single indicators in each policy field.

Graph 4.3. Early Childhood Education and Care and Labor Supply

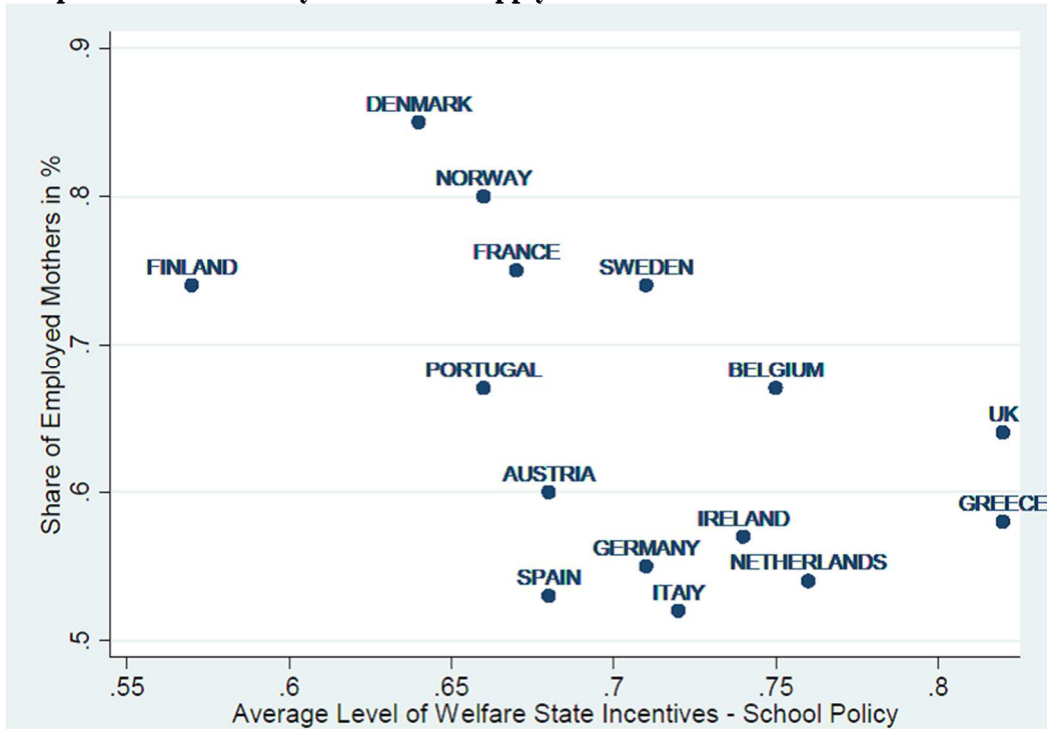


Correlation coefficient: $r = 0.78$

Source: EU SILC, women with children, 2005 (n = 42.789).

Note: Averages for each policy field are generated from the values of the single indicators in each policy field.

Graph 4.4. School Policy and Labor Supply

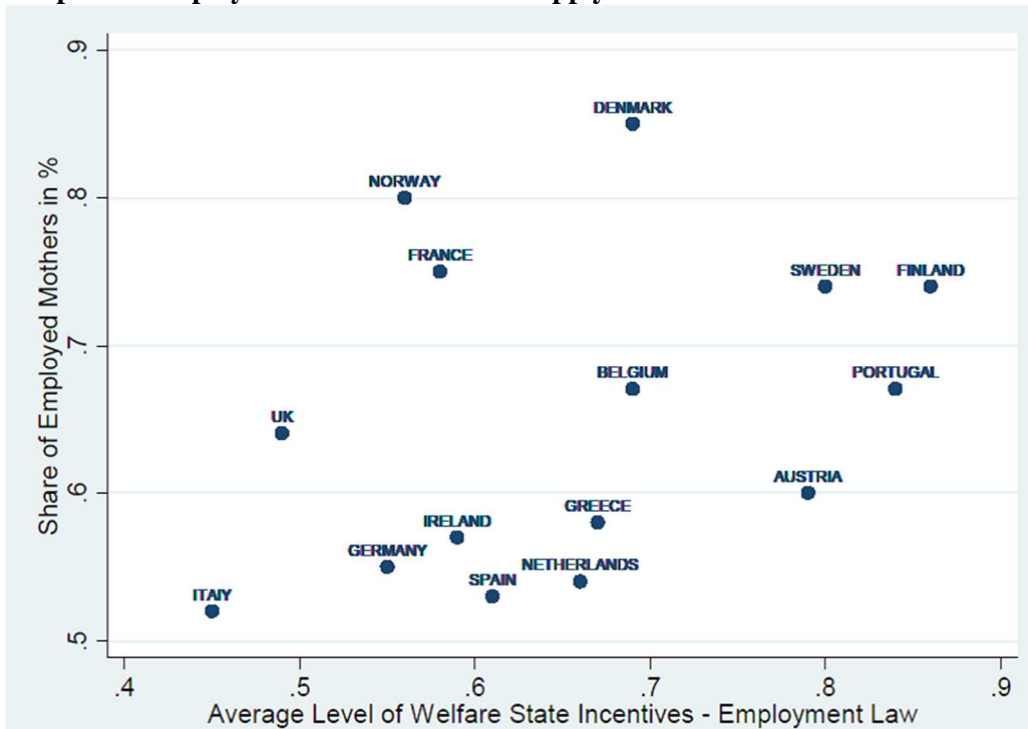


Correlation coefficient: $r = -0.51$

Source: EU SILC, women with children, 2005 (n = 42.789).

Note: Averages for each policy field are generated from the values of the single indicators in each policy field.

Graph 4.5. Employment Law and Labor Supply



Correlation coefficient: $r = 0.49$

Source: EU SILC, women with children, 2005 (n = 42.789).

Note: Averages for each policy field are generated from the values of the single indicators in each policy field.

Graph 4.6. Taxes and Allowances and Labor Supply



Correlation coefficient: $r = -0.46$

Source: EU SILC, women with children, 2005 (n = 42.789).

Note: Averages for each policy field are generated from the values of the single indicators in each policy field.

Graph 4.2. and 4.3. show relatively strong and positive associations between parental leave and maternal labor supply and childcare and maternal labor supply respectively. Graph 4.4., in turn, shows a negative correlation between the average incentive level in the field of school policy and the share of employed mothers. Also the scatterplots shown in graphs 4.5. and 4.6. only partly confirm the assumption of a positive association between the level of incentives and the share of employed mothers. While the correlation between employment law and labor supply is positive, but less strong than the one between parental leave and maternal labor supply, the correlation between the average incentive level in the field of taxation and benefits and the average maternal labor force participation is negative.

4.2.2. Individual Level and Country Level Control Variables

In the theoretical remarks on the origins of labor supply theory, it has become apparent that in its beginnings, it has mainly been individual factors that have been taken into account to explain labor market behavior. Therefore, it is necessary to include a number of individual level characteristics into the analysis. Detailed information on the theoretical argumentation and operationalization can be found in chapters 2.3. and 3.1. Table 4.7. shows the distribution of the socio-economic characteristics of the mothers per country. On average and across countries, the women in the sample are 39,7 years old, with a minimum of 38,1 years in the United Kingdom and a maximum of 41,9 in Finland. One of the main explanatory factors for labor supply on the individual level is the market wage of a person, assuming that with an increasing market wage, the opportunity costs of not supplying labor to the market rise and therefore, the labor supply probability increases. Here, information on the monthly cash income from employment has been used to operationalize the market wage of a person. Since especially the market wage is often subject to a selection bias because it can only be observed for persons who are actually in employment, missing wages have been estimated by means of the Heckman correction method which had to be pursued for about 16.000 mothers in the sample (cp. chapter 3.3.). With an average monthly income of about 1.000 EUR in Portugal and an average income of about 2.500 EUR in Denmark, the differences in the monthly cash income from employment are considerable.

Labor supply theory suggests that not only the individual wage from employment, but also other sources of income have to be taken into account for an analysis of labor supply. It is assumed that there can be a trade-off between non-labor income and income from employment because some social benefits can be connected to not being employed. Furthermore, the one partner's income from employment can decrease due to a necessary reduction of market time when the other partner decides to supply labor to the market as well. If both partners decide to allocate some time to the labor market, there is a possibility that they each supply less labor to the market than they would, individually, if the respective other partner would decide to specialize in non-market work.

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Table 4.7. Socio-Economic Characteristics Across Countries

Country	Share of Employed Mothers	Average Age	Average Gross Monthly Income from Employment In EUR	Average Monthly Non-Labor Income in EUR (Household Income minus Income from Employment)	Education	
					no education beyond compulsory schooling	education beyond compulsory schooling
AT	59.68	38,6	1496	2671	20.4	79.6
BE	67.17	39	1850	2071	19.3	80.7
DE	55.12	40,7	1514	2545	6.3	93.7
DK	84.70	40	2556	2345	15.8	84.2
ES	52.50	39,6	1387	1739	48.5	51.5
FL	74.36	41,9	1703	2557	10,3	89,7
FR	74.54	39,2	1650	2130	13.1	86.9
GR	58.02	38,5	1361	1597	35.8	64.2
IE	56.76	40,7	1745	3157	33.5	66.5
IT	52.35	39,6	1511	2352	42.7	57.3
NL	54.10	39,7	1489	2224	22.5	77.5
NO	79.63	39,6	2051	3506	5.7	94.3
PT	67.25	39,3	1016	1373	71	29
SE	73.53	40,3	1654	2067	9.5	90.5
UK	63.54	38,1	1766	2820	13.4	86.6
Average	62.42	39,7	1616	2336	25,9	74.1

Source: EU SILC, women with children, 2005 (n = 42.789).

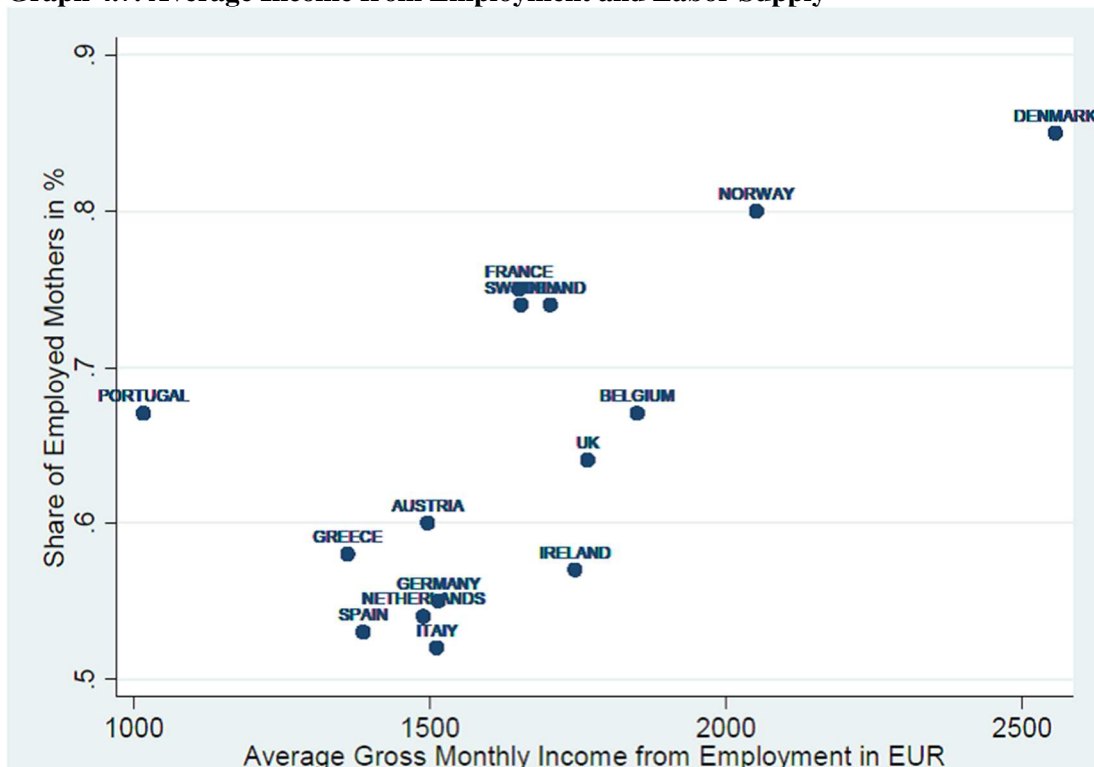
Therefore, it can be assumed that with increasing non-labor income, the trade-off between supplying labor to the market and not supplying labor to the market increases as well. For the purpose of the present study, the monthly non-labor income has been calculated by subtracting the individual mother's market income from the total disposable household income. Just like the average individual wages, the monthly non-labor income is characterized by considerable differences across countries, ranging from an average of about 1.300 EUR in Portugal to an average of more than 3.000 EUR in Norway.

Apart from direct financial determinants of labor supply, there is also a number of more indirect factors that have to be considered. It is assumed that average earnings rise with the level of education and that individuals with a higher level of education are more likely to supply labor to the market than individuals with a lower level of education because the opportunity costs are higher for them. With regard to educational achievement, the sample of women has been subdivided into those who have no education beyond compulsory schooling, i.e. who have finished no more

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than lower secondary education, and those who have achieved educational degrees beyond compulsory schooling. On average, only a quarter of the women have not achieved more than compulsory education. However, the minimum amounts to only five or six percent in Norway and Germany and to more than 40 percent in Spain and Italy. In Portugal, the share of women with no education beyond compulsory schooling amounts to more than 70 percent.

Graph 4.7. Average Income from Employment and Labor Supply



Correlation coefficient: $r = 0.69$

Source: EU SILC, women with children, 2005 (n = 42.789).

The exemplary scatterplot in graph 4.7. shows the relation between the share of employed mothers per country and the average monthly income from employment per country. The correlation between those variables is clearly strong and positive and should also be reflected in the logistic regressions. Table 4.8. gives information on the different types of households the women in the sample live in. According to labor supply theory, this information is essential since, for instance, the number of children and the associated potential costs for childcare outside the home can be considered as an effective decrease of the market wage. On average, about 50 percent of the women live in households with one dependent child while only 15 percent live

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in households with three dependent children or more. However, the shares of the respective households show that it is more common for families in Finland, Ireland Norway or Sweden to have three or more children than it is for families in Spain, Italy or Portugal.

Table 4.8. Family Composition Across Countries

Country	Number of Children			Marital Status Share of married mothers	Parenting Status Share of single mothers
	At least one child	Two children	Three or more children		
AT	55.08	31.45	13.48	80.51	7.93
BE	46.68	35.11	18.21	76.18	9.90
DE	53.36	35.39	11.25	76.47	16.74
DK	39.92	43.72	16.35	78.40	4.18
ES	57.90	34.96	7.13	81.66	3.91
FL	42.01	35.19	22.81	78.57	5.39
FR	43.00	39.79	17.21	72.09	7.81
GR	53.77	35.98	10.25	89.69	3.63
IE	47.90	29.04	23.06	75.16	13.21
IT	58.17	34.17	7.67	82.55	5.25
NL	36.26	44.61	19.13	81.89	6.59
NO	39.82	38.44	21.47	69.70	6.54
PT	64.65	28.62	6.73	83.14	4.61
SE	40.35	39.15	20.50	64.88	6.62
UK	52.77	33.72	13.51	66.33	19.54
Mean	49.79	36.07	14.14	77.92	7.88

Source: EU SILC, women with children, 2005 (n = 42.789).

From the perspective of labor supply theory, it is also important to take into account whether an individual is married or whether they pursue the parenting task alone. According to the assumptions about specialization and exchange, lower wage rates for women and traditions of socialization can increase the probability that the wife allocates more time to domestic work because she is considered being more productive in this field and the family forgoes less market earnings and goods than if the husband would opt for domestic work. Being married can hence be assumed to decrease the probability of labor supply. On average, three quarters of the women in the sample are married.

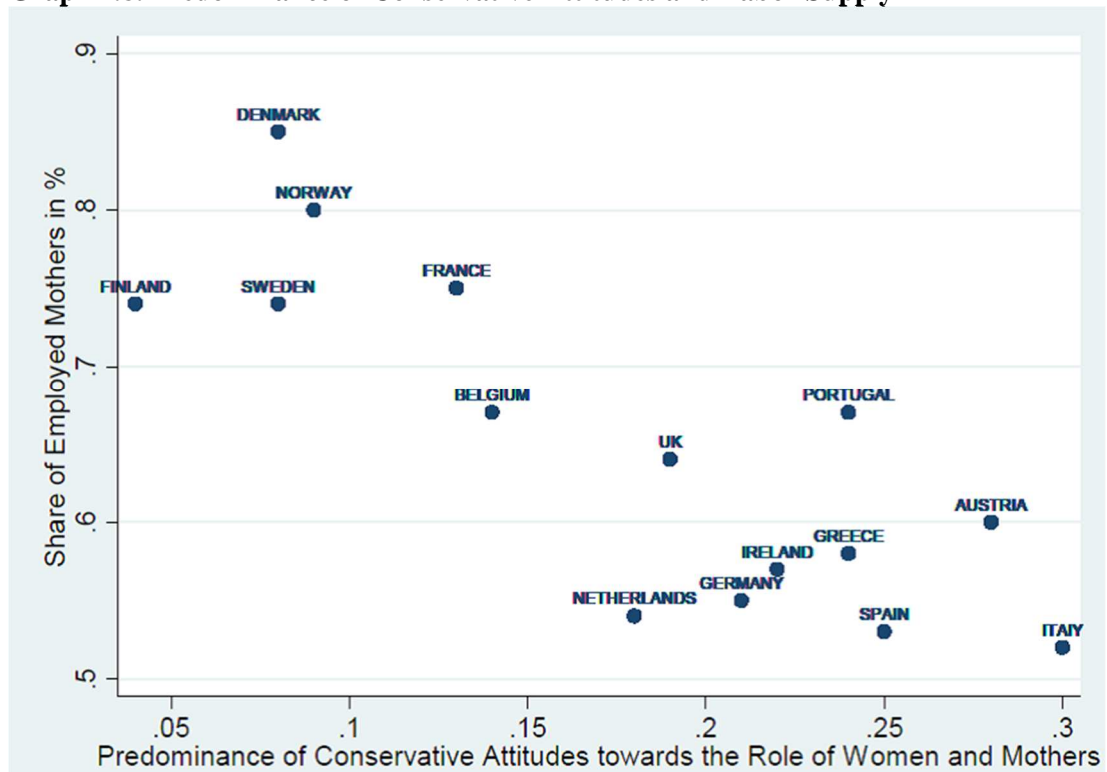
The share of married women is, however, considerably lower in the United Kingdom and in Sweden than it is, for instance, in Greece or in the Portugal. The data on the share of single mother families reveal that a low share of married mothers does not necessarily imply a high number of single mother families or vice versa. On average,

about eight percent of the women in the sample live in a single adult household with children. In some countries, the share is, however, considerably higher, amounting to over 13 percent in Ireland, to over 16 percent in Germany and to almost 20 percent in the United Kingdom while it is lower than the average in Sweden.

The control of certain factors is not only advisable on the individual level, but also on the country level. By including information on the overall female employment-population ratio, the present study takes the general labor market situation for women into account. Since simple unemployment rates only measure the ratio of those individuals in a country which are registered as unemployed in relation to the national labor force, the present study uses data on the female employment-population ratio which "[...] relates the level of employment to the working-age population (those aged 15 – 64), regardless of whether or not (individual) people are officially considered to be in the labor force [...]" (Siaroff 1994: 86; Leon 1981).

Furthermore, a control variable for the predominance of conservative attitudes towards the role of women and mothers is included, even though the present study assumes that these attitudes can just as well be influenced and shaped by the degree of state support for female employment. However, the relationship between public support for female employment and private attitudes towards the role of women can also be subject to reverse causality, implying that the state aligns its own policies with the traditions and attitudes that are prevalent in its society to, for instance, ensure the support of voters. Since the EU SILC 2005 does not provide information on attitudes, the corresponding data have been gathered from the European Values Study 2008. The EVS 2008 provides a variable that asks for the relationship between working mothers and their children or, more specifically, if the respondents think that working mothers can establish a relationship with her children that is just as warm and secure as the relationship that non-working mothers can potentially establish with their children. For the purpose of the present study, the respondents who have (strongly) disagreed with that statement have been summarized and are used as a representation of the share of the population that holds more conservative values towards the role of mothers.

Graph 4.8. Predominance of Conservative Attitudes and Labor Supply



Correlation coefficient: $r = -0.86$

Source: EU SILC, women with children, 2005 (n = 42.789). EVS 2008 for the predominance of conservative attitudes.

The scatterplot in graph 4.8. shows the relationship between the share of employed mothers and the predominance of conservative attitudes towards the role of women and mothers and the relationship is indeed considerable. A high and negative correlation coefficient of -0.86 indicates that it is indeed important to control for the cultural aspects related to questions of female employment.

4.2.3 Hierarchical Logistic Regressions

The Influence of the Average Level of Welfare State Incentives on Maternal Labor Supply

The foregoing descriptions have already given some preliminary insights into the question which welfare state incentives for maternal labor supply could be positively associated with maternal employment decisions and how strong these relations can be. In a next step, the influence of the individual level determinants and of the average levels of welfare state incentives have been tested by means of a hierarchical logistic regression to provide a much clearer picture of the impact of individual and policy factors on maternal labor force participation. From a methodological perspective, a total number of fifteen countries for the multi-level analysis implies that the number of independent variables on the country level has to be limited as well. Therefore, the analysis starts by using the average levels of welfare state incentives across policy fields as independent variables on the country level.

Table 4.9. presents seven different models. The first model refers to the common intercept only model whose residual error variances on the individual and on the country level are used to calculate the so-called intra class correlation coefficient ρ . The intra class correlation coefficient is used to determine if individuals from the same country are more alike than individuals from different countries. If this is the case, it is assumed that the explanatory variables on the country level can indeed be held accountable for the variation between the countries. The intra class correlation coefficient ranges from 0 to 1 with higher values implying a higher share of the variance being located on the country level. For the present calculations, the intra class correlation coefficient amounts to $\rho = 0.13$ which indicates that at least to a certain extent, country level factors are responsible for the variation between the countries.

The second model tests the effects of the individual level variables on the odds of maternal labor force participation. The effects of the individual level variables are allowed to be random, i.e. to vary across countries, since it cannot necessarily be assumed that their impact is equal across countries. Furthermore, all continuous independent variables on the individual level (age, wage and non-labor income) have been centered around their grand mean. All individual level effects prove to be

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congruent with the basic assumptions of labor supply theory and apart from the effects of wage and marital status, all effects are significant. Age and education are positively associated with the probability of labor force participation. Compared to mothers who have no education beyond compulsory schooling, the odds of being employed are more than four times higher for mothers with more than lower secondary education (education = 1). In turn, an increasing number of children and being a single parent are negatively associated with maternal labor supply. The same applies to the non-labor income whose association with the employment status is negative as well.

The following five models show how the average levels of welfare state incentives in the five different policy fields are associated with the odds of maternal employment. Adding the respective explanatory variable and the control variables for culture and the general employment situation for women does not change the individual level effects. Only the average level of incentives in the field of parental leave is positively and significantly associated with maternal labor supply. This can be understood as a confirmation of the strand of welfare state research that assumes leave regulations to have a rather positive effect on maternal employment as opposed to the strand of literature that assumes it to be rather detrimental (cp. Gornick et al. 1996a: 5; Pettit / Hook 2005; Mandel / Semyonov 2006). Since previous research has, however, established reasonable cause to believe that also policies from the other fields are positively associated with maternal labor supply, the following sections will present analyses of the single indicators from the five policy fields. In this manner, it can be determined to what extent the effects have possibly been concealed by using average levels across policy fields and it can also be shed more light on the specific issue of parental leave policies.

Table 4.9. Hierarchical Logistic Regression of the Average Levels of Welfare State Incentives on Maternal Labor Supply

	Model 1 Intercept Only		Model 2 Individual Level		Model 3 Childcare		Model 4 Parental Leave		Model 5 School Policy		Model 6 Taxation & Allowances		Model 7 Employment Law	
	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio
Individual Level														
Intercept	0.65*** (0.13)	1.91	-0.09 (0.32)	0.91	-0.28 (0.93)	0.75	-1.37* (0.68)	0.25	1.45* (0.80)	4.26	-0.33 (0.73)	0.72	-0.56 (0.73)	0.57
Age			0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06
Married			-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97
Education beyond Compulsory Schooling			1.40*** (0.28)	4.04	1.39*** (0.28)	4.03	1.39*** (0.28)	4.02	1.40*** (0.28)	4.04	1.39*** (0.28)	4.04	1.40*** (0.28)	4.03
No. of Children			-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87
Single Mother			-0.48* (0.23)	0.62	-0.47* (0.23)	0.62	-0.48* (0.23)	0.61	-0.48* (0.23)	0.62	-0.48* (0.23)	0.62	-0.48* (0.23)	0.62
Market Wage			0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54
Non-Labor Income			-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91
Country Level														
Child-care					-0.43 (0.64)	0.65								
Parental Leave							1.26*** (0.32)	3.53						
School Policy									-2.23 (0.76)	0.11				
Taxation											-0.23 (0.24)	0.79		
Labor Law													0.12 (0.43)	1.12
Culture					-1.72 (1.48)	0.18	0.48 (0.81)	1.61	-1.20 (0.83)	0.30	-1.62 (0.86)	0.20	-1.20 (0.89)	0.30
Employment-Population Ratio					1.24 (0.83)	3.46	0.66 (0.68)	1.93	0.42 (0.75)	1.52	1.01 (0.86)	2.75	1.01 (0.84)	2.74
Intraclass Correlation Coefficient		0.13												
Likelihood Ratio						1.39***		1.32***		1.34***		1.48***		1.41***

Note: Level 1: n = 42,789; Level 2: n = 15; *** = P ≤ 0.01, ** = P ≤ 0.05, * = P ≤ 0.10

Marital Status: 0 = not married; 1 = married / Education: 0 = no more than lower secondary education; 1 = educational achievement beyond compulsory education / Number of Children: 1 = one dependent child; 2 = two dependent children; 3 = three or more dependent children / Parenting Status: 0 = two-parent household; 1 = single-parent household

A Likelihood Ratio Test has been pursued to compare the fit of the individual level model (model 2; null model) with every other model containing country-level factors (alternative model). It is used to establish how many times more likely the data are under the alternative model than the null model. The Likelihood Ratio has been used to compute a p-value to decide whether to reject the null model in favor of the alternative model with *** = P ≤ 0.01, ** = P ≤ 0.05, * = P ≤ 0.10.

The Influence of Parental Leave Policies on Maternal Labor Supply

The preceding findings which left the average level of parental leave policies to be the only welfare state incentive that is positively and significantly associated with the maternal employment probability lead to the further question which single incentives behind the average level of support could be the critical ones. The underlying assumption is that policy instruments from the field of parental leave regulate the relationship between employer and employee in the period after childbirth and when it comes to questions of caregiving for children. These instruments are supposed to avoid the decrease of the value of market time that would normally be caused by the interruption of employment although parental leave implies an actual employment discontinuity. Without parental leave, mothers possibly tend to opt for a complete withdrawal from the labor market after childbirth and this can call their re-entry into question. If mothers have the possibility to take up a period of paid maternity leave, they can return to their workplace and they are not at risk for considerable financial losses during or after the employment break.

Table 4.10. presents the values of the six single incentives in the field of parental leave which cover the legal entitlements, the duration and payments. The information on the *statutory entitlement to maternity leave* takes into account if there is any existing statutory entitlement, if it is paid and to what extent it is paid. Likewise, a variable on the *statutory entitlement to paternity leave* is included, assuming that the possibility for fathers to withdraw temporarily from the labor market has a positive effect on maternal labor supply as well. Existing paternity leave entitlements can shorten the period of time that mothers take off for caregiving which, in turn, strengthens their labor market attachment and reduces income losses. Just as the variable on maternity leave, the variable on paternity leave takes into account if there is any existing statutory entitlement, if it is paid and to what extent it is paid.

To cover different aspects of the duration of parental leave which have been inconsistently discussed in the literature (cp. Gornick et al. 1996a; Pettit and Hook 2005), the *maximum number of months of parental leave* and the *maximum number of paid months of parental leave* are taken into account as well. Furthermore, the *maximum number of paid months as a share of the maximum number of months* is

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included to analyze whether it is not the actual length of (paid) leave, but the share of the leave that is covered by wage replacement that affects maternal labor supply.

Table 4.10. Level of Welfare State Incentives in the Field of Parental Leave (2007)

Country	Maternity Leave	Paternity Leave	Length of Leave	Length of Paid Leave	Share of Paid Leave	Sick Child Leave
AT	1	0	0.66	0.66	1	1
BE	1	1	0.26	0.26	1	0.25
DE	1	0	1	0.39	0.39	0.75
DK	1	1	0.29	0.29	1	0
ES	1	1	1	0.10	0.10	0.75
FL	1	1	1	1	1	0
FR	1	1	1	1	1	0.50
GR	1	1	0.25	0.05	0.22	0.50
IE	0.66	0	0.39	0.12	0.32	1
IT	1	0	0.37	0.37	1	0.25
NL	1	1	0.24	0.07	0.29	1
NO	1	1	1	0.33	0.33	1
PT	1	1	0.94	0.11	0.12	1
SE	1	1	0.44	0.44	1	0.75
UK	0.66	0.66	0.50	0.17	0.34	0.25
Mean	0.95	0.71	0.62	0.36	0.61	0.60

Source: FEMMES Dataset (Appendix B).

Note: Recoded data.

Finally, the option of *leave in case of sickness of a child* is included. The variable captures information on the existence of statutory entitlements to sick child leave, on the replacement rate during sick child leave and on the extent of this leave arrangement, i.e. on the existence of additional leave entitlements covering a wider range of family members other than young children and/or situations of serious illness. The possibility of sick child leave can positively affect maternal labor supply because it anticipates the option of taking time off from work when necessary without the risk of financial losses.

The overview in table 4.10. shows that even though almost every country provides full maternity leave entitlements, there are considerable cross-national differences with regard to the other incentives. Full paternity leave is far less common and this also applies to the availability of leave in the case of a child's sickness. Furthermore, only a small number of countries provides long leaves which are fully paid during the entire period, such as Finland or France, while other countries provide shorter, but fully paid breaks from employment, such as Austria, Belgium, Denmark and

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Sweden. Other countries like Greece and the Netherlands only provide comparably short periods of leave whose replacement rates only cover a fraction of the entire period.

Table 4.11. shows the results of the six hierarchical logistic regressions testing the association of the single welfare state incentives from the field of parental leave on the individual labor supply of mothers. Again, the effects of the individual level variables are allowed to be random, i.e. to vary across countries, since it cannot necessarily be assumed that their impact is equal across countries. Furthermore, all continuous independent variables on the individual level (age, wage and non-labor income) have been centered around their grand mean. The effects of the individual level variables remain unchanged. They all prove to be congruent with the basic assumptions of labor supply theory and apart from the effects of wage and marital status, all effects are significant. Age and education are positively associated with the probability of labor force participation. Compared to mothers who have no education beyond compulsory schooling, the odds of being employed are more than four times higher for mothers with more than lower secondary education (education = 1). In turn, an increasing number of children and being a single parent are negatively associated with maternal labor supply. The same applies to the non-labor income whose association with the employment status is negative as well.

In addition to a partial significance of the general labor market situation for women, only the availability of paternity leave, the length of paid leave in months and the fraction of the total leave that is covered by the wage replacement prove to be significantly and positively associated with maternal employment. In relation to the assumptions that previous research has made about the effect of parental leave arrangements on maternal labor supply, this finding can be considered potentially interesting. The effect of the entitlement to maternity leave, its duration (without considering payments) and the availability of leave in the case of a child's sickness are not significantly associated with maternal labor supply.

Table 4.11. Hierarchical Logistic Regression of the Single Incentives from the Field of Parental Leave on Maternal Labor Supply

	Model 8 Maternity Leave Entitlement		Model 9 Paternity Leave Entitlement		Model 10 Length of Leave		Model 11 Length of Paid Leave		Model 12 Share of Paid Leave / Total Leave		Model 13 Sick Child Leave	
	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio
Individual Level												
Intercept	1.12 (0.91)	0.33	-0.92 (0.75)	0.40	-0.64 (0.69)	0.53	-1.43** (0.63)	0.24	1.45* (0.80)	4.26	-0.33 (0.73)	0.72
Age	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06
Married	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97
Education beyond Compulsory Schooling	1.39*** (0.28)	4.02	1.40*** (0.28)	4.04	1.39*** (0.28)	4.03	1.39*** (0.28)	4.02	1.40*** (0.28)	4.04	1.39*** (0.28)	4.04
Number of Children	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87
Single Mother	-0.48* (0.23)	0.62	-0.48* (0.23)	0.62	-0.47* (0.23)	0.62	-0.48* (0.23)	0.61	-0.48* (0.23)	0.62	-0.48* (0.23)	0.62
Market Wage	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54
Non-Labor Income	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91
Country Level												
Maternity Leave Entitlement	0.63 (0.42)	1.87										
Paternity Leave Entitlement			0.29** (0.12)	1.35								
Length of Leave					0.13 (0.15)	1.14						
Length of Paid Leave							0.61*** (0.15)	1.84				
Share of Paid Leave / Total Leave									0.45*** (0.12)	1.58		
Sick Child Leave											-0.23 (0.18)	0.79
Culture	-0.86 (0.91)	0.42	0.17 (0.99)	1.18	-0.92 (0.87)	0.40	0.07 (0.83)	1.07	-1.74 (0.85)	0.17	-0.49 (1.16)	0.61
Employment-Population Ratio	0.97 (0.86)	2.64	0.99 (0.84)	2.71	1.04 (0.83)	2.84	1.83** (0.71)	2.26	1.92** (0.75)	2.85	2.37** (1.07)	3.74
Likelihood Ratio	1.42***		1.29***		1.42***		1.36***		1.68***		1.43***	

Note: Level 1: n = 42,789; Level 2: n = 15; *** = P ≤ 0.01, ** = P ≤ 0.05, * = P ≤ 0.10

Marital Status: 0 = not married; 1 = married / Education: 0 = no more than lower secondary education; 1 = educational achievement beyond compulsory education / Number of Children: 1 = one dependent child; 2 = two dependent children; 3 = three or more dependent children / Parenting Status: 0 = two-parent household; 1 = single-parent household

A Likelihood Ratio Test has been pursued to compare the fit of the individual level model (model 2; null model) with every other model containing country-level factors (alternative model). It is used to establish how many times more likely the data are under the alternative model than the null model. The Likelihood Ratio has been used to compute a p-value to decide whether to reject the null model in favor of the alternative model with *** = P ≤ 0.01, ** = P ≤ 0.05, * = P ≤ 0.10.

Hence, the present findings do not directly help to determine whether the option of parental leave is either detrimental or beneficial for maternal labor supply. However, the preceding analysis has shown that with the existence and with the increasing extent of paternity leave, the odds of maternal labor supply increase. This is in line with the argumentation that existing paternity leave entitlements can shorten the period of time that mothers take off for caregiving in the short run which, in turn, strengthens their labor market attachment and reduces income losses. This can, again, be seen as an argument in favor of the strand of literature that doubts the positive effects of parental leave for mothers.

Furthermore, an increasing number of paid months of maternity leave and an increasing fraction of paid months of the total available leave are positively and significantly associated with maternal labor supply. This finding supports the idea that it is not the option of parental leave itself or a duration that is simply as long as possible that fosters the labor market attachment of mothers. In turn, long durations and fractions of leave that are *paid* are more important which indicates that mothers possibly tend to take up leave more often when these conditions are given which, again, increases their labor market attachment. In the case of long, but mostly unpaid leaves, mothers possibly tend not to opt for parental leave at all, but rather for a full withdrawal from the labor market. A complete drop-out of employment instead of a mere interruption of the employment relation by taking up leave after childbirth means that mothers forego the benefit that is generally related to parental leave – the guarantee of being able to return to their work place. This decreases their labor market attachment and their employment chances in the long run.

The Influence of Childcare Policies on Maternal Labor Supply

Previous research has established reasonable cause to believe that childcare responsibilities are one of the main factors which prevent mothers from carrying out uninterrupted full-time employment (cp. Platenga and Hansen 1999). However, testing the influence of the average level of welfare state incentives across the eight single indicators from the field of childcare on the odds of maternal employment did not show a significant effect. The following regressions attempt to explore if using the average level has potentially covered the effects of the single indicators which are presented in table 4.12. In the present study, the variables on public childcare cover

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the legal, the monetary and the infrastructural dimension of welfare state intervention, because even though a *legal entitlement to infant care and / or kindergarten / pre-school* can be an important precondition, implemented provision, financial support and the quality of care can be central determinants of the maternal labor supply decision as well.

Table 4.12. Level of Welfare State Incentives in the Field of Childcare (2003 – 2010)

Country	Legal Entitlement	Length of the Childcare Day	Childcare Coverage (0-2)	Childcare Coverage (3-5)	Private Costs	Public Spending	Child-Staff-Ratio (0-2)	Child-Staff-Ratio (3-5)
AT	0	0.33	0.09	0.81	0.85	0.37	0	0
BE	0.50	0.66	0.39	1	0.96	0.50	0.50	0.50
DE	0.50	0.33	0.09	0.80	0.92	0.25	0.50	0.50
DK	1	1	0.62	0.90	0.92	1	1	1
ES	0.50	0.50	0.21	0.99	0.96	0.34	0	0.50
FL	1	1	0.35	0.68	0.93	0.87	1	0.50
FR	0.50	1	0.26	1	0.89	0.75	0.50	0
GR	0.50	0.66	0	0.46	0.95	0.25	0	0.50
IE	0.50	0.33	0.15	0.65	0.71	0.16	1	0.50
IT	0.50	0.66	0.06	1	0.96	0.34	0.50	0.50
NL	0.50	0.33	0.39	0.68	0.88	0.34	1	0.50
NO	0	1	0.44	0.85	0.92	0.62	0.50	1
PT	0.50	0.33	0.24	0.78	0.96	0.53	0	0.50
SE	1	1	0.40	0.87	0.94	0.81	1	1
UK	0.50	0.33	0.26	0.79	0.67	0.37	1	0.50
Mean	0.53	0.63	0.26	0.82	0.89	0.50	0.57	0.50

Source: FEMMES Dataset (Appendix B).

Note: Recoded data.

Two variables on *childcare coverage*, i.e. the percentage share of children below the age of three and the percentage share of children aged three to five in childcare, are used to analyze the effect of actual welfare state provision on maternal labor supply. Information on the *continuity of days in public childcare* is included as well to approximate the actual support the welfare state provides since a more comprehensive childcare day provides mothers with a better possibility to supply more than part-time labor. Since the private costs of childcare are seen as a tax on the market income of a working mother, low childcare fees are seen as an equivalent to an effective increase in the wage rate and can therefore be expected to lead to an increase in female labor supply (Blau et al. 2006). Therefore, a variable on *childcare fees as a percentage of the average wage* is included with higher values implying less private childcare costs. Here, it is assumed that a high level of welfare state support with regard to the financial resources that are directed towards public

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childcare, i.e. keeping the private childcare costs as low as possible, has a positive effect on maternal labor supply. The inclusion of a variable on the *public spending on childcare* as a share of the GDP points in the same direction by indicating how much financial support the welfare state allocates for the provision of childcare which can, in turn, indicate how much of the financial burden is passed on to the parents. Furthermore, previous research has suggested that childcare quality can play a role when parents make a decision about transferring a part of the caregiving task to childcare institutions and the parental decision about childcare can indirectly influence the labor supply decision. Therefore, the *child-staff-ratio* in childcare institutions for children below the age of three and for children aged three to five is included as a proxy for the quality of childcare institutions.

The results in table 4.13. show that using the average level of welfare state incentives in the field of childcare has indeed concealed the effects of some of the single indicators. The results also show that it is not the legal entitlement to infant care or preschool that is positively and significantly associated with the odds of maternal labor supply. In turn, a positive and significant association with maternal employment decisions is found for all the indicators referring to the infrastructural side of childcare. The length of the childcare day as well as the actual coverage rates for children of both age groups are significantly and positively associated with maternal labor supply. Furthermore, the amount of resources invested by the state, operationalized by childcare expenditures as a share of the GDP, increases the odds of maternal labor supply as well. In turn, the child-staff ratios and also the private childcare costs do not show a significant association.

Table 4.13. Hierarchical Logistic Regression of the Single Incentives from the Field of Childcare on Maternal Labor Supply

	Model 14 Legal Entitlement		Model 15 Length of the Childcare Day		Model 16 Childcare Coverage (0 – 2)		Model 17 Childcare Coverage (3 - 5)		Model 18 Private Costs		Model 19 Public Spending		Model 20 Child-Staff-Ratio (0 – 2)		Model 21 Child-Staff-Ratio (3 – 5)	
	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio
Individual Level																
Intercept	-0.33 (0.73)	0.72	-2.67 (0.75)	0.07	-0.34 (0.65)	0.71	-1.64** (0.67)	0.19	-0.68 (1.11)	0.50	-0.93 (0.55)	0.39	-0.14 (0.65)	0.86	-0.61 (0.60)	0.54
Age	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06
Married	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97
Education beyond Compulsory Schooling	1.39*** (0.28)	4.02	1.40*** (0.28)	4.04	1.39*** (0.28)	4.03	1.39*** (0.28)	4.02	1.39*** (0.28)	4.02	1.39*** (0.28)	4.02	1.39*** (0.28)	4.02	1.39*** (0.28)	4.02
No. of Children	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87
Single Mother	-0.48* (0.23)	0.62	-0.48* (0.23)	0.62	-0.47* (0.23)	0.62	-0.48* (0.23)	0.61	-0.48* (0.23)	0.61	-0.48* (0.23)	0.61	-0.48* (0.23)	0.61	-0.48* (0.23)	0.61
Market Wage	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54
Non-Labor Income	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91
Country Level																
Legal Entitlement	-0.40 (0.19)	0.66														
Length of the Childcare Day			0.98*** (0.21)	2.66												
Childcare Coverage (0 – 2)					1.43** (0.51)	4.19										
Childcare Coverage (3 - 5)							0.97*** (0.29)	2.64								
Private Costs									0.09 (0.62)	1.10						
Public Spending											1.49*** (0.21)	4.43				
Child-Staff-Ratio (0 – 2)													-0.32 (0.14)	0.72		
Child-Staff-Ratio (3 – 5)															-0.59 (0.17)	0.55
Culture	-1.686 (0.97)	0.18	2.49 (1.06)	2.13	-0.89 (1.01)	0.40	-1.95 (0.83)	1.07	-1.13 (0.95)	0.32	0.08 (0.79)	1.08	-1.95 (0.85)	0.14	-1.61 (0.76)	0.20
Employment-Population Ratio	1.26 (0.81)	3.53	2.51** (0.74)	2.39	0.06 (0.84)	1.07	1.83** (0.72)	2.22	1.16 (0.93)	3.22	0.15 (0.54)	1.16	0.97 (0.79)	2.64	1.85** (0.72)	2.34
Likelihood Ratio	1.39***		1.87**		1.44***		1.69**		1.44***		1.42***		1.36***		1.25***	

Note: Level 1: n = 42.789; Level 2: n = 15; *** = $P \leq 0.01$, ** = $P \leq 0.05$, * = $P \leq 0.10$

Marital Status: 0 = not married; 1 = married / Education: 0 = no more than lower secondary education; 1 = educational achievement beyond compulsory education / Number of Children: 1 = one dependent child; 2 = two dependent children; 3 = three or more dependent children / Parenting Status: 0 = two-parent household; 1 = single-parent household

A Likelihood Ratio Test has been pursued to compare the fit of the individual level model (null model) with every other model containing country-level factors (alternative model). It is used to establish how many times more likely the data are under the alternative model than the null model. The Likelihood Ratio has been used to compute a p-value to decide whether to reject the null model in favor of the alternative model with *** = $P \leq 0.01$, ** = $P \leq 0.05$, * = $P \leq 0.10$.

The Influence of School Policy on Maternal Labor Supply

With regard to the effect of school schedules on maternal labor supply, this relationship can be compared to the relationship between public childcare and maternal labor supply. From a certain age on, school education is normally available to every child without specific legal entitlement and it can be considered as a free (and usually also as a compulsory) opportunity to have a child taken care of for a certain amount of hours during the week and for a certain amount of days per year. However, the specific configuration of the school system differs across countries and just as in the case of childcare for children below school age, it can be assumed that the organization of school education influences the reconciliation of work and family life. In this manner, an *early school starting age* can have a positive effect on maternal labor supply, since an early transition to the guaranteed system of de facto childcare at school implies that mothers have to organize less or even no additional childcare. Furthermore, it is assumed that a larger scope of school schedules is more favorable for maternal employment. Therefore, information on the *number of school hours per week* (for school students in primary and secondary education) and on the *number of school days per year* is included to approximate the comprehensiveness of public school schedules. A high comprehensiveness of school week and school year decreases the need for childcare beyond the regular school schedules which will, in turn, is assumed to have a positive effect on maternal labor supply.

Table 4.14. Level of Welfare State Incentives in the Field of School Policy (2010)

Country	School Starting Age	School Hours Per Week (Primary Education)	School Hours Per Week (Secondary Education)	School Days Per Year
AT	0.33	0.66	0.87	0.85
BE	0.33	0.96	0.85	0.86
DE	0.33	0.82	0.75	0.93
DK	0.33	0.82	0.87	0.87
ES	0.33	0.50	0.75	0.82
FL	0	0.63	0.75	0.90
FR	0.33	0.80	0.69	0.85
GR	0.66	0.92	0.87	0.82
IE	0.33	0.83	0.96	0.85
IT	0.33	0.90	0.72	0.94
NL	0.66	0.78	0.65	0.94
NO	0.33	0.66	0.75	0.90
PT	0.33	0.82	0.64	0.85
SE	0	1	1	0.84
UK	1	0.73	0.61	0.92
Mean	0.37	0.79	0.78	0.88

Source: FEMMES Dataset (Appendix B).

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Note: Recoded data. Table 4.15. Hierarchical Logistic Regression of the Single Incentives from the Field of School Policy on Maternal Labor Supply

	Model 22 School Starting Age		Model 23 School Hours Per Week (Primary Education)		Model 24 School Hours Per Week (Secondary Education)		Model 25 School Days Per Year	
	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio
Individual Level								
Intercept	- 0.46 (0.69)	0.63	0.12 (0.95)	1.11	-0.47 (0.81)	0.63	1.65 (0.84)	3.66
Age	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06
Married	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97
Education beyond Compulsory Schooling	1.39*** (0.28)	4.02	1.40*** (0.28)	4.04	1.39*** (0.28)	4.03	1.39*** (0.28)	4.02
Number of Children	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87
Single Mother	-0.48* (0.23)	0.62	-0.48* (0.23)	0.62	-0.47* (0.23)	0.62	-0.48* (0.23)	0.61
Market Wage	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54
Non-Labor Income	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91
Country Level								
School Starting Age	-0.19 (0.22)	0.82						
School Hours Per Week (Primary Education)			-0.69 (0.51)	0.49				
School Hours Per Week (Secondary Education)					-0.23 (0.44)	0.79		
School Days Per Year							-1.04 (0.76)	0.17
Culture	-1.02 (0.94)	0.36	-1.16 (0.87)	0.31	-1.08 (0.89)	0.34	-1.62 (0.69)	0.19
Employment- Population Ratio	1.03 (0.84)	2.79	0.96 (0.89)	2.60	1.23 (0.84)	3.45	0.15 (0.63)	1.17
Likelihood Ratio	1.49***		1.37***		1.48***		1.56***	

Note: Level 1: n = 42.789; Level 2: n = 15; *** = P ≤ 0.01, ** = P ≤ 0.05, * = P ≤ 0.10
Marital Status: 0 = not married; 1 = married / **Education:** 0 = no more than lower secondary education; 1 = educational achievement beyond compulsory education / **Number of Children:** 1 = one dependent child; 2 = two dependent children; 3 = three or more dependent children / **Parenting Status:** 0 = two-parent household; 1 = single-parent household
 A Likelihood Ratio Test has been pursued to compare the fit of the individual level model (null model) with every other model containing country-level factors (alternative model). It is used to establish how many times more likely the data are under the alternative model than the null model. The Likelihood Ratio has been used to compute a p-value to decide whether to reject the null model in favor of the alternative model with *** = P ≤ 0.01, ** = P ≤ 0.05, * = P ≤ 0.10.

Table 4.15. shows the result of the hierarchical logistic regressions of the four single indicators from the field of school policy on maternal employment. Just as in the preceding models, the individual level effects remain unchanged and prove to be congruent with the assumptions of labor supply theory. However, none of the independent variables from the field of school policy shows a significant and positive effect. One possible explanation for this can be that, in a certain sense, school policy sets in too late. For mothers who decide to enter or return to the labor market before their children reach school age, the determining welfare state incentives are possibly located in other policy fields, such as parental leave and childcare. In turn, for mothers who postpone their return to the labor market until their children start attending school, even early school starting ages and comprehensive school schedules can not necessarily outbalance the weakened labor market attachment and the loss of human capital caused by a comparably long interruption of employment. Even though school policies can indeed be considered beneficial for the reconciliation of work and family life, they do not appear to be a significant factor for maternal labor supply.

The Influence of Employment Law on Maternal Labor Supply

Policies from the field of employment law basically capture the flexibility at the workplace and mostly refer to the protection of employees from inappropriately high working hours and discrimination, to the compensation of overtime and to the regulation of vacation time. These working conditions can be assumed to affect maternal labor supply because they indicate the possibility of the reconciliation of work and family life without substantial income losses. To cover the various aspects of this policy field, information on three working time related factors is included as well as information on two payment related factors. The working time related variables refer to the *length of the standard full-time workweek* where a short full-time principle (less than 40 hours per week) is considered most beneficial. Furthermore, they refer to the amount of the *legally guaranteed vacation days per year* and to *the number of mandatory paid holidays* which can give an indication on how feasible the reconciliation of work and family life is throughout the year. The payment related variables refer to the *premiums for the first and the second set of overtime hours* to capture to what extent the potential costs of overtime work, such as

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the need for additional childcare, are outweighed. Finally, two variables contain information on the treatment of part-time employees. If working full-time is not a feasible option for mothers, it is important that the welfare state provides for the *possibility of part-time employment without the risk of discrimination* with regard to the benefits enjoyed by the full-time workers, such as leaves, overtime premiums and social security and with regard to the legal rights to advance notice and separation fees for the termination of the employment contract.

Table 4.16. Level of Welfare State Incentives in the Field of Employment Law (2004)

Country	Part-Time Benefit Protection	Part-Time Contract Termination Protection	First Premium for Overtime	Second Premium for Overtime	Maximum Weekly Working Hours	Minimum Vacation	Number of Paid Holidays
AT	1	1	1	0	0.50	1	1
BE	1	1	1	0	0.50	0.80	0.66
DE	1	1	0.50	0	0	0.66	0.66
DK	1	1	1	0	1	0.83	0
ES	1	1	0	0	0.50	1	0.80
FL	1	1	1	1	0.50	0.80	0.73
FR	1	0	0.50	0.50	1	1	0.06
GR	1	1	0.50	0.75	0.50	0.66	0.26
IE	1	1	1	0	0	0.73	0.60
IT	0	1	0	0	0.50	0.93	0.73
NL	1	1	0.50	0.50	0.50	0.66	0.46
NO	0	1	1	0	0.50	0.83	0.60
PT	1	1	1	0.75	0.50	0.80	0.80
SE	1	1	1	0.60	0.50	0.83	0.66
UK	1	1	0	0	0.50	0.93	0
Mean	0.87	0.93	0.67	0.27	0.50	0.83	0.53

Source: FEMMES Dataset (Appendix B).

Note: Recoded data.

Table 4.17. presents the results of the hierarchical logistic regressions of the single indicators from the field of employment law on maternal labor supply. The two measures against the discrimination of part-time employees do not show a significant effect and neither do the premium for the second set of overtime hours and the number of paid holidays. However, the three remaining variables are positively and significantly associated with maternal employment, suggesting that just as in the case of childcare policies, using the average level of welfare state incentives in the field of employment law has indeed concealed the effects of some of the single indicators. With a rising compensation for the first set of overtime hours, the odds of maternal labor supply increase which is congruent with the assumption that mothers are more

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likely to supply labor to the market when they know that occasional overtime work is compensated well enough to cover the potential additional childcare costs and to not imply an effective decrease of their market wage. Apart from the premium for the first set of overtime hours, the length of the standard full-time workweek and the number of legally guaranteed vacation days per year have a positive and significant effect on the odds of maternal labor supply as well, indicating that, on the one hand, an existing concept of short full-time (less than 40 hours per week) and, on the other hand, an increasing amount of predictable time off from work helps reconciling work and family life and increases the probability of maternal employment.

Table 4.17. Hierarchical Logistic Regression of the Single Incentives from the Field of Employment Law on Maternal Labor Supply

	Model 26 Part-Time Benefit Protection		Model 27 Part-Time Contract Termination Protection		Model 28 First Premium for Overtime		Model 29 Second Premium for Overtime		Model 30 Maximum Weekly Working Hours		Model 31 Minimum Vacation		Model 32 Number of Paid Holidays	
	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio
Individual Level														
Intercept	-0.85 (0.69)	0.43	-0.84* (0.45)	0.43	-0.23 (0.61)	0.79	-0.63 (0.72)	0.53	-0.96* (0.44)	0.38	.168** (0.59)	0.18	-0.46 (0.66)	0.63
Age	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06
Married	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97
Education beyond Compulsory Schooling	1.39*** (0.28)	4.02	1.40*** (0.28)	4.04	1.39*** (0.28)	4.03	1.39*** (0.28)	4.02	1.39*** (0.28)	4.02	1.39*** (0.28)	4.02	1.39*** (0.28)	4.02
No. of Children	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87
Single Mother	-0.48* (0.23)	0.62	-0.48* (0.23)	0.62	-0.47* (0.23)	0.62	-0.48* (0.23)	0.61	-0.48* (0.23)	0.61	-0.48* (0.23)	0.61	-0.48* (0.23)	0.61
Market Wage	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54	0.53 (0.47)	1.54
Non-Labor Income	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91
Country Level														
Part-Time Benefit Protection	-0.25 (0.13)	0.77												
Part-Time Contract Termination Protection			-0.84 (0.11)	0.43										
First Premium for Overtime					0.28.** (0.12)	1.33								
Second Premium for Overtime							0.07 (0.15)	1.07						
Maximum Weekly Working Hours									0.85*** (0.08)	2.34				
Minimum Vacation											1.22*** (0.30)	3.39		
Numer of Paod Holidays													-0.25 (0.16)	0.78
Culture	-0.79 (0.87)	0.45	0.24 (0.54)	1.27	-1.27 (0.82)	0.28	-0.78 (0.96)	0.46	-1.29** (0.44)	0.27	-2.04** (0.65)	0.13	-1.17. (0.86)	0.31
Employment- Population Ratio	1.84 (0.83)	3.33	2.43*** (0.49)	4.31	0.29 (0.73)	1.33	1.09 (0.85)	2.99	1.11** (0.41)	3.03	1.54** (0.62)	3.66	1.18 (0.79)	3.28
Likelihood Ratio	1.53***		1.27***		1.33***		1.40***		1.38***		1.63***		1.41***	

Note: Level 1: n = 42,789; Level 2: n = 15; *** = $P \leq 0.01$, ** = $P \leq 0.05$, * = $P \leq 0.10$
 Marital Status: 0 = not married; 1 = married / Education: 0 = no more than lower secondary education; 1 = educational achievement beyond compulsory education /
 Number of Children: 1 = one dependent child; 2 = two dependent children; 3 = three or more dependent children / Parenting Status: 0 = two-parent household; 1 = single-parent household
 A Likelihood Ratio Test has been pursued to compare the fit of the individual level model (null model) with every other model containing country-level factors (alternative model). It is used
 to establish how many times more likely the data are under the alternative model than the null model. The Likelihood Ratio has been used to compute a p-value to decide whether to reject
 the null model in favor of the alternative model with *** = $P \leq 0.01$, ** = $P \leq 0.05$, * = $P \leq 0.10$.

The Influence of Taxation and Allowances on Maternal Labor Supply

The welfare state does not only provide legal entitlements and services, but also more direct financial benefits for families. It can indeed be argued that for the most part, the main intention of *family cash benefits* and *family tax breaks* is not related to the question of maternal employment, but rather to the question of the general financial well-being of families.

Table 4.18. Level of Welfare State Incentives in the Field of Taxation and Allowances (2007)

Country	Family Cash Benefits	Family Tax Breaks
AT	0	0.1
BE	0.25	0.5
DE	0.50	1
DK	0.25	0
ES	1	0.2
FL	0.50	0
FR	0.50	0.7
GR	0.75	0
IE	0	0.2
IT	0.75	0
NL	0.75	0.4
NO	0.25	0.2
PT	0.75	0.2
SE	0.25	0
UK	0	0.4
Mean	0.43	0.26

Source: FEMMES Dataset (Appendix B).

Note: Recoded data.

However, according to labor supply theory, family cash benefits can actually have a negative effect on maternal labor supply because they can increase the reservation wage which, in turn, lowers the utility of supplying labor to the market. For the purpose of the present study, family cash benefits are therefore understood as a disincentive for maternal labor supply and the level of welfare state incentives for maternal labor supply will be rated higher when the share of the GDP spent on family cash benefits is lower. The opposite is the case with regard to family tax breaks, since in most cases, earnings from employment are the kind of income that is subject to taxation (compared to, for instance, some social benefits). Therefore, *family tax breaks* are an important incentive and policy instrument to increase the effective market wage of a working mother and the present study includes a variable on tax breaks as a share of the GDP.

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Table 4.19. Hierarchical Logistic Regressions of the Single Incentives from the Field of Taxation and Allowances on Maternal Labor Supply				
	Model 33 Family Cash Benefits		Model 34 Family Tax Breaks	
	β (SE)	Odds- Ratio	β (SE)	Odds- Ratio
Individual Level				
Intercept	-0.45 (0.77)	0.64	-0.39 (0.68)	0.68
Age	0.06*** (0.01)	1.06	0.06*** (0.01)	1.06
Married	-0.03 (0.08)	0.97	-0.03 (0.08)	0.97
Education beyond Compulsory Schooling	1.39*** (0.28)	4.02	1.40*** (0.28)	4.04
Number of Children	-0.14*** (0.04)	0.87	-0.14*** (0.04)	0.87
Single Mother	-0.48* (0.23)	0.62	-0.48* (0.23)	0.62
Market Wage	0.53 (0.47)	1.54	0.53 (0.47)	1.54
Non-Labor Income	-0.09** (0.03)	0.91	-0.09** (0.03)	0.91
Country Level				
Family Cash Benefits	-0.09 (0.18)	0.91		
Family Tax Breaks			-0.24 (0.16)	0.78
Culture	-1.47 (0.88)	0.23	-1.36 (0.86)	0.26
Employment-Population Ratio	1.09 (0.93)	3.00	1.00 (0.16)	2.73
Likelihood Ratio	1.46***		1.48***	

Note: Level 1: n = 42.789; Level 2: n = 15; *** = P ≤ 0.01, ** = P ≤ 0.05, * = P ≤ 0.10
Marital Status: 0 = not married; 1 = married / **Education:** 0 = no more than lower secondary education; 1 = educational achievement beyond compulsory education / **Number of Children:** 1 = one dependent child; 2 = two dependent children; 3 = three or more dependent children / **Parenting Status:** 0 = two-parent household; 1 = single-parent household
 A Likelihood Ratio Test has been pursued to compare the fit of the individual level model (null model) with every other model containing country-level factors (alternative model). It is used to establish how many times more likely the data are under the alternative model than the null model. The Likelihood Ratio has been used to compute a p-value to decide whether to reject the null model in favor of the alternative model with *** = P ≤ 0.01, ** = P ≤ 0.05, * = P ≤ 0.10.

Table 4.19. shows the results of the hierarchical logistic regressions of the single indicators from the field of employment law on maternal labor supply. Just as in the

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preceding models, the individual level effects remain unchanged and congruent with the assumptions of labor supply theory. However, none of the independent variables from the field of taxation and allowances shows a significant and positive effect on the odds of maternal labor supply.

This finding can be understood as a confirmation of the general critique of welfare state research which found fault with the focus on the financial side on social policy and called for a more in-depth analysis of the specific configuration of welfare state policies (cp. Therborn 1987 / Gilbert and Moon 1988). In this manner, Gilbert and Moon have argued that mere expenditure data do not take actual need into account. In the case of family policy, high levels of public expenditure on cash benefits or tax breaks do not necessarily stand for extraordinary welfare state generosity, but can simply reflect a high number of recipients and the finding also underlines the assumption that the qualitative dimension of welfare state policy, such as services and legal entitlements, has to be taken into consideration.

5. CONCLUSION

Welfare state incentives for maternal labor supply have been at the heart of the present study. Even early feminist welfare state research has already established reasonable causes to assume that the relationship between the welfare state and its female citizens could hardly be compared to the relationship between the welfare state and its male citizens. In this context, being able to supply labor to the market is especially important. In the absence of unconditional income guarantees, the utmost degree of financial independence from the spouse, the family and also from the state can only be achieved by being employed and while this has never been raised to question for men, it has only slowly become a permanent feature in women's realities. And even though facilitating the access to paid work and creating incentives for labor force participation somehow implies commodification which has been established as a condition of which (the ideal-typical and male) worker seeks to be relieved from, it can be exactly this process of commodification which will also enable women and mothers to demand the same rights of decommodification that their male counterparts are already entitled to.

However, and despite the vast amount of research that feminist welfare state research has directed towards female and maternal employment, the present study has attempted to fill a number of specific research gaps. Feminist welfare state research has provided a large number of very detailed studies which focus on the case of one specific country or small-n comparisons (cp. Peattie and Rein 1983; Shaver 1983; Lewis 1992; Lewis 2001; Orloff 1993; O'Connor 1999). Furthermore, existing gender-sensitive studies that cover a larger number of countries have often focused on policy measures from the fields of early childhood education and care and parental leave schemes and they have often used a very condensed operationalization (Gornick et al. 1996a; Stier et al. 2001; Pettit and Hook 2005 / 2009). Other studies have focused on the financial or benefit side of social policies for women which can, in the context of the support of female employment, result in misleading findings because family welfare does not necessarily equal female welfare (cp. Siaroff 1994; Gauthier 1999; for an overview cp. Van der Lippe / Van Dijk 2002).

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The attempt of the present study has been to overcome these research gaps by using a selection of 27 very specific incentives for maternal labor supply which cover 22 OECD countries and five different policy fields – parental leave, childcare and taxation and allowances, but also employment law and school policy. This selection of indicators has been used to pursue two connected research purposes. The first research question has been directed at a comparison of these incentives at the country level to attain a more comprehensive picture of how welfare states can be classified according to their support of maternal employment. This purpose has been accompanied by a critical review and appreciation of existing welfare state comparisons. This review has shown how welfare state research has moved from explaining the emergence of the welfare state itself by means of the three dominant social expenditure based approaches - the structuralist, the institutionalist and the power resources approach - to more detailed and more in-depth conceptualizations of welfare state policy which can be found in the so-called welfare state regime literature. This review has also shown that both the traditional approaches and the early welfare state typologies have been widely criticized for their ignorance of the gender dimension and that feminist welfare state research has established reasonable cause to assume that gender-insensitive typologies have to be reassessed to establish gender-sensitive welfare state comparisons which take the specific relationship between the state and its female citizens into account. However, the review of this research reveals that feminist welfare state research has remained inconclusive about how and why countries can be assumed to cluster when the gender dimension is taken into account. Findings range from welfare state typologies with clusters that are very comparable to traditional regimes to the reassessment of the position of single countries and it is not unreasonable to assume that this has to be accounted for by the afore-mentioned potential shortcomings of the feminist line of welfare state research.

Applying the selection of 27 incentives for maternal labor supply from the fields of childcare, parental leave, employment law, school policy and taxation and allowances, assembled in the FEMMES Dataset compiled for the purpose of the present study, to a comparison of welfare states at the country level has led to results that only partly confirm the findings of previous research. The country-level analysis

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has presented descriptive information on cross-national variation of welfare state incentives for maternal labor supply across 22 OECD countries. This descriptive information has already given some indication that conventional welfare state types are likely not to be appropriate to classify countries according to their level of incentives for maternal labor supply. A subsequent cluster analysis revealed that countries are indeed likely to be classified in a way that is considerably different from traditional welfare state typologies. Analyses of variance have been used to underline the inappropriateness of traditional welfare state types and the better suitability of the country groups established by means of the cluster analysis. The here established country groups differ according to the level and the policy focus of welfare state incentives for maternal labor supply⁸. In this way, for instance, France has been found to cluster with a number of Scandinavian countries, the Netherlands show a high degree of similarity with welfare states in Southern Europe, Germany has been found to group with countries from the liberal welfare regime and Canada has been found to cluster with a number of conservative welfare states. Since this mere result has, however, not revealed enough about its causes, the country analysis was followed by three in-depth country studies by means of the cases of Norway, Canada and Germany. As the only Scandinavian country that is not grouping with its usual counterparts, Norway has turned out to be characterized by less pronounced welfare state incentives for maternal labor supply, even though the country resembles other social-democratic welfare states in many respects, such as the political system and the general universal and egalitarian features of social policy. Industrialization and the increase in female labor force participation have taken place at a slightly later stage than in Denmark, Sweden and Finland and the creation of welfare state incentives for female labor supply has developed more slowly. The country study has shown that in comparison to other Scandinavian countries, Norway has proven to be characterized by considerably more conservative attitudes towards family structures and maternal employment. The fact that Norway shares this characteristic with Australia, a country that it has been grouped with in the present cluster analysis, further supports the fact that the more traditional attitudes towards family life have been one of the significant driving forces behind Norway falling behind.

⁸ Cluster 1: France, Sweden, Denmark and Finland. Cluster 2: Netherlands, Portugal, Spain and Greece. Cluster 3: Belgium, Italy and Canada. Cluster 4: Australia, Luxembourg, Austria and Norway. Cluster 5: Germany, Ireland, UK, New Zealand and Switzerland. Cluster 6: USA and Japan.

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A more detailed look at the situation in Canada has given some insights about how and why the country performs differently from its usual liberal welfare state family. It can most certainly be said that Canada provides a higher level of welfare state incentives for maternal labor supply than other liberal welfare states. It also appears that it is more the differences from other liberal welfare states than proximity to non-liberal welfare states that leads Canada to cluster away from its traditional welfare state family. Nevertheless, both the historical similarities with other liberal welfare states and the European origins of the country have to be taken into consideration. A closer examination of the development of Canadian social policy shows that it cannot be ruled out that Canada has maintained a higher proximity to its European roots than other typical immigration countries like the United States and that the influence of its liberal neighbors has not manifested itself in every field of social policy.

In the present analysis, Germany has been clustered with liberal welfare states like the United Kingdom and late female mobilization welfare states like Ireland. This country cluster shows a relatively low level of welfare state incentives for maternal labor supply and in the case of Germany, the combination of two more or less subsequent developments can be held accountable for that. Just like Ireland, Germany has started off as a welfare state that has been heavily influenced by religious traditions, leading to limited welfare state intervention in family issues and a promotion of traditional family structures. But the promotion of traditional family structures has not prevented the German female labor force participation rate to increase. In this sense, Germany has undergone the same societal changes than many other European countries. However, the original conservative attitude towards welfare state intervention in family structures has recently been joined by a more liberal attitude towards social policy. This type of move towards Anglo-American politics has not led to more welfare state intervention either. By contrast, it is characterized by an emphasis of individual responsibilities and a conditionality of rights. Limited welfare state intervention due to religious traditions in combination with a turn towards more liberal social policies can be considered one possible cause for Germany's low level of welfare state incentives for maternal labor supply.

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The second research question has been directed at a validation of feminist welfare state research that has dealt with the actual effects of welfare state policy on the labor market situation of women. Again, this purpose has been accompanied by a critical review of existing studies. When reviewing the vast amount of welfare state literature, it cannot go unnoted that welfare state research has not only moved to an incorporation of the gender perspective, but also to explaining the actual effects of social policy on societies and individual lives. Early studies of this line of research have been criticized for their focus on questions of poverty and income inequality and feminist welfare state research has contributed to a more in-depth analysis of the effects of welfare state policy on the specific living situation of women and mothers. In the present study, the selection of 27 welfare state incentives for maternal labor supply has also been applied to the analysis of individual employment decisions of mothers and it presents a combination and extension of factors that have been established as meaningful determinants of maternal labor supply in earlier research.

This multi-level analysis has led to further insights. Introducing individual level data from the *European Union Statistics on Income and Living Conditions 2005* (EU SILC) for over 40.000 mothers from 15 European countries has shown that under control of their individual characteristics, such as age, the educational background, market wage, the non-labor income, the number of children and the marital and parenting status, and under control of other country level characteristics, such as the extent of conservative attitudes towards working mothers and the general labor market situation for women, the average level of incentives in the field of parental leave turned out to be the only welfare state incentive that, on average, has proven to be significantly and positively associated with maternal labor supply. However, since condensed measurements can be assumed to conceal the effects of the single indicators hidden by the average value for each policy field, further analyses have used the single indicators from each policy field as explanatory variables in separate models.

Further analyses using the six single indicators from the field of parental leave show that the availability of paternity leave, the length of paid leave in months and the fraction of the total leave that is covered by the wage replacement prove to be

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significantly and positively associated with maternal employment. This is in line with the argumentation that existing paternity leave entitlements can lead mothers to reduce the period of time that they take off for caregiving which, in turn, strengthens their labor market attachment and reduces income losses. This can, again, be seen as an argument in favor of the strand of literature that doubts the positive effects of parental leave for mothers, since the opportunity of sharing parental leave with the fathers, i.e. taking up less leave themselves, is positively associated with maternal employment. Additionally, the length of the paid leave and the paid fraction of the total leave being significantly associated with maternal labor supply can be seen as an argument in favor of a configuration of parental leave that represents a favorable option for mothers. Existing and long, but only partially paid leave and the concomitant income losses can be so unattractive for mothers that they rather opt for a complete withdrawal from the labor market after childbirth which decreases their labor market attachment and their employment chances in the long run.

A detailed analysis of the effect of the single incentives from the field of early childhood education and care has shown that using the average level of welfare state incentives has indeed concealed the effects of some of the single indicators. More importantly, the results have shown that it is not the legal entitlement to care which is positively and significantly associated with maternal labor supply. Positive and significant associations with maternal employment decisions are found for all the indicators referring to the infrastructural side of childcare. The length of the childcare day as well as the actual coverage rates for children of both age groups are significantly and positively associated with the odds of maternal labor supply. Furthermore, the amount of resources invested by the state, operationalized by childcare expenditures as a share of the GDP, increases the odds of maternal labor supply as well. In turn, the child-staff ratios and also the private childcare costs do not show a significant association.

Keeping this result in mind, it can appear surprising that none of the single indicators from the field of school policy is positively and significantly associated with maternal labor supply, since school schedules can be considered as institutionalized, guaranteed and free childcare. One possible explanation for this can be that, in a

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certain sense, school policy sets in too late. For mothers who decide to enter or return to the labor market before their children reach school age, the important welfare state incentives are possibly located in other policy fields, such as parental leave and childcare. In turn, for mothers who intend to postpone their return to employment until their children start attending school, even early school starting ages and encompassing school schedules can not necessarily compensate for the weakened labor market attachment and the loss of human capital caused by a comparably long interruption of employment.

Just as in the case of childcare, however, a detailed analysis of the seven single indicators from the field of employment law has shown that using the average level of welfare state incentives has covered the positive and significant effects of the length of the standard workweek, the minimum number of vacation days per year and the compensation for the first set of overtime hours. These findings are congruent with the assumptions that mothers are more likely to supply labor to the market when they know that occasional overtime work is compensated well enough to cover the potential additional childcare costs. It is also congruent with the assumption that less working time per week and year increases the probability of maternal employment because an existing concept of short full-time (less than 40 hours per week) and an increasing amount of predictable time off from work helps reconciling work and family life. Eventually, the analysis of the effects of the two single indicators from the field of taxation and allowances has shown that neither the public expenditures for family cash benefits nor for family tax breaks are related to the odds of maternal labor supply. This can be understood as a confirmation of the critique of traditional and also gender-sensitive welfare state research demanding the careful use of expenditure data and of financial indicators for welfare state effort (Therborn 1987 / Gilbert and Moon 1988).

Which lessons can be learned from the present study and which open questions remain for future research? On the one hand, the findings have shown that using a strict and comprehensive set of single incentives for labor supply from the fields of childcare, parental leave, employment law, school policy and taxation and allowances for a welfare state comparison across a larger number of countries leads

to the establishment of welfare state types which are different from traditional and even existing feminist welfare state typologies. However, the case studies for Norway, Germany and Canada have also shown that the underlying potential causal mechanisms are strongly depending on the individual country's history and politics. While in the case of Norway, the onset of events like the industrialization of the economy and the conservative attitudes towards the specific role of mothers (as opposed to the liberal attitudes towards cohabitation of unmarried couples) appear to have played a role, Canada seems to have kept a stronger proximity to its European roots than other liberal immigration countries like the United States and New Zealand. In turn, the combination of a strong religious tradition and a strong liberal turn within social policy has moved Germany closer to the liberal welfare states than other typical conservative countries. This variety of possible causes for the extent of state support for maternal employment indicates that an investigation beyond the scope of the present dissertation, i.e. for a larger number of countries than the three present cases, could lead to further insights. In this manner, an investigation of these causes could even help clarify whether the classification of welfare states into types is even appropriate on the basis of quantifiable policy data or if in the case of welfare state incentives for maternal labor supply, qualitative historical data have to be taken more into consideration. A detailed retracement of the individual country's causes for a certain policy configuration can also lead to suggestions of reform and improvement that are adjusted to the country's history.

On the other hand, the establishment of a number of crucial factors from the field of employment law points in the direction that feminist welfare state research should not only focus on the most obvious policy fields, such as parental leave and childcare. Additionally, since the preservation of the labor market attachment appears to be a crucial factor, further research should also be directed at other measures that help new mothers maintain their human capital and their relation to their workplace, measures which are, for instance, rather to be found in the field of active labor market and education policy. Further research could also turn towards analyzing the effect of the school system in relation to incentives from other policy fields to examine if comprehensive school systems could actually prove to be a significant factor in combination with policies that set in before children reach school

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age. Here, also the continuity of the school day or possibilities of out-of-school care could be taken into account. Apart from suggestions for future research, the present findings also point to certain practical policy implications. If policy makers are truly interested in increasing the financial independence of women by rising their probability of labor supply, irrespective of potential underlying attitudes in society, this study points to a few steps that can be taken. It appears that maternal labor supply highly depends on preserving the labor market attachment even after childbirth. Parental leave arrangements that are a favorable option by being fully paid, i.e. that keep women from dropping out of the labor market completely, seem just as important as the provision of paternity leave that increases the probability that both parents take time off from work after childbirth. The probability of more or less uninterrupted employment is also increased by the actual provision and support of full time childcare services. Legal entitlements alone are not crucial when the states do not turn rhetoric into action. Furthermore, many states can improve the employment chances of mothers by introducing the long claimed standard workweek of less than 40 hours which has to date only become reality in very few European countries. Additionally, this regulation could create more employment opportunities for the entire society and would not only be beneficial for working mothers.

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Appendix A: Brief Overview of the Individual and Country Level Variables

Individual Level Variables (EU SILC 2005 / n = 42.789)

- (1) **basic activity status**
dichotomous variable measuring if the individual is unemployed (0) or employed (1)
- (2) **individual market income**
yearly gross cash income in EUR from employment including additional payments, such as overtime premiums, commissions and thirteen month payments before the deduction of social security contributions and taxes (gross monthly earnings in EUR for Spain, Italy, Greece and Portugal)

information for women without own income or earnings from employment has been imputed by means of the Heckman correction for about 16.000 women in the sample
- (3) **non-labor income**
total disposable household income (income from employment for all household members, income from capital and property, social benefits) in EUR minus the individual market income of the woman living in the household (see (2))
- (4) **age**
originally measured in years from 0 to 80; limited to women between 25 and 54 years for the purpose of the present study
- (5) **education**
originally subdivided into six categories; broken down into two categories (0 = no education beyond compulsory schooling / 1 = education beyond compulsory schooling) for the purpose of the present study
- (6) **number and age of children**
originally measuring the composition of households; broken down into three categories (1 = living in a household with one dependent child, 2 = living in a household with two dependent children, 3 = living in a household with three or more dependent children) for the purpose of the present study
- (7) **marital status**
dichotomous variable measuring if the individual has never been married, is separated, divorced or widowed (0) or if the individual is currently married (1)
- (8) **parenting status**
originally measuring the composition of households; broken down into two categories (0 = two-parent household, 1 = single-mother household) for the purpose of the present study

FEMMES Dataset (Female and Maternal Employment Support)

All variables range between 0 and 1. Higher values always imply a higher level of incentives.

PARENTAL LEAVE

- (1/2) statutory entitlement to maternity / paternity leave**
existence of statutory entitlement to leave and extent of replacement rate (0 = no statutory entitlement / 0.33 = statutory entitlement, but unpaid / 0.66 = statutory entitlement, but low flat rate or < 50 % of earnings or not universal or not paid for the full period / 1 = statutory entitlement and > 50 % of earnings)
- (3) length of leave in months**
equals 1 when length of leave = 36 months (maximum length)
countries with a lower value are assigned a percentage share
- (4) length of paid leave in months**
equals 1 when length of paid leave = 36 months (maximum paid length)
countries with a lower value are assigned a percentage share
- (5) share of paid period of leave**
paid period of leave (4) as a share of the total length of leave (3)
equals 1 when 100% of leave is paid
- (6) sick child leave**
existence of statutory entitlement and extent of replacement rate plus additional leave entitlements covering a wider range of family members other than young children and/or situations of serious illness

EARLY CHILDHOOD EDUCATION AND CARE

- (1) legal entitlement to infant care and / or kindergarten / pre-school care**
equals 1 when legal entitlement to both infant care and kindergarten exists,
equals 0.50 when legal entitlement to either one of them exists and equals 0
when there is no legal entitlement at all
- (2/3) childcare coverage for children aged 0 to 2 / 3 to 5**
percentage share of children in childcare in the respective age groups
- (4) private childcare costs**
private expenditures for childcare as a share of the family net income
- (5) public childcare spending**
public expenditures on infant care and pre-primary education as a share of the GDP

- (6) **length of the childcare day**
equals 1 when mostly full-time, equals 0.66 when there is a mixture of part-time and full-time offers and equals 0.33 when mostly part-time
- (7) **child-staff ratio for children aged 0 to 2**
equals 1 when child-staff-ratio is ≤ 5.5 , equals 0.5 when child-staff ratio is ≥ 6 and ≤ 8.5 and equals 0 when child-staff ratio is ≥ 9
- (8) **child-staff ratio for children aged 3 to 5**
equals 1 when child-staff-ratio is ≤ 12 , equals 0.5 when child-staff ratio is ≥ 13 and ≤ 16 and equals 0 when child-staff ratio is ≥ 16.5

SCHOOL POLICY

- (1) **school starting age**
start of institutionalized, compulsory and guaranteed public education (equals 1 when start of compulsory schooling is at age 4, equals 0.66 when start of compulsory schooling is at age 5, equals 0.33 when start of compulsory schooling is at age 6 or 6.5 and equals 0 when start if compulsory schooling is at age 7)
- (2) **length of the school week in primary education**
equals 1 when number of school hours per week = 30 (maximum value)
countries with a lower value are assigned a percentage share
- (3) **length of the school week in secondary education**
equals 1 when number of school hours per week = 40 (maximum value)
countries with a lower value are assigned a percentage share
- (4) **length of the school year**
equals 1 when number of school days per year = 212 (maximum value)
countries with a lower value are assigned a percentage share

EMPLOYMENT LAW

- (1) **part-time benefits**
equals 1 when part-time workers receive at least half of the benefits enjoyed by the full-time worker (leaves, overtime premium, social security)
- (2) **part-time contract termination**
equals 1 when part-time workers enjoy at least half of the legal rights to advance notice and separation fees for the termination of the employment contract of full time workers
- (3) **number of paid holidays per year**
equals 1 when the number of paid holidays per year = 15 (maximum value)
countries with a lower value are assigned a percentage share

- (4) **premium for the first set of overtime hours**
equals 1 when the premium is at least 150% of the normal wage, equals 0.50 when the premium is at least 125% of the normal wage and equals 0 when the premium is less than 125% of the normal wage
- (5) **premium for each hour after the first set of overtime hours a week**
equals 1 when the premium for the second set of overtime is at least 200% of the normal wage and equals 0 when there is no additional premium for a second set of overtime hours; the values in between reflect the actual additional wage increase in relation to the normal wage
- (6) **maximum number of working hours per week**
length of the standard full-time workweek (short full-time = less than 40 hours (1), normal full-time = 40 hours (0.5), long full-time = more than 40 hours (0))
- (7) **minimum number of vacation days per year**
equals 1 when the number of paid holidays per year = 30 (maximum value)
countries with a lower value are assigned a percentage share

TAXATION AND ALLOWANCES

- (1) **family cash benefits**
public expenditures for family cash benefits as a share of the GDP
- (2) **family tax breaks**
public expenditures for family tax breaks as a share of the GDP (the value of the maximum tax break is 1%; countries with a lower value are assigned their actual share of the GDP)

COUNTRY LEVEL CONTROL VARIABLES

- (1) **female employment-population ratio**
share of women of working age (15 – 64) in employment as a percentage share of the entire female population of working age
- (2) **culture**
share of the population that shows (strong) disagreement with the statement that working mothers can establish a relationship with her children that is just as warm and secure as the relationship that stay-at-home mothers can potentially establish with their children as a percentage share of the entire population

Appendix B: Original and Recoded Data (FEMMES Dataset – Female and Maternal Employment Support)

Employment Law (2004)

Country	Variables	Part-Time		No. of Paid		Premium for		Premium for		Max. Hours / Week		Minimum Vacation	
		Benefits	Contract Termination	Holidays	Overtime I	Overtime II	Original Value	Recoded Data	Original Value	Recoded Data	Original Value	Recoded Data	Original Value
Austria		1	1	15	1	1.5	1	0	0	40	0.50	30	1
Belgium		1	1	10	0.66	1.5	1	0	0	40	0.50	24	0.80
Denmark		1	1	0	0	1.5	1	0	0	37	1	25	0.83
Finland		1	1	11	0.73	1.5	1	2.0	1	40	0.50	24	0.80
France		1	0	1	0.06	1.25	0.50	1.5	0.50	39	1	30	1
Germany		1	1	10	0.66	1.25	0.50	0	0	48	0	20	0.66
Greece		1	1	4	0.26	1.25	0.50	1.75	0.75	40	0.50	20	0.66
Ireland		1	1	9	0.60	1.5	1	0	0	48	0	22	0.73
Italy		0	1	11	0.73	1.1	0	0	0	40	0.50	28	0.93
Netherlands		1	1	7	0.46	1.25	0.50	1.5	0.50	40	0.50	20	0.66 ²⁰⁰⁴
Norway		0	1	9	0.60	1.5	1	0	0	40	0.50	25	0.83
Portugal		1	1	12	0.80	1.5	1	1.75	0.75	40	0.50	24	0.80 ²⁰⁰⁴
Spain		1	1	12	0.80	1	0	0	0	40	0.50	30	1
Sweden		1	1	10	0.66	1.5	1	1.6	0.60	40	0.50	25	0.83
UK		1	1	0	0	1	0	0	0	40	0.50	28	0.93
Australia		1	1	10	0.66	1.5	1	2.0	1	40	0.50	28	0.93
Canada		1	1	5	0.33	1.5	1	0	0	40	0.50	14	0.46
Japan		0	1	0	0	1.25	0.50	0	0	40	0.50	10	0.33
Luxembourg												25	0.83
New Zealand		1	1	11	0.73	1	0	0	0	40	0.50	14	0.46
Switzerland		1	1	9	0.60	1.25	0.50	0	0	45	0	20	0.66 ²⁰⁰⁴
USA		1	1	0	0	1.5	1	0	0	40	0.50	0	0

Source: Botero, Juan C. , Djankov, Simeon , La Porta, Rafael, Lopez-de-Silanes, Florencio and Shleifer, Andrei. 2004. The Regulation of Labor. *The Quarterly Journal of Economics* 119 (4). 1339 – 1382: (cp. http://mba.tuck.dartmouth.edu/pages/faculty/rafael.laporta/working_papers/Regulation%20of%20Labor-All/Regulation%20of%20Labor.xls)

Part-Time-Benefits: 1 = Part-time workers receive at least half of the benefits enjoyed by the full-time worker (leaves, overtime premium, social security).

Part-Time Contracts: 1 = Part-time workers enjoy at least half of the legal rights to advance notice and separation fees for the termination of the employment

contract of full time workers.

- No. of Paid Holidays: 15 is the maximum and equals 1, countries with a lower value are assigned a percentage share.
- Overtime Premium I: Premium for the first set of overtime hours a week
Equals 1 when the premium is at least 150% of the normal wage, equals 0.50 when the premium is at least 125% of the normal wage and equals 0 when the premium is less than 125% of the normal wage.
- Overtime Premium II: Premium for each hour after the first set of overtime hours a week
Equals 1 when the premium for the second set of overtime is at least 200% of the normal wage and equals 0 when there is no additional premium for a second set of overtime hours; the values in between reflect the actual additional wage increase in relation to the normal wage.
- Max. Hours/Week: Equals 1 when threshold ≤ 39 ; equals 0.5 when threshold = 40; equals 0 when threshold ≥ 41 .
- Minimum Vacation: 30 is the maximum and equals 1, countries with a lower value are assigned a percentage share.
Source: ILO (1996 – 2011; <http://www.ilo.org/dyn/travail/travmain.home>). Information for the Netherlands, Portugal and Switzerland come from the *days of annual leave with pay in manufacturing* variable in Botero et al. (2004) which is not used for the remaining countries because the ILO data cover more than the manufacturing sector

Public Child Care Services (Different Inquiry Periods and Data Sources)

Country	Variables	Legal Entitlement	Length of Day	Childcare Coverage 0 - 2 (2002-2005)	Childcare Coverage 3 - 5 (2002-2005)	Childcare Cost in % of Family Net Income (2004)		Public Spending on Childcare as a % of GDP (2003)		Child-Staff-Ratio Ages 0 - 2		Child-Staff-Ratio Ages 3 - 5	
						Original Value	Recoded Data	Original Value	Recoded Data	Original Value	Recoded Data	Original Value	Recoded Data
Austria		0	0.33	0.09	0.81	15	0.85	0.60	0.37	9	0	16.5	0
Belgium		0.50	0.66	0.39	1	4	0.96	0.80	0.50	7	0.50	16	0.50
Denmark		1	1	0.62	0.90	8	0.92	1.60	1	5	1	7	1
Finland		1	1	0.35	0.68	7	0.93	1.40	0.87	5	1	13	0.50
France		0.50	1	0.26	1	11	0.89	1.20	0.75	6.5	0.50	19	0
Germany		0.50	0.33	0.09	0.80	8	0.92	0.40	0.25	6.5	0.50	14	0.50
Greece		0.50	0.66	0	0.46	5	0.95	0.40	0.25	11	0	13	0.50
Ireland		0.50	0.33	0.15	0.65	29	0.71	0.25	0.16	4.5	1	14	0.50
Italy		0.50	0.66	0.06	1	4.5	0.96	0.55	0.34	7	0.50	13	0.50
Netherlands		0.50	0.33	0.39	0.68	12	0.88	0.55	0.34	5	1	15	0.50
Norway		0	1	0.44	0.85	8	0.92	1.00	0.62	8	0.50	12	1
Portugal		0.50	0.33	0.24	0.78	4	0.96	0.85	0.53	11	0	15	0.50
Spain		0.50	0.50	0.21	0.99	4.5	0.96	0.55	0.34	11	0	14	0.50
Sweden		1	1	0.40	0.87	6	0.94	1.30	0.81	5.5	1	12	1
UK		0.50	0.33	0.26	0.79	33	0.67	0.60	0.37	5	1	16	0.50
Australia		0	0.66			8	0.92	0.40	0.25	7.5	0.50	16	0.50
Canada		0.50	0.33			22	0.78			7	0.50	12	1
Japan						14	0.86	0.35	0.22	4.5	1	17	0
Luxembourg						6	0.94	0.90	0.56				
New Zealand						28	0.72	0.35	0.22	5.5	1	10	1
Switzerland						30	0.70	0.30	0.19	6	0.50	18	0
USA		0	0.33			28	0.72	0.60	0.37	5	1	14	0.50

Legal Entitlement to Infant Care and / or Kindergarten / Pre-School:

Equals 1 when legal entitlement to both infant care and kindergarten exists, equals 0.50 when legal entitlement to either one of them exists and equals 0 when there is no legal entitlement at all.
Source: Bennett, John. 2008. Early Childhood Services in the OECD Countries: Review of the Literature and Current Policy in the Early Childhood Field. UNICEF Innocenti Working Paper IWP-2008-01

Childcare Coverage for children aged 0 – 2 and 3 – 5:

Values correspond to the actual percentage share of children in childcare
Source: Moss, Peter and Wall, Karin (eds.). 2007. International Review of Leave Policies and Related Research 2007. Employment Relations Research Series No. 80

Source for Austria: Statistik Austria. 2010. Bildung und Kultur. Formales Bildungswesen. Kindertagesheime und Kinderbetreuung. Kinderbetreuungsquoten nach Altersgruppen 1995 bis 2009.

http://www.statistik.at/web_de/statistiken/bildung_und_kultur/formales_bildungswesen/kindertagesheime_kinderbetreuung/index.html (04/01/2011)

Childcare Cost in % of Family Net Income:

1 minus the actual value (the higher the value, the less families have to pay)
Source: OECD Family Database (<http://www.oecd.org/dataoecd/52/11/42004407.pdf>; p. 3)

Public Expenditures for Childcare (Infant Care and Pre-Primary Education):

1.60 % of the GDP is the highest value and equals 1. Countries with a lower value are assigned a percentage share.
Source: OECD. 2007. Babies and Bosses. Reconciling Work and Family Life. A Synthesis of Findings for OECD Countries. (p. 135)

Length of the Day:

Equals 1 when it is mostly full-time, equals 0.66 when there is a mixture of part-time and full-time offers and equals 0.33 when it is mostly part-time.
Source: Data for Australia, Austria, Belgium, Denmark, Finland, France, Italy, Norway and Sweden come from OECD (2007). Data for Canada, Ireland, the Netherlands, Portugal, the United Kingdom and the United States come from Bennett (2008). Data for Germany and Greece come from the Eurydice Database (http://eacea.ec.europa.eu/education/eurydice/eurybase_en.php)

Child-Staff-Ratio Ages 0 – 2:

Indicator for childcare quality. Equals 1 when child-staff-ratio is ≤ 5.5 , equals 0.5 when child-staff ratio is ≥ 6 and ≤ 8.5 and equals 0 when child-staff ratio is ≥ 9
Source: OECD (2007, p. 144)

Child-Staff-Ratio Ages 3 - 5:

Indicator for childcare quality. Equals 1 when child-staff-ratio is ≤ 12 , equals 0.5 when child-staff ratio is ≥ 13 and ≤ 16 and equals 0 when child-staff ratio is ≥ 16.5 .
Source: OECD (2007, p. 144)

Parental Leave (2007)

Country	Variables	Maternity Leave	Paternity Leave	Length of Leave		Length of Paid Leave		Share of Paid Period of Leave	Sick Child Leave
				Original Value	Recoded Data	Original Value	Recoded Data		
Austria		1	0	24	0.66	24	0.66	1	1
Belgium		1	1	9.5	0.26	9.5	0.26	1	0.25
Denmark		1	1	10.5	0.29	10.5	0.29	1	0
Finland		1	1	36	1	36	1	1	0
France		1	1	36	1	36	1	1	0.50
Germany		1	0	36	1	14	0.39	0.39	0.75
Greece		1	1	9	0.25	2	0.05	0.22	0.50
Ireland		0.66	0	14	0.39	4.5	0.12	0.32	1
Italy		1	0	13.5	0.37	13.5	0.37	1	0.25
Netherlands		1	1	8.5	0.24	2.5	0.07	0.29	1
Norway		1	0.33	36	1	12	0.33	0.33	1
Portugal		1	1	34	0.94	4	0.11	0.12	1
Spain		1	1	36	1	3.5	0.10	0.10	0.75
Sweden		1	1	16	0.44	16	0.44	1	0.75
UK		0.66	0.66	18	0.50	6	0.17	0.34	0.25
Australia									
Canada		1	0.33	12	0.33	11.5	0.32	0.96	0.50
Japan									
Luxembourg									
New Zealand									
Switzerland									
United States		0	0	0	0	0	0	0	0

Source: Moss, Peter and Wall, Karin (eds.). 2007. International Review of Leave Policies and Related Research 2007. Employment Relations Research Series No. 80

Maternity Leave / Paternity Leave: 0 = no statutory entitlement / 0.33 = statutory entitlement, but unpaid / 0.66 = statutory entitlement, but low flat rate or < 50 % of earnings or not universal or not paid for the full period / 1 = statutory entitlement and > 50 % of earnings

Length of Leave: In months. Equals 1 when length of leave = 36 months (maximum length), countries with a lower value are assigned a percentage share.

Length of Paid Leave: In months. Equals 1 when length of paid leave = 36 months (maximum length), countries with a lower value are assigned a percentage share.

Share of Paid Period of Leave: Paid period of leave as a share of the total length of leave (equals 1 when 100% of leave is paid)

Sick Child Leave:

0 = no statutory entitlement / 0.25 = statutory entitlement, but unpaid / 0.50 = statutory entitlement, but low flat rate or < 50 % of earnings or not universal or not paid for the full period / 0.75 = statutory entitlement and > 50 % of earnings / 1 = 0.75 + additional leave entitlements covering a wider range of family members other than young children and/or situations of serious illness (any value ≥ 0.50 can also be a combination of the entitlement and payment regulations plus the additional leave regulations)

School Policy (2010)

Country	School Starting Age		School Hours per Week (Primary Education)		School Hours per Week (Secondary Education)		School Days per Year	
	Original Value	Recoded Data	Original Value	Recoded Data	Original Value	Recoded Data	Original Value	Recoded Data
Austria	6	0.33	20	0.66	35	0.87	180	0.85
Belgium	6	0.33	29.5	0.96	34	0.85	182	0.86
Denmark	6,5	0.33	24.5	0.82	35	0.87	184	0.87
Finland	7	0	19	0.63	30	0.75	190	0.90
France	6	0.33	24	0.80	27.5	0.69	180	0.85
Germany	6	0.33	24.5	0.82	30	0.75	198	0.93
Greece	5	0.66	27.5	0.92	35	0.87	175	0.82
Ireland	6	0.33	25	0.83	38.5	0.96	181	0.85
Italy	6	0.33	27	0.90	29	0.72	200	0.94
Luxembourg	4	1					212	1
Netherlands	5	0.66	23.5	0.78	26	0.65	200	0.94
Norway	6	0.33	20	0.66	30	0.75	190	0.90
Portugal	6	0.33	24.5	0.82	25.5	0.64	180	0.85
Spain	6	0.33	25	0.83	30	0.75	175	0.82
Sweden	7	0	30	1	40	1	178	0.84
UK	4	1	22	0.73	24.5	0.61	195	0.92

Source:

Eurydice Database (http://eacea.ec.europa.eu/education/eurydice/eurybase_en.php)

School Starting Age:

Equals 1 when start of compulsory schooling is at age 4, equals 0.66 when start of compulsory schooling is at age 5, equals 0.33 when start of compulsory schooling is at age 6 or 6.5 and equals 0 when start if compulsory schooling is at age 7.

School Hours per Week (Primary Education):

Maximum no. of hours equals 30, countries with a lower value are assigned a percentage share.

School Hours per Week (Secondary Education):

Maximum no. of hours equals 40, countries with a lower value are assigned a percentage share.

School days per Year:

Maximum no. of school days equals 212, countries with a lower value are assigned a percentage share.

Taxation and Allowances (2007)

Country	Family Cash Benefits as % of the GDP		Family Tax Breaks as a % of the GDP
	Original Value	Recoded Data	
Austria	2.5	0	0.1
Belgium	1.8	0.25	0.5
Denmark	1.6	0.25	0
Finland	1.5	0.50	0
France	1.5	0.50	0.7
Germany	1.3	0.50	1
Greece	1	0.75	0
Ireland	2.3	0	0.2
Italy	0.7	0.75	0
Netherlands	0.8	0.75	0.4
Norway	1.9	0.25	0.2
Portugal	0.8	0.75	0.2
Spain	0.4	1	0.2
Sweden	1.6	0.25	0
UK	2.3	0	0.4
Australia	2.7	0	0.1
Canada	1	0.75	0.2
Japan	0.4	1	0.4
Luxembourg	3.6	0	0
New Zealand	2	0	0
Switzerland	1.2	0.50	0
United States	0.2	1	0.6

Source: Organisation for Economic Co-operation and Development. 2007. *Babies and Bosses. Reconciling Work and Family Life. A Synthesis of Findings for OECD Countries*. Paris: OECD Publishing, p. 72

Family Cash Benefits as % of the GDP: Equals 1 when the share of the GDP spend for family cash benefits is ≤ 0.5 , equals 0.75 when the share of the GDP spend for family cash benefits is ≥ 0.6 and ≤ 1 , equals 0.50 when the share of the GDP spend for family cash benefits is ≥ 1.1 and ≤ 1.5 , equals 0.25 when the share of the GDP spend for family cash benefits is ≥ 1.6 and ≤ 2 and equals 0 when the share of the GDP spend for family cash benefits is ≥ 2.1 .

Family Tax Breaks as % of the GDP: Since the maximum tax break is 1% (Germany), the values correspond to the actual share of the GDP.

Country Level Control Variables: Female Employment-Population Ratio (2005) and Cultural Attitudes (2008)

Country	Female Employment-Population Ratio 2005		Cultural Attitudes 2008	
	Original Value	Recoded Data	Original Value	Recoded Data
Austria	62	0.62	28	0.28
Belgium	54.1	0.54	14	0.14
Denmark	70.8	0.71	8	0.08
Finland	66.5	0.67	2	0.02
France	58	0.58	13	0.13
Germany	59.6	0.60	21	0.21
Greece	46.2	0.46	24	0.24
Ireland	57.9	0.58	22	0.22
Italy	45.3	0.45	30	0.30
Luxembourg	53.7	0.54		
Netherlands	64.8	0.65	18	0.18
Norway	72	0.72	9	0.09
Portugal	61.7	0.62	24	0.24
Spain	51.9	0.52	25	0.25
Sweden	71.8	0.72	8	0.08
UK	66.7	0.67	19	0.19

Sources:

Organisation for Economic Co-operation and Development. 2010b. OECD Factbook 2010: Economic, Environmental and Social Statistics. http://www.oecd-ilibrary.org/economics/oecd-factbook-2010_factbook-2010-en

European Values Study EVS. 2008. Tilburg University, Netherlands. <http://www.europeanvaluesstudy.eu/evs/contact.html>

Female Employment-Population Ratio:

Share of women of working age in employment in %

Cultural Attitudes:

Share of the population that holds a more conservative attitude towards the role of mothers

CURRICULUM VITAE

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Sprecherin der Studierenden für die Gewerkschaft Erziehung und Wissenschaft Bremen / Mitglied der Jungen GEW Köln und der Jungen GEW NRW, Mitglied im Geschäftsführenden Ausschuss der GEW Köln und im Landesfrauenausschuss der GEW NRW