

MEASURING THE EFFECTS OF WELFARE STATE EFFORT ON MATERNAL LABOR SUPPLY

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ABSTRACT

The last decades have not only been characterized by dramatic social and economic changes, but also by important advancements in welfare state research. On the one hand, scholars passed on from explaining welfare state development and different degrees of welfare state effort to considering welfare state effort itself as the independent variable affecting certain aggregate or individual outcomes. On the other hand, conceptualizations of welfare state effort turned out to be more encompassing over time and started to comprise more than crude social expenditure data. Furthermore, the feminist perspective on welfare state effort and effect gained much in importance in welfare state research, leading to a focus on the micro and macro determinants of female and maternal labor market participation. Based on the benefits and weaknesses of these advancements, the purpose of the present study is to test if a set of single policy indicators from the policy fields of parental leave, childcare, school schedules, working time regulations, taxation and family allowances have a significant effect on maternal labor supply. Using the 2005 EU SILC and extending over nine European countries, the purpose of the present study is to make an attempt to disentangle specific policy effects to facilitate the development of a comprehensive and straightforward set of policies which influences maternal labor supply decisions. The findings suggest that although many of these policy indicators have frequently been used as determinants of maternal labor supply, often in the form of overall policy indices, the effect of the single indicators does not prove to be very clear.

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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)

I. INTRODUCTION

In the social sciences, there seems to be not doubt that some profound social and economic changes that have been taking place during the last decades. The dramatic increase in female and maternal employment is one of those changes that have been subject to rising research interest. The need for maternal labor market participation is assumed to be caused by developments such as an increasing family instability and by increasing insufficiency of one single income to support a family and it has lead scholars to focus on the individual and political determinants of maternal labor supply (Armingeon and Bonoli 2006; Taylor-Gooby 2004).

In the present study, we analyze the effect of a comprehensive set of policy indicators on maternal labor supply. The last decades have not only been characterized by social and economic changes, but also by important developments in welfare state research. On the one hand, scholars passed on from explaining welfare state development and different degrees of welfare state effort to considering welfare state effort itself as the independent variable affecting certain aggregate or individual outcomes. On the other hand, conceptualizations of welfare state effort turned out to be more encompassing over time and started to comprise more than crude social expenditure data. Furthermore, the feminist perspective on welfare state effort and effect gained much in importance in welfare state research. In the following section, these developments are outlined in more detail to illustrate the benefits, but also the weaknesses of this advancement. Subsequently, the theoretical foundations are used to construct a model of the relationship between welfare state effort towards maternal employment and maternal labor supply which does not only test for the conventional micro model of labor supply, but also, in a second step, for the influence of single policy indicators from the policy fields of parental leave, childcare, school schedules, working time regulations, taxation and family allowances. Using the 2005 EU SILC and extending over nine European countries, the purpose of the present study is to make an attempt to disentangle specific policy effects to facilitate the development of a comprehensive and straightforward set of policies which influences maternal labor supply decisions.

II. THEORETICAL BACKGROUND

The Concept of Welfare State Effort

Generally, welfare state effort is defined as the resources that go into welfare provision (Mitchell 1991). The massive increase in welfare state effort that took place in many OECD countries in the early post-war decades induced far-reaching analyses of the causes of this increase and the observed cross-

national variation in the provision of social support. However, the focus of welfare state research has undergone considerable changes over time. We can distinguish three generations of welfare state research and we find different approaches towards the analysis of welfare state effort within every generation (cp. Johnson 2003). The most important changes that have been taking place over the last two decades are certainly the switch from using welfare state effort as the *explanandum* to its use as the *explanans* and the more specific operationalization of the concept that arose over time.

The first generation of welfare state research focused on the determinants of welfare state development and treated the welfare state as a dependent variable. Those theories of welfare state development can generally be classified into three schools of research. The first school of research considered economic forces and industrialization to be the determining elements driving welfare state expansion (Cutright 1965; Wilensky and Lebeaux 1965; Wilensky 1975; Esping-Andersen 1989). The second school of research within the first generation focused on political and institutional factors like the development of democratic institutions to explain welfare state development (Orloff and Skocpol 1984; Skocpol and Amenta 1986; Orloff 1995) and 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 (Gough 1979; Stephens 1979; Korpi 1983/1985; Esping-Andersen 1990).

The characteristic that all the approaches within the first generation of welfare state research 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 effort by using crude social expenditure levels. This conceptualization of welfare state effort has been widely criticized. Gilbert and Moon (1988) argue that, for instance, higher levels of social expenditure do not necessarily mean that the level of social protection in a country is higher, but can simply reflect high shares of retirees or high shares of unemployed persons. Furthermore, they criticize that this strand of research ignores the fact that a share of welfare also comes from voluntary and private sources which supplement the overall level of social protection. Therborn (1987) argues that the over-quantification of the welfare state is one major weakness of the first generation of welfare state research and advises to include qualitative dimensions of welfare provision like, for instance, information about social services, in future research.

The second generation of welfare state research continued to focus on the welfare state as a dependent variable. However, this generation 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. In this generation, we can observe a shift of focus “[...] away from the black box of expenditure towards the contents of the welfare state and the instruments and means that produce welfare [...]” (Johnson 2003: 9). In the category of the second generation of welfare state research belong many welfare state typologies that 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, the orientation towards questions of gender equality and towards the achievement of full employment (Esping-Andersen 1990; Leibfried 1992; Castles & Mitchell 1993; Siaroff 1994; Ferrera 1996; Bonoli 1997).

The third generation of welfare state research moved beyond the treatment of the welfare state as a dependent variable. Researchers started to be interested in how the welfare state affects the life of individuals instead of focusing on the factors that influenced welfare state development in the first place. In the third generation of welfare state research, there has been a “[...] shift towards the results which the different regimes have produced in terms of poverty rates, social rights and income equality [...]” (Johnson 2003: 10). Early studies dealt with aggregate economic well-being like GDP per capita, but they 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 welfare state effect. 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 welfare state effort 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 can be considered just as important as cash benefits (Townsend and Gordon 2000). Examples of studies from the third generation of welfare state effort are the works by Korpi and Palme (1998) and Kangas and Palme (1998). Korpi and Palme 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. [...]” (Korpi and Palme 1998: 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 put remaining differences in poverty rates down 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.).

Women and the Conceptualization of Welfare State Effort

Traditional welfare state research has often been criticized for their ignorance of the gender dimension. Peattie and Rein (1983) use the example of the United States and the historical perspective to point out that the relationship between state and women has undergone considerable changes. 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. 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 maintenance of women's subordination. 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. Sapiro (1986) examines the relationship between women's welfare and general welfare by means of the example of the United States. Like many of her colleagues, 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). Lewis (1992) formulates certainly 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 other welfare state researchers 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 countries have to be distinguished according to the strength of the male breadwinner model within the country.

Female Employment and the Measurement of Welfare State Effects

The feminist critique of traditional welfare state research points out that ignoring the gender dimension can possibly lead to incomplete conclusions on welfare state effort. Also the strand of welfare state research that demands the inclusion of the female perspective has started to move beyond non-gender neutral conceptualization of welfare state effort to the measurement of welfare state effects on women in general and on female and maternal employment in particular. The works of Gornick, Meyers and Ross (Gornick et al. 1996a; Gornick et al. 1996b; Gornick and Meyers 2003) provide a promising starting point for the conceptualization of welfare state effort towards maternal employment. Their analyses have the pronounced goal to explain why – in the context of a general increase in maternal employment – the employment rate of mothers still varies across countries by analyzing the cross-national variation of a set of policies expected to increase it. Gornick et al. (1996a) illustrate which family policies are considered to facilitate maternal

employment and develop a cross-national measurement of those policies. Consecutively, they test the influence of those welfare state policies on maternal employment (Gornick et al. 1996b). 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 indices of Gornick et al. were 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 childbirth, part-time employment or a more or less direct return into full employment). They use Gornick et al.'s categorization of countries according to their performance concerning maternal employment support and add this dimension to the usual welfare regime typology in order to enhance the understanding of women's employment patterns and their economic consequences. 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. 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 either in an implicit or in an explicit way and that it is especially care policies that would help close gender gaps. Without childcare policies, it seems highly likely that “[...] 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. They generally conclude 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 on their labor market experiences later in life. Pettit and Hook (2009) examine the relationship between different labor market outcomes (general labor market participation, working hours, wage and occupational segregation) 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 should not only be measured by general labor market participation, but by the specific conditions according to which women are included.

Labor Supply Theory

The last section of this subchapter is intended to expose adequate theoretical foundations for the selection of policy determinants of maternal employment. Since decades, labor supply theory has been used to explain the relationship between individual characteristics and labor market participation. Like in general economic theory, labor supply theory considers individuals to be utility maximizers. Hence, individuals also try to maximize their utility when they make the decision about the allocation of their time between work and leisure or between market and non-market time respectively. It is assumed that this decision principally depends on the relationship between reservation wage and market wage. The market wage W is determined by certain individual characteristics and by the regional labor market situation while the reservation wage W^R refers to the value of non-market time. Generally, individuals are expected to supply labor when the market wage exceeds the reservation wage (cp. Franz 2006). Although the present research question is not directly interested in wages, but in the general decision on maternal labor market participation, factors influencing W and W^R are of capital importance because the labor market participation decision is assumed to be made by taking into account the potential utility of allocating some time to the labor market.

On the individual level, the determinants of labor supply have been widely analyzed. 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; Ehrenberg & Smith 2009). Furthermore, 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 would have to be purchased because regular school schedules are not yet applicable which might again be understood as an effective market wage decrease. Theoretical assumptions on household production and families as an economic unit suggest that the marital status affects labor supply as well. Labor supply theory supposes that partners often decide to specialize in either market or home work. Generally, they base their decision on their relative productivity at home and in market work. However, it is not impossible that both partners allocate some time to the labor market because goods produced at home, such as meals, cleaning services or childcare, can also be purchased in the market and because it has been observed that a longer period with greater hours of household work seems to have long-term consequences for future labor market 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.

As indicated above, existing research has already started to take into account that welfare state policies can also influence the maternal decision on if and how much labor should be supplied. In terms of labor supply theory, we have to focus 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 effectuate the opposite.

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 may decrease women's labor market attachment and downgrade their career options (Gornick et al. 1996a; Pettit and Hook 2005). 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, because 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; Meyers et al. 1999).

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 can in turn be considered 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). The effect of public support and provision of childcare on maternal labor supply has been tested empirically and those studies seem to confirm the theoretical assumptions (Michalopoulos et al. 1991; Connelly 1992).

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 one of public provision and support of childcare for children below school age.

The reason for including *working time regulations* in the evaluation of welfare states' effort 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 / Meyers 2003: 147).

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. By contrast, if 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 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. When certain family benefits 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, the decision to participate in the labor market actually implies a (partial) renouncement of the benefits.

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). In turn, individual taxation can be expected to attenuate the influence of tax rates on women's income and therefore increase their labor supply. Gustafsson shows that joint taxation „[...] decreases married women's economic remunerations from participating in the labor force [...]“ (Gustafsson 1992: 82) and Crossley and Jeon (2005) find that joint taxation can effectively be considered as a determinant of the labor supply of married women 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.

The foregoing illustrations point out that existing research has turned to conceptualizing welfare state effort in a more comprehensive way than simply using social expenditure data. Scholars have acknowledged that the welfare state is not only a dependent, but also an independent variable, taking into account that different degrees of welfare state effort might be reflected in different welfare state effects. Finally, the specific relationship between welfare state effort and its effect on the living and employment situation of women has considerably gained in importance. Those developments have lead to the question which policies should be used to conceptualize welfare state effort towards maternal labor supply and welfare state research has often turned to the construction of policy indices (cp. Gornick et al. 1996a; Gornick et al. 1996b; Stier et al. 2001; Gornick and Meyers 2003). However,

those policy indices might cover the actual effects of single policies. Therefore, the subsequent section will test the conventional micro model of labor supply and the specific influence of single policies which can be derived from the theoretical assumptions outlined above. Here, each single policy is subject to the assumption of having a positive effect on maternal labor supply.

III. DATA AND METHODS

Micro-Level

The micro data come from the 2005 European Union Statistics on Income and Living Conditions (EU SILC). The EU SILC provides individual and household level data on cross-sectional and also 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 women aged 25 to 64 who live in households with at least one dependent child. Table 1 present the individual level variables that, according to the general assumptions about individual determinants of labor supply, have been included in the subsequent analysis².

Variable Name	Mean	Standard Deviation	Min	Max
<u>Dependent Variable</u>				
Weekly Work Hours (ln)	2.27	1.64	0	4.59
<u>Independent Variables</u>				
Age	40.72	7.61	25	64
Age ²	1716	633.5	625	4096
Marital Status	2.17	1.01	1	5
ISCED Level	3.61	1.18	1	5
Weekly Earnings (ln)	5.80	0.89	0.19	8.78
Family Composition	2.41	1.25	1	5
N = 26321				

In general, the estimation of labor supply requires some preparative steps. Since the market wage of a person is assumed to be one central predictor of the time that is allocated to the labor market, 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. This is possible because any other information, such as the level of education, the age, the marital status and the family composition, can be observed for each

² The variables on marital status, education and family composition are constructed as dummy variables.

individual. Heckman suggests adding a selection equation to the model (cp. Wooldridge 2002: 560).

$$y = x\beta + u, E(u/x) = 0$$

$$s = 1 [z\gamma + v \geq 0]$$

Here, it is important that any x is also an element of z while some elements of z are not supposed to be in 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 weekly earnings 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 family composition and the relationship status.

Macro-Level

According to the theoretical considerations outlined above, we will test a range of single policy indicators covering the six policy fields considered to affect maternal labor supply. A large part of the data comes from the works of Gornick and Meyers (2003). Gornick and Meyers collected data on the six indicators on parental leave, on the ten indicators on public childcare and on the four indicators on public school policy. Here, two of the indicators on working time policy (compensation for overtime and the number of public holidays) and the information on the system of taxation and on the existence of child-raising allowances are added. Table 2 summarizes the variables on the macro level.

Table 2 Independent Variables on the Country Level				
Variable Name	Mean	Standard Deviation	Min	Max
Paid Maternity Leave (Weeks)	0.54	0.29	0.12	1
Gender Equality	0.51	0.31	0.17	1
Extended Paid Leave	0.20	0.38	0	1
Sick Child Leave	0.91	0.29	0	1
Paternity Benefits	0.60	0.49	0	1
Public Leave Exp.	0.23	0.12	0.03	0.42
Tax Relief for Childcare	0.58	0.44	0	1
Childcare Guarantee				
Children 0 - 2	0.33	0.47	0	1
Childcare Coverage				
Children < 1	0.04	0.06	0.01	0.17
Children 1 - 2	0.23	0.21	0.02	0.74
Children 3 - 5	0.78	0.10	0.66	0.99
Children 6+	0.98	0.03	0.92	1
Public Childcare Exp.				
Children 1 - 2	0.81	0.06	0.63	0.85
Children 3 - 5	0.90	0.12	0.63	1
Childcare Hours	0.73	0.31	0.33	1
Childcare Quality	0.84	0.17	0.66	1
Length of the Workweek	0.68	0.27	0.23	1
Minimum Vacation	0.90	0.09	0.80	1
Compensation for Overtime	0.25	0.36	0	1
No. of Public Holidays	0.26	0.33	0	0.70
School Starting Age	0.33	0.29	0	1
School Hours / Week	0.57	0.18	0.37	1
School Days / Year	0.91	0.04	0.84	1
School Day Continuity	0.60	0.44	0	1
Mode of Taxation	0.64	0.48	0	1
Child-Raising Benefits	0.76	0.43	0	1
N = 9 countries Denmark, Finland, Norway, Sweden, Germany, France, Luxembourg, United Kingdom and the Netherlands				

Methods

First, the conventional micro model of labor supply will be calculated to test if the traditional assumptions of labor supply theory about the influence of individual factors hold. In a second step, the influence of the single policy indicators will be tested by using a random intercept model. Here, the micro model will be tested separately in each country. The country-specific slopes and intercepts (here: the average weekly working hours) will be related to the single policy indicators to find out which indicators prove to have a linear effect on average maternal labor supply.

IV. RESULTS

According to labor supply theory, the influence of all conventional individual variables proves to be more or less as expected. Table 3 shows the results of the OLS regression of weekly earnings, education, age, family composition and marital status on weekly labor supply.

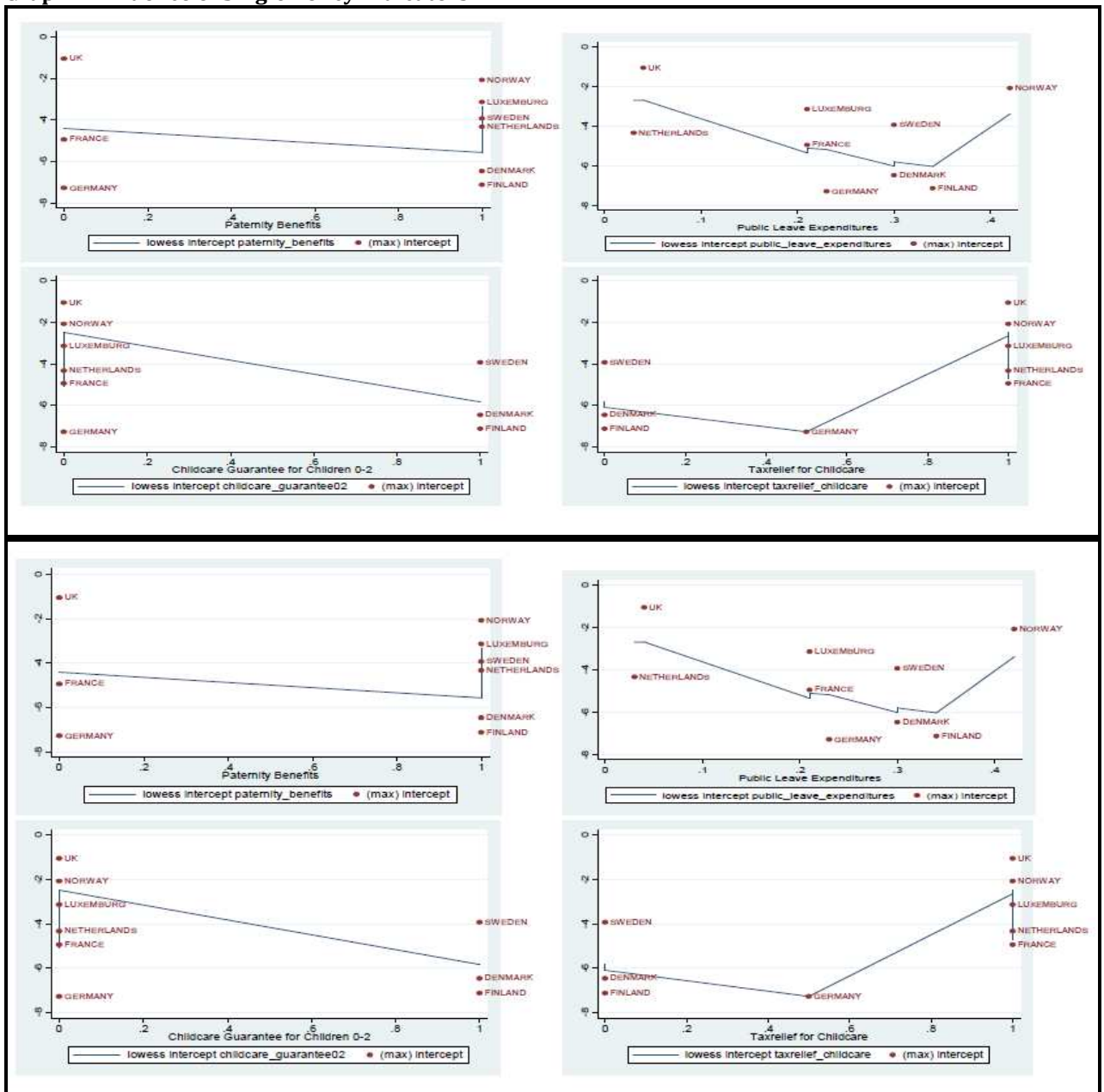
Table 3 Individual Level Regression		
	Coefficient	Std. Error
Weekly Earnings	0.357***	0.011
Marital Status		
Married	-0.339***	0.029
Separated	-0.516***	0.092
Widowed	-0.579***	0.068
Divorced	0.071	0.043
Age	0.228***	0.012
Age²	-0.002***	0.000
Family Composition		
2 Adults / 2 Children	-0.159***	0.025
2 Adults / 3+ Children	-0.358***	0.031
1 Adult / 1+ Children	-0.388***	0.039
Other Composition + Children	-0.189***	0.038
Education		
Lower Secondary Education	0.021	0.059
Upper Secondary Education	0.455***	0.054
Post-Secondary Non Tertiary Education	0.186**	0.070
First and Secondary Stage of Tertiary Education	0.698***	0.055
Constant	-4.697***	0.234
N= 26321; R² = 0.102; *** P < 0.001, ** P < 0.05, * P < 0.1		

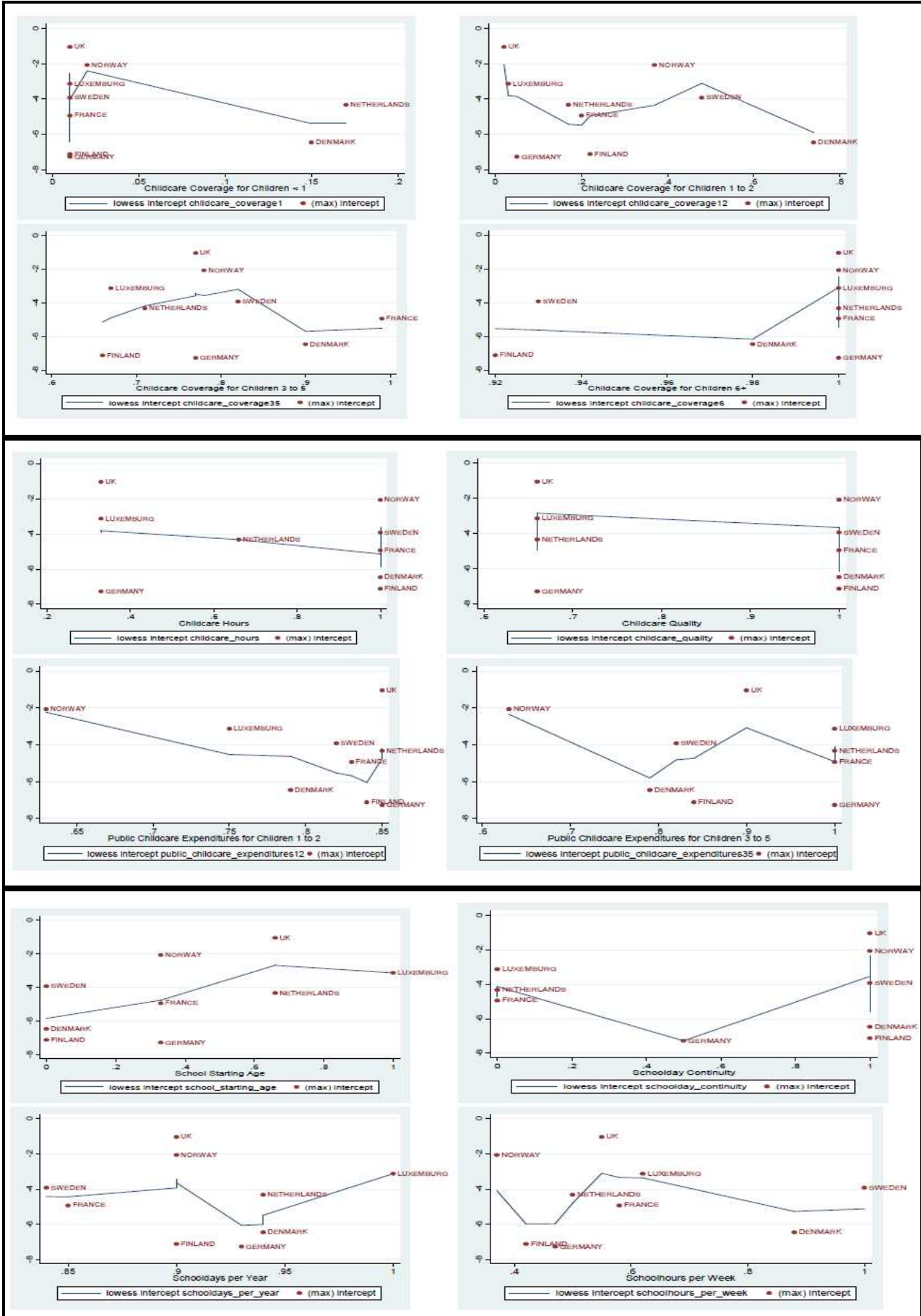
Weekly earnings and almost all further stages of education, in reference to primary education, have a positive effect on the weekly labor supply. Compared to families with two adults and one dependent child, all other family compositions, such as having more than one dependent child or being a single parent, have a negative effect on weekly labor supply. Finally, being

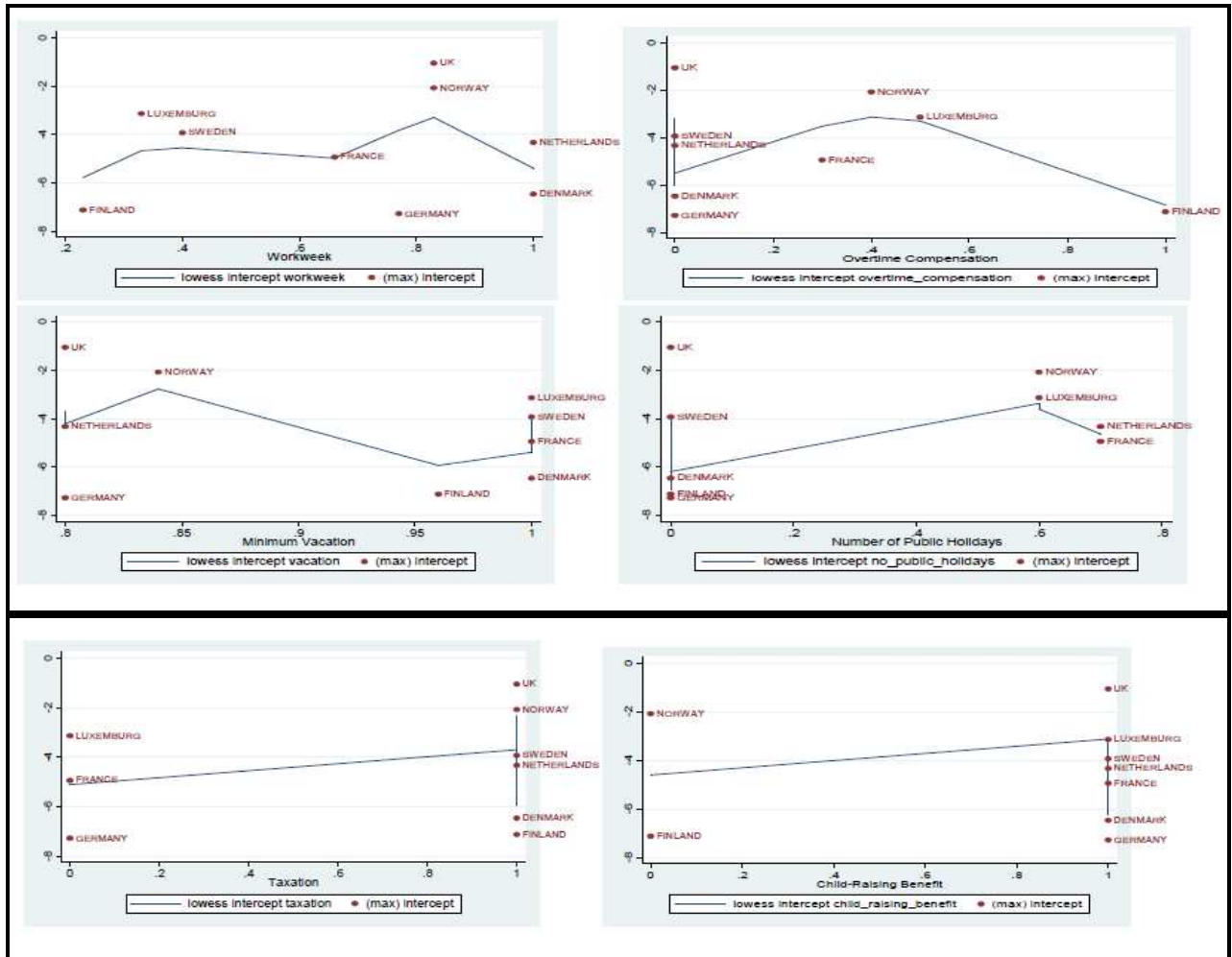
married, separated or widowed has, in comparison to the reference category of being never married, a negative effect on labor supply. The only, non-significant exception is being divorced.

In the second step of the analysis, the above-used micro model has been used to detect the influence of specific policy indicators on average weekly maternal labor supply. The following graphs show that although these policies have been frequently used in recent welfare state research, particularly for the construction of overall policy indices (cp. Gornick et al. 1996a; Gornick et al. 1996b; Gornick and Meyers 2003), significant linear relationships between the single policy indicators and maternal labor supply are difficult to prove.

Graph 1 Influence of Single Policy Indicators







V. DISCUSSION AND CONCLUSION

The concept of welfare state effort has undergone significant changes during the last decades. It has moved from being as dependent variable to being used as independent variable and the conceptualization of welfare state effort has become more comprehensive, moving beyond crude social expenditure data to a more detailed picture including specific policy configurations. These advancements have also been taking place in the feminist strand of welfare state literature. The feminist critique of traditional welfare state research has noted that the female perspective and the specific living conditions of women cannot be ignored and scholars have started to analyze the effect of welfare state effort on, for instance, female and maternal employment. In existing research, policies considered to determine maternal labor supply have often been used to construct policy indices to display a comprehensive picture of welfare state effort towards maternal employment.

However, policy indices might cover the actual effects of single policies on maternal labor supply. Therefore, the purpose of the present study was to disentangle the effect of single policies on maternal labor supply. In a first step, the micro model of labor supply has tested for the influence of the conventional individual determinants of labor supply. The results have shown that most of the individual variables on earnings, age, education, relationship status and family composition have the expected effect on maternal labor

supply. In a second step, the average weekly labor supply, calculated by means of a random intercept model for each country in the sample, has been related to 26 policy indicators assumed to determine maternal labor supply decisions. The results of this analysis show that the effects of single policies on maternal labor supply are not as straightforward as previous research has suggested by using those policies to construct overall indices of welfare state effort towards maternal employment. This finding suggests that future research should select policy determinants of maternal labor supply very carefully. An extension of the present study to more and different policy indicators, countries and an analysis over time can certainly be considered as future research purposes to establish a well-founded and comprehensive concept of welfare state effort towards maternal labor supply.

VI. REFERENCES

Armingeon, Klaus and Bonoli, Giuliano (eds.). 2006. *The Politics of Post-Industrial Welfare-States: Adapting Post-War Social Policies to New Social Risks*. Routledge

Arts, Wilhelmus A. and Gelissen, John. 2002. "Three worlds of welfare capitalism or more? A state-of-the-art report." *Journal of European Social Policy* 12 (2): 137 – 158

Blau, Francine D., Ferber, Marianne A. and Winkler, Anne E. 2006. *The Economics of Women, Men and Work*. Fifth Edition. New Jersey: Pearson Prentice Hall

Bonoli, Giuliano. 1997. "Classifying Welfare States: A Two-dimension Approach." *Journal of Social Policy* 26 (3): 351 – 72

Castles, Francis G. and Mitchell, Deborah. 1993. "Worlds of Welfare and Families of Nations." Castles, Francis G. (ed.). *Families of Nations: Patterns of Public Policy in Western Democracies*. Aldershot: Dartmouth Publishing Company: 93 – 128

Connelly, Rachel. 1992. "The Effect of Child Care Costs on Married Women's Labor Force Participation." *The Review of Economics and Statistics* 74 (1): 83 – 90

Crossley, Thomas F. and Jeon, Sung-Hee. 2007. "Joint Taxation and the Labour Supply of Married Women: Evidence from the Canadian Tax Reform of 1988." *Fiscal Studies* 28 (3): 343 - 365

Cutright, Phillips. 1965. "Political Structure, Economic Development, and National Social Security Programs." *American Journal of Sociology* 70 (5): 537 – 550

Ehrenberg, Ronald G. and Smith, Robert S. 2009. *Modern Labor Economics, Theory and Public Policy*. Tenth Edition. New Jersey: Pearson Education

- Esping-Andersen, Gøsta. 1989. "The three political economies of the welfare state." *Canadian Review of Sociology and Anthropology* 26 (1): 10 – 36
- Esping-Andersen, Gøsta. 1990. *The Three Worlds of Welfare Capitalism*. Princeton: Princeton University Press
- Ferrera, Maurizio. 1996. "The "Southern" Model of Welfare in Social Europe." *Journal of European Social Policy* 6 (1): 17 – 37
- Franz, Wolfgang. 2006: *Arbeitsmarktökonomik*. 6. Auflage. Berlin: Springer
- Gilbert, Neil and Moon, Ailee. 1988. "Analyzing Welfare Effort: An Appraisal of Comparative Methods." *Journal of Policy Analysis and Management* 7 (2), 326 - 340
- Gornick, Janet C., Meyers, Marcia K. and Ross, Kathrin E. 1996a. "Supporting the Employment of Mothers: Policy Variation across Fourteen Welfare States." *Luxembourg Income Study Working Paper Series*: 139
- Gornick, Janet C., Meyers, Marcia K. and Ross, Kathrin E. 1996b. "Public Policies and the Employment of Mothers: A Cross-National Study." *Luxembourg Income Study Working Paper Series*: 140
- Gornick, Janet C. and Meyers, Marcia K. 2003. *Families That Work. Policies for Reconciling Parenthood and Employment*. New York: Russell Sage Foundation
- Gough, Ian. 1979. *The Political Economy of the Welfare State*. London: Macmillan
- Gustafsson, Sif. 1992. "Separate Taxation and Married Women's Labor Supply: A Comparison of West Germany and Sweden." *Journal of Population Economics* 5 (1): 61 - 85
- Johnson, Karl E. 2003. "Sizing Up the Welfare State: How Do Measurement Concepts Impact Perceived Performance? Assessing the Relationship Between and Consequences of, Variation in the Measurement of Welfare State Effort and Outcomes." Paper prepared for the ISA RC-19 Conference *New Challenges for Welfare State Research* at the University of Toronto, 21-24 August 2003
- Kangas, Olli and Palme, Joakim. 1998. "Does Social Policy Matter? Poverty Cycles in OECD Countries." *Luxembourg Income Study Working Paper*: 187
- Korpi, Walter. 1983. *The Democratic Class Struggle*. London: Routledge and Kegan Paul
- Korpi, Walter. 1985. "Power Resources Approach vs. Action and Conflict: On Causal and Intentional Explanations in the Study of Power." *Sociological Theory* 3 (2): 31 – 45

Korpi, Walter and Palme, Joakim. 1998. "The Paradox of Redistribution and Strategies for Equality: Welfare State Institutions, Inequality, and Poverty in the Western Countries." *American Sociological Review* 63 (5): 661 – 87

Leibfried, Stephan. 1992. "Towards a European welfare state? On Integrating Poverty Regimes into the European Community." Ferge, Zsuzsa and Kolberg, Jon E. (eds.). *Social Policy in a Changing Europe*. Frankfurt am Main: Campus Verlag: 245 – 280

Lewis, Jane. 1992. "Gender and the Development of Welfare Regimes." *Journal of European Social Policy* 2 (3): 159 – 173

Meyers, Marcia K., Gornick, Janet C. and Ross, Katherin E. 1999. "Public Childcare, Parental Leave, and Employment." Sainsbury, Diane (ed.). *Gender and Welfare State Regimes*. Oxford: Oxford University Press: 117 – 146

Michalopoulos, Charles, Robins, Philip K. and Garfinkel, Irwin. 1992. "A Structural Model of Labor Supply and Child Care Demand." *The Journal of Human Resources* 27 (1): 166 – 203

Mincer, Jacob. 1985. "Intercountry Comparisons of Labor Force Trends and of Related Developments: An Overview." *Journal of Labor Economics* 3 (1), Part 2: Trends in Women's Work, Education, and Family Building: S1 - S32

Mitchell, Deborah. 1991. *Income Transfers in Ten Welfare States*. Avebury: Aldershot

Orloff, Ann S. and Skocpol, Theda. 1984. "Why not equal protection? Explaining the politics of public social spending in Britain, 1900-1911, and the United States, 1880s -1920." *American Sociological Review* 49 (6): 726 – 750

Peattie, Lisa and Rein, Martin. 1983. *Women's Claims: A Study in Political Economy*. New York: Oxford University Press

Pettit, Becky and Hook, Jennifer. 2005. "The Structure of Women's Employment in Comparative Perspective". *Social Forces* 84 (2): 779 – 801

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

Plantenga, Janneke and Hansen, Johan. 1999. "Assessing equal opportunities in the European Union." *International Labour Review* 138 (4): 351 - 379

Ruggie, Mary. 1984. *The State and Working Women*. Princeton: Princeton University Press

Sapiro, Virginia. 1986. "The Gender Basis of American Social Policy." *Political Science Quarterly* 101 (2) :221 – 238

- Shaver, Sheila. 1983. "Sex and Money in the Welfare State." Baidcock, Cora V. and Cass, Bettina (eds.). *Women, Social Welfare and the State in Australia*. Sydney: George Allen and Unwin: 146-63
- Siaroff, Alan. 1994. "Work, Welfare and Gender Equality: A New Typology." Sainsbury, Diane (ed.). *Gendering Welfare States*. London: Sage: 82 – 100
- Skocpol, Theda. 1995. *Protecting Soldiers and Mothers: The Political Origins of Social Policy in the United States*. Cambridge: Harvard University Press
- Skocpol, Theda and Amenta, Edwin. 1986. "States and Social Policies." *Annual Sociological Review* 12: 131 – 157
- Stephens, John D. 1979. *The Transition from Capitalism to Socialism*. London: Macmillan Press
- Stier, Haya, Lewin-Epstein, Noah and Braun, Michael. 2001. "Welfare Regimes, Family- Supportive Policies and Women's Employment along the Life-Course." *American Journal of Sociology* 106 (6): 1731 – 1760
- Taylor-Gooby, Peter (ed.). 2004. *New Risks, New Welfare - The Transformation of the European Welfare State*. New York: Oxford University Press
- Therborn, Göran. 1987. "Welfare States and Capitalist Markets." *Acta Sociologica* 30 (2): 237 – 54
- Townsend, Peter and Gordon, David. 2000. "Introduction: The Measurement of Poverty in Europe." Townsend, Peter and Gordon, David (eds.). *Breadline Europe: The Measurement of Poverty*. Bristol: The Policy Press: 1 – 22
- Trzcinski, Eileen. 1991. "Employers' Parental Leave Policies: Does the Labor Market Provide Parental Leave?" Shibley Hyde, Janet and Essex, Marilyn J. (eds.). *Parental leave and Child Care: Setting a Research and Policy Agenda*. Philadelphia: Temple University Press: 209 – 228
- Wilensky, Harold L. 1975. *The Welfare State and Equality. Structural and Ideological Roots of Public Expenditure*. Berkeley / Los Angeles: University of California Press
- Wilensky, Harold .L. and Lebeaux, Charles N. 1965. *Industrial Society and Social Welfare*. New York: Free Press
- Wooldridge, Jeffrey M. 2002. *Introductory Econometrics. A Modern Approach*. Second Edition. Andover: Thomson Learning