Family Policies or Labor Markets? The Male-Female Wage Gap and Gender Occupational Segregation in 14 Welfare States from 1960 to 2008

By

Eric Tranby

09/17/10

University of Delaware
Department of Sociology and Criminal Justice
322 Smith Hall
18 Amstel Ave
Newark, DE 19716

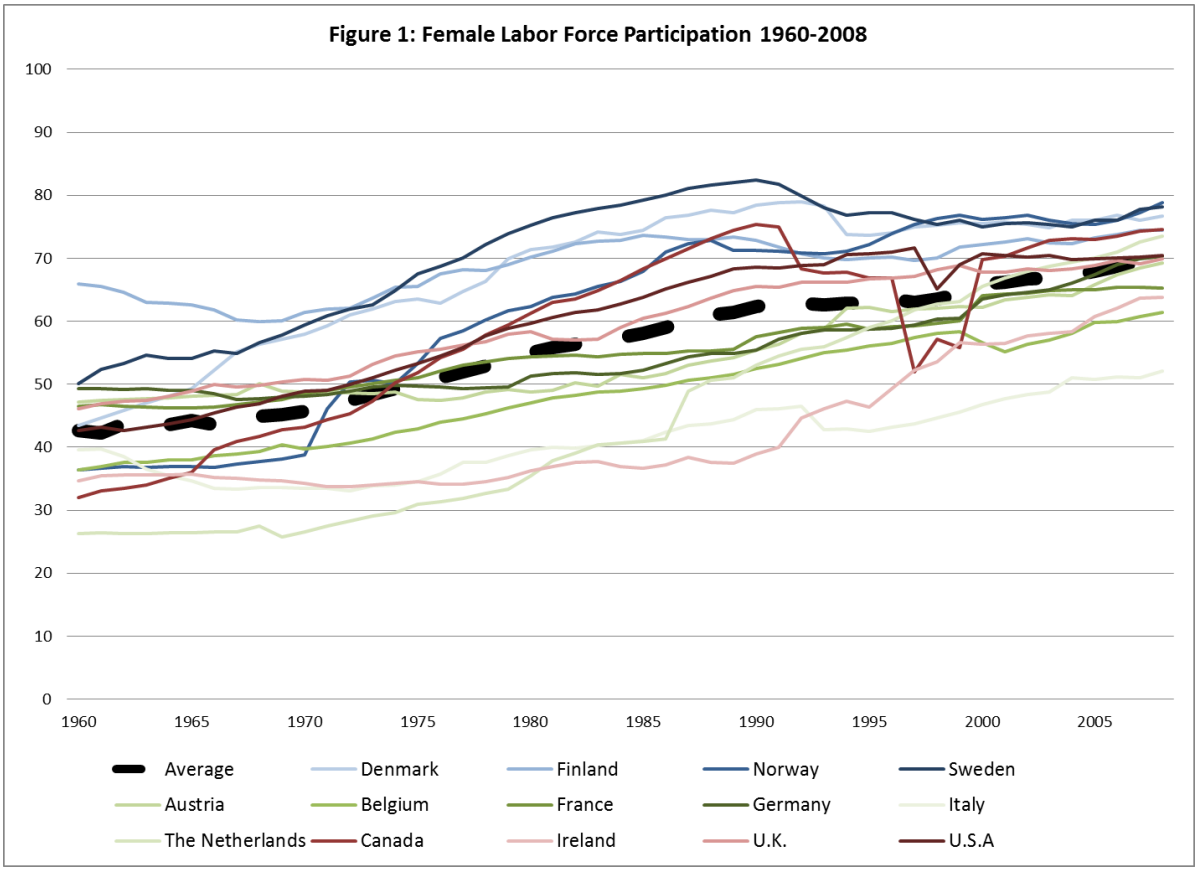
Family Policies or Labor Markets? The Male-Female Wage Gap and Gender Occupational Segregation in 14 Welfare States from 1960 to 2008

Abstract

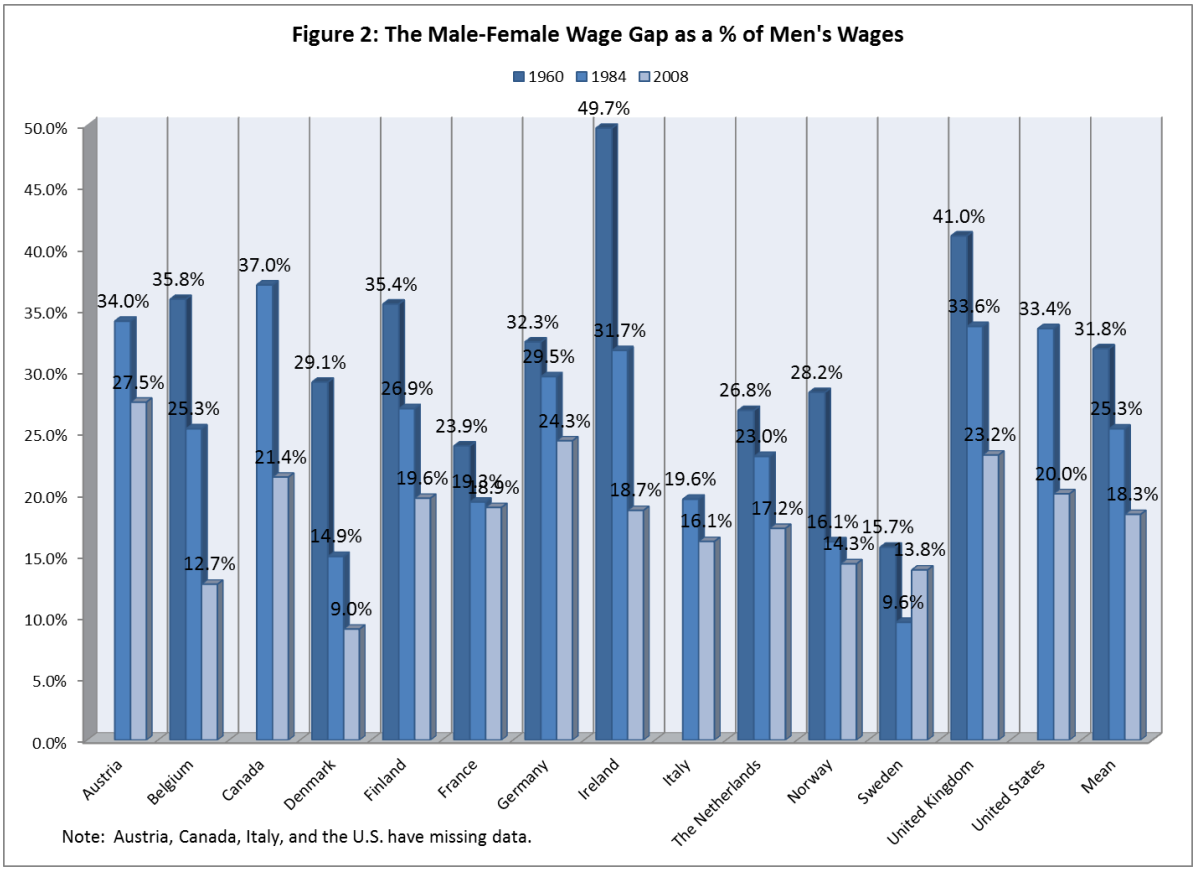
Women continue to face significant employment inequality in wages and are segregated into different jobs. I assess how the welfare state and labor markets influence women's employment inequality in pay and jobs across 14 welfare states from 1960-2008. I focus on family policies including parental leaves, publicly funded childcare, childcare leaves, and family allowances. Family policies are targeted at mothers and families with children, and so should, theoretically, reduce employment inequality between men and women. However, there is little research on this relationship. I find that parental leaves and publicly-funded childcare reduce the male-female wage gap. Neither parental leaves nor childcare policies appear to be related to occupational gender segregation. Family allowances and childcare leaves increase occupational gender segregation. The finding for the pay gap is important because recent research has found that much of the pay gap across countries has been shown to be due to motherhood.

Family Policies or Labor Markets? The Male-Female Wage Gap and Gender Occupational Segregation in 14 Welfare States from 1960 to 2008

Women's employment and continued inequality in a range of employment outcomes, the male-female wage gap, and occupational gender segregation, has captured the attention of social scientists, welfare state researchers, and policymakers. Changes in women's employment have so radically altered the understanding of the welfare state that one prominent welfare state researcher argues that it "occupies center-stage in post-industrial society" with effects that have "reverberat(ed) through family life, politics, and the economy" (Esping-Andersen et. al. 2002:68). Women's labor force participation has increased dramatically across many advanced capitalist democracies, including the countries of Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Sweden, the United Kingdom, and the U.S., over the last 50 years (Figure 1).

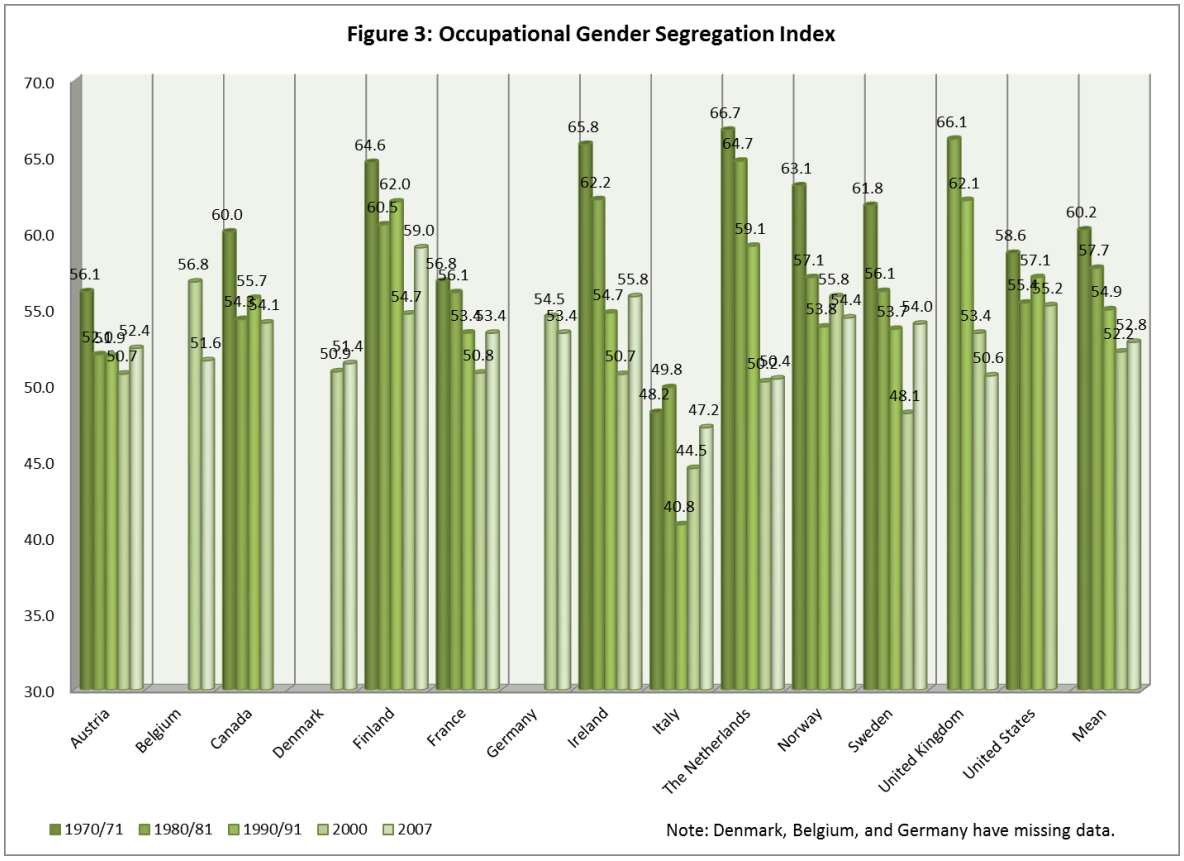


However, women continue to face significant employment inequality pay and are segregated into different jobs than men. Women earn less than men on average across all advanced capitalist democracies, although the pay gap has generally been declining over time (Figure 2)[1]. Men and women are frequently segregated into different jobs, with high rates of occupational gender segregation across countries (Figure 3)[2]. Women are also less likely to receive benefits, have fewer opportunities for promotion, and are more likely to be in marginal and unstable employment (Budig and England 2001; Sigle-Rushton and Waldfogel 2007; Gangle and Ziefle 2009). Moreover, women continue to be responsible for the majority of care and household work across international contexts. Women are likely to face significant penalties,



[1] Figure 2 plots the male-female wage gap in average hourly earnings as a percentage of men's average hourly earnings.

[2] Figure 3 plots the size-standardized index of dissimilarity with higher values indicating more segregation in occupations. An index of dissimilarity score of 1 would be a perfectly segregated labor market, whereas a score of 0 would be a perfectly integrated labor market.



both in the short- and long-term, for career interruptions related to this care giving work (Budig and England 2001; Gangle and Ziefle 2009).

Women's employment outcomes have attracted scholarly and policy attention due to increasing fiscal austerity, expanding life-spans, and decreasing fertility in many welfare states (Scharpf and Schmidt 2000; Huber and Stephens 2001; Esping-Andersen et. al. 2002). High levels of female labor force participation have been found to be an important protective factor in helping welfare states maintain social spending by increasing tax revenue and economic growth (Scharpf and Schmidt 2000; Aronja, Ladaique, and Pearson 2001). Moreover, a high level of female employment lowers the number of people in poverty, decreasing the fiscal burden on the welfare state (Aronja, Ladaique, and Pearson 2001, Esping-Andersen et. al. 2002). Finally, due

to a variety of factors, the increase in women's rates of labor force participation has been almost entirely responsible for household income growth since the mid-1970's (Kenworthy 2008).

However, with less inequality between men and women in employment, welfare states and households would see even greater benefits from female labor force participation. In other words, if women held jobs with the same pay and benefits as men, average incomes would be higher and families would have an easier time make ends meet. This would lead to lower levels of poverty, higher tax revenues for welfare states, and more robust economic growth. Thus, continued women's employment inequality is a pressing issue for women, families, and welfare states. Social science research has developed two parallel explanations for these changes in women's employment outcomes at the aggregate (country) level. These two explanations have developed from two literatures: the interdisciplinary literature on the welfare state and social policy, and the sociological literature on changes in the economy, labor markets, sex segregation, and women's labor supply. These two literatures have developed complementary, yet divergent, theoretical and empirical explanations for gender inequality in employment. The literature on the welfare state places primary importance on welfare state activities and policies because they regulate the relationship between the labor market and women through direct employment and policy. As a result, more generous policies can influence women's employment outcomes. On the other hand, the literature on changes in the economy, labor markets, sex segregation, and women's labor supply places primary importance on the role of the labor market in determining women's employment outcomes.

In previous work, I have argued that these literatures frequently work without reference to each other, with the labor market literature ignoring the role of the state and its policies, and the welfare state literature ignoring the role of the labor market, with relatively few exceptions

(Tranby 2006). While research has independently shown that both labor market processes and welfare state policies and activities influence women's employment outcomes, we know very little about how these parallel processes work in context with each other. Thus, we do not know whether these processes influence rates of labor force participation and gendered employment inequality in employment outcomes in the same manner or if they have competing effects. We know even less about how family policies influence women's employment inequality. Understanding the effects of these policies provides useful insights into understanding the interrelationships between the welfare state and the labor market, because these policies sit at the intersection of welfare state policies and activities, market factors, and individual forces.

In this paper, I empirically assess how both welfare state policies and activities and changes in the economy and labor markets influences women's employment outcomes across 14 welfare states[3] from 1960 to 2008. I focus primarily on family policies, a subset of state social policies that, theoretically, mediate the relationship between the market and family, and allow men and women to engage in (or opt out of) care-taking responsibilities without losing their labor market position and rewards. The family policies I consider include parental leaves, publicly funded childcare and family allowances, support benefits, and tax credits. These policies are particularly intriguing because there is compelling evidence that much of the gap between men's and women's employment outcomes is caused by motherhood (Sigle-Rushton and Waldfogel 2007; Budig, Misra, and Boeckmann 2009).

Family policies are targeted specifically at mothers, and families with children, and so should, theoretically, reduce the inequality between men's and women's employment outcomes. However, there is relatively little research into the role that family polices play in employment

[3] The countries in this analysis are Austria, Belgium, Canada, Denmark, Finland, France, (West) Germany, Ireland, Italy, the Netherlands, Norway, Sweden, the United Kingdom, and the United States.

inequality at the aggregate level, especially in hours of work, the wage gap, or occupational gender segregation. This papers fills in that gap in the research by investigating the impact of family policies on the male/female wage gap and gender occupational segregation, while accounting for other welfare state policies and activities and labor market factors that have been linked to women's employment outcomes.

I begin by describing patterns of women's employment inequality across the countries in my sample and over time. I then describe how welfare state and labor market processes are associated with these outcomes. I then describe family policies and why there is good reason to believe that generous family policies should result in higher rates of female labor force participation. I then describe the literature that empirically assesses the relationship between family policies and women's labor force participation.

I next describe my data, variables and methods before turning to the results of the analysis. I find that parental leaves and publicly funded childcare reduce the male-female wage gap. Childcare for infants and toddlers had the broadest and largest impact on these outcomes, while childcare for pre-school children has a smaller impact. Importantly, neither parental leaves nor childcare policies appear to be strongly related to occupational gender segregation, as found in a previous study. On the other hand, family allowances and increase occupational gender segregation. I conclude that my analysis provides evidence that generous maternity and parental leaves and high levels of publicly funded childcare work to reduce employment inequality between men and women by reducing inequalities in hours of work and reducing the male-female pay gap. The finding for the pay gap is perhaps the most exciting, because in recent research, much of the pay gap across countries has been shown to be due to motherhood (Sigle-Rushton and Waldfogel 2007; Budig, Misra, and Boeckmann 2009). I expand upon the

implications of these findings for researchers and policymakers in the conclusion. I also describe the weaknesses of this research, and suggest directions for future research in this concluding chapter.

Women's Employment Inequality in Comparative Perspective

The Male-Female Wage Gap: Information on the male-female wage gap is presented in Figure 2 above. The wage gap is presented as a percentage of men's wages, so a wage gap of 50% would indicate that women make 50% less than men, on average. The wage gap has declined between 1960 and 2008, from an average of 31% to an average of 18%; however, there remains a substantial wage gap between men and women. By the end of this time period, the countries with the lowest wage gap include Denmark, Belgium, Sweden, and Norway, while Austria, Germany, and the U.K. have larger wage gaps. There is little in the way of "clustering" in the wage gap, with substantial variation in wage gaps within regime types. Explanations for this persistent wage gap are many and varied, some of which will be explored below.

Occupational Gender Segregation: Information on occupational gender segregation, or the extent to which men and women are segregated into different occupations, is also presented in Figure 3 above. Occupational gender segregation is measured using the size-standardized index of dissimilarity. This index can be interpreted as the percentage of men or women that would have to be removed from the labor force to bring about a perfect correspondence between the sex composition of each occupation and that of the entire labor force, effectively comparing the existing distribution to a perfectly gender neutral one (Charles and Grusky 2004). As with the male-female wage gap, occupational gender segregation has generally declined over time, but remains persistent.

Occupational gender segregation is an important measure of women's employment inequality because high levels of segregation between men and women has been shown to result in larger reward differentials between men's and women's occupations. In particular, in comparative research, Charles and Grusky (2004) argue that sex segregation is really made up of two components, horizontal sex segregation and vertical sex segregation. Horizontal segregation refers to the segregation of men and women along the manual-nonmanual occupations divide, respectively. Vertical segregation refers to the tendency of men to occupy the most desirable occupations on each side of the manual-nonmanual divide (Charles and Grusky 2004). Either of these types of segregation can result in reward differentials in men's and women's jobs.

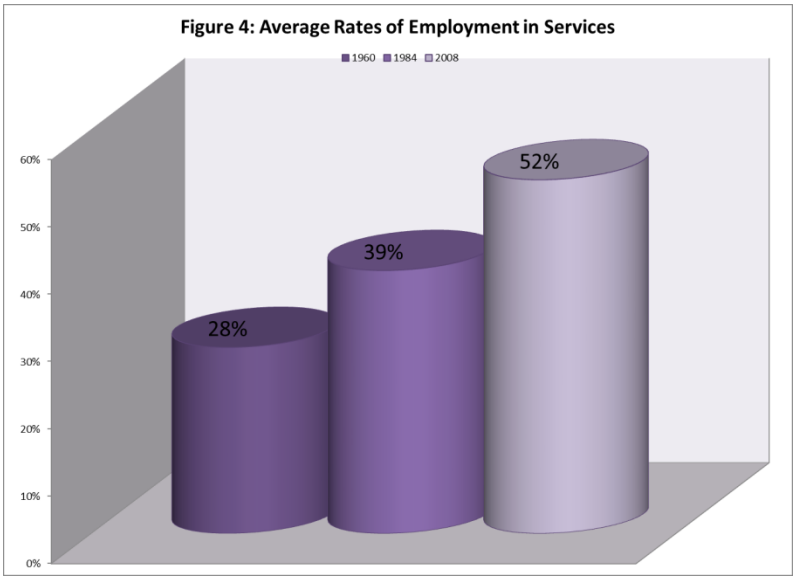
Moreover, research on occupational gender segregations in the United States demonstrates that the occupations in which women are concentrated tend to be rewarded at lower levels with fewer benefits, are less stable, and offer fewer opportunities for advancement and promotion than men's jobs (Gunderson 1989; England 1992; Diprete 1989). However, it is not the case that high levels of gender segregation are invariably associated with a large gender pay differentials. For example, both Norway and Sweden have relatively high levels of gender segregation, but a low male-female wage gap.

Labor Markets, Welfare States, and Women's Employment Inequality in Comparative Perspective

Variations and changes in women's employment outcomes are due to a variety of different factors including a decline in manufacturing work and a corresponding rise in service work, rising real wages for women and declining real wages among men, business cycles, increasing educational and human capital attainment among women, declining marriage and fertility rates, the relative political power of women, left parties, and unions, and government

policies and practices (England and Farkas 1986; Diprete and Grusky 1990; Diprete and Nonnemaker 1997; Blau, Ferber, and Winkler 1998; Daly 2000; Orloff 2002; Esping-Andersen et. al. 2002). The main factors I consider in this research are family policies, which I review in the section, while employment in services, women's educational attainment, economic growth, rates of unemployment, the long-term success of left-leaning political parties, the political participation of women in government, the degree of corporatism, the type of taxation, and public sector employment are considered to be parallel processes that may be more closely associated with women's employment inequality than family policies. In this section, I describe the literature that leads me to expect that each of these outcomes will be associated with women's employment outcomes. As noted in the introduction, these literatures often work without reference to each other, so there is little evidence to suggest which of these sets of explanations is more, or less, strongly related to women's employment outcomes.

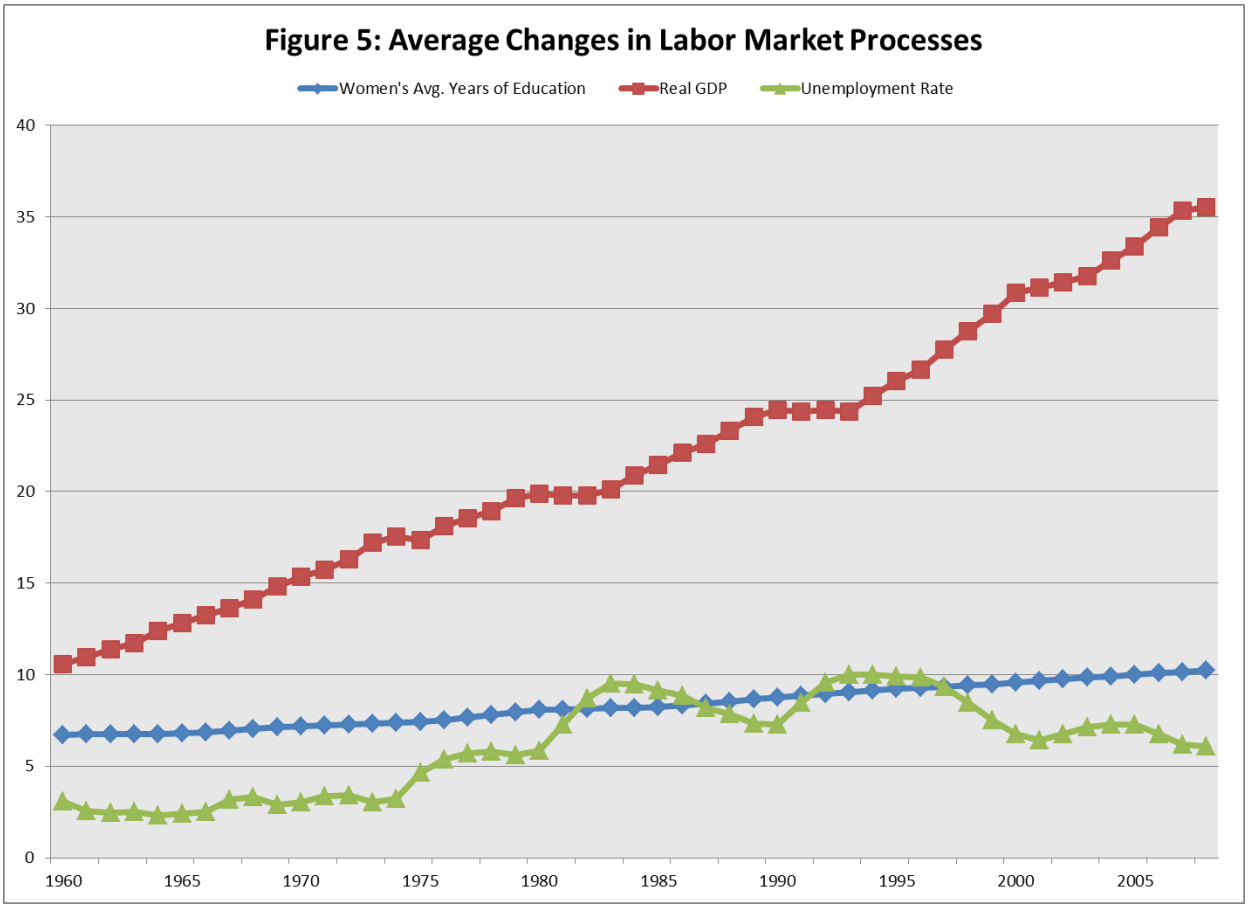
Beginning with labor market processes, the growth in service sector employment and the transition to what has been called the postindustrial economy (Myles and Quadagno 2002) is likely the most important explanation for, and can be the most clearly linked to, women's increased labor force participation but continued employment inequality. Changes in service sector employment over time, by regime type, are presented in Figure 4. The postindustrial economy is characterized by the massive shift of



employment from the manufacturing to the service sector over the last 20-30 years caused by a mixture of increasing competition from cheaper imported products and international firms, rising costs, and technological changes (Rubin 1996). This increase in employment in services has been shown to increase rates of female labor force participation because women tend to be concentrated in service sector or nonmanual jobs (Huber and Stephens 2000; Berg and Kalleberg 2001; Charles and Grusky 2004).

However, service sector jobs, especially in the U.S., Canada, Ireland, and the U.K., are also generally associated with poor employment outcomes for women because they generally require fewer skills and are consequently lower paying, with lower levels of benefits and job stability. Therefore, the relatively low pay of service sector employment should increase the male-female wage gap and increasing service sector employment should result in higher levels of occupational gender segregation because the expansion of the service sector tended to draw women workers into the lower levels of nonmanual (service) sector, while men tended to dominate the most desirable occupations with the highest rewards, in both manual and nonmanual occupations, reinforcing both vertical and horizontal sex segregation (Rubin 1996; Charles and Grusky 2004).

Average years of schooling and, consequently, educational attainment for both women and men has increased substantially across all countries over the period (Figure 5). Increasing levels of educational attainment among women should reduce the male-female wage gap by increasing women's human capital, thus increasing their labor supply, ability to work full-time, and competitiveness in wages with men (England and Farkas 1986; Blau, Ferber, and Winkler 1998; England, Hermsen, and Cotter 2000). There appear to be differential effects of women's educational attainment on the male-female wage gap across countries, with the wage gap being



larger among less educated women in the U.K., the U.S., Germany, and the Netherlands, but no differences by education in the Nordic countries (Sigle-Rushton and Waldfogel 2007). However, it is likely that demand-side mechanisms, particularly employment in services, have a stronger effect on women's employment outcomes than women's educational attainment (Reskin 1993). Women's educational attainment should not be related to occupational gender segregation, with research finding that occupational gender segregation does not seem to be strongly influenced by supply-side characteristics (Roos 1983; Reskin 1993; Charles and Grusky 2004).

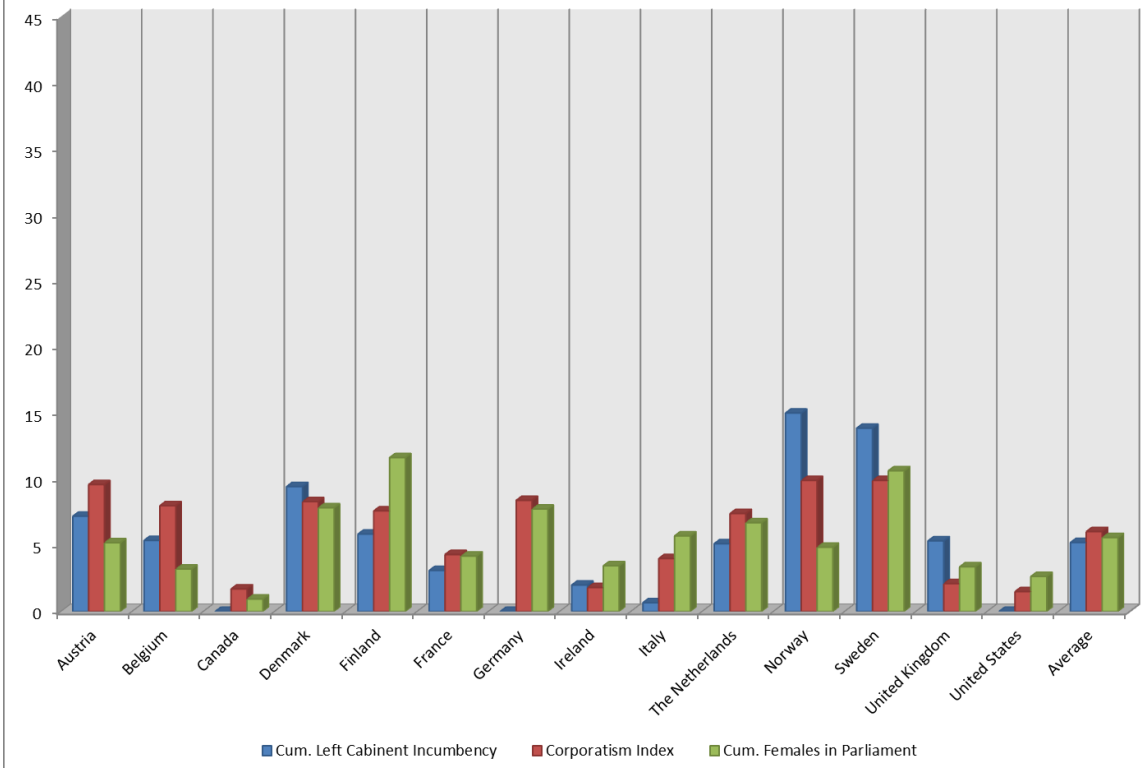
I use economic growth (measured as real GDP per capita) and rates of unemployment to account for the effects of the business cycle (Figure 5). Economic growth has been shown to increase women's labor force participation (Pampel and Tanaka 1986; Mammen and Paxson

2000). The effects of economic growth on the male-female wage gap and occupational gender segregation are less clear. Higher unemployment rates should be associated with, a higher male-female wage gap, and decreased occupational gender segregation because women and nonwhites are in areas of the labor market particularly susceptible to cyclical recessions that are endemic in the "new economy" (Diprete 1981; Cummings 1987).

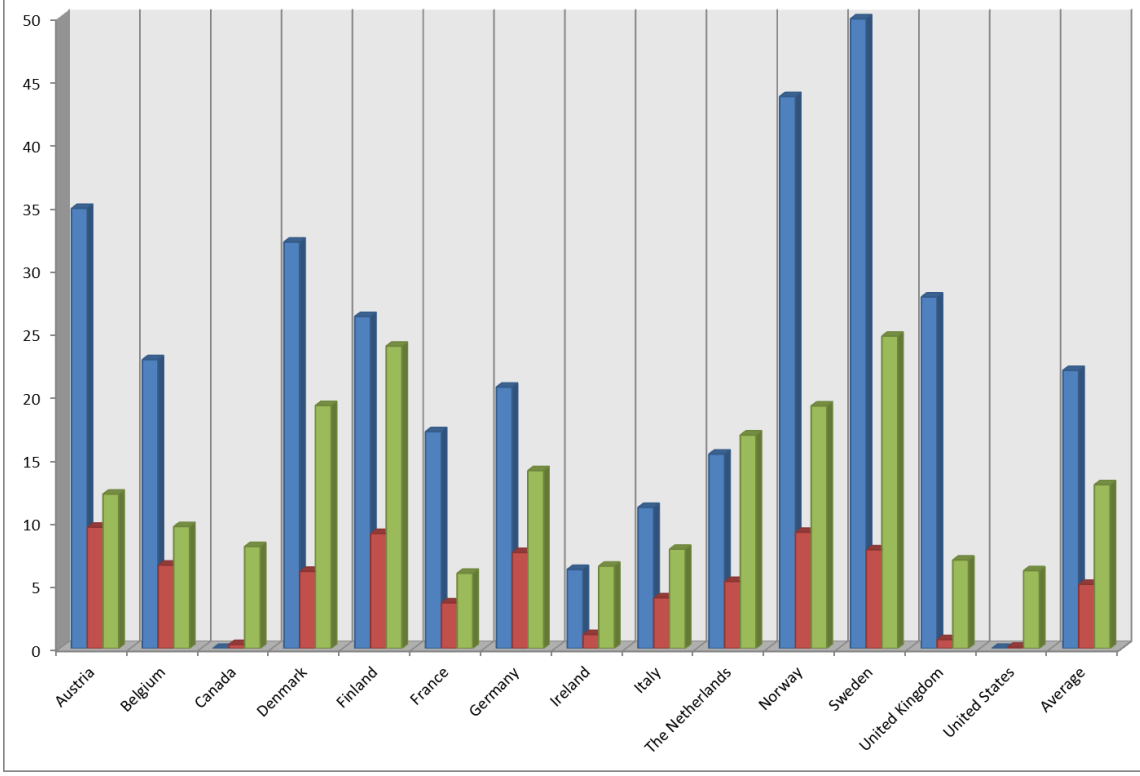
Turning to welfare states processes, I consider three elements of the political context that have been shown to or should influence women's employment outcomes: the long-term success of left parties, the relative degree of corporatism, and the political participation of women in government. Changes in these variables across countries are summarized in Figure 6. In particular, the long-term success of left, or Social Democratic parties, especially when combined with a powerful and centralized trade union movement that negotiates with the government and employers, called corporatism, tends to result in a leveling of the redistribution system, maintenance of (near) full employment, and large public sectors with public delivery of services all aimed at correcting inequalities created by the market (Esping-Andersen and van Kersbergen 1992; Huber, Ragin, and Stephens 1993; Huber and Stephens 2001). As such, the long-term success of left parties and high levels of corporatism has been shown to lead to a lower male-female wage gap (Gornick and Jacobs 1996; Huber and Stephens 2000; Eliason, Stryker, and Tranby 2008). However, the long-term success of left parties and high levels of corporatism is likely also associated with high levels of occupational gender segregation, with Charles and Grusky (2004) finding that horizontal segregation is particularly strong in such countries, reflecting a "different but equal" work norm in these countries.

There is good reason to believe that when women are more integrated in the political context, they will be more integrated into the economic context and more able to exert control

Figure 6: The Political Context in 1960



The Political Context in 2008



over it, leading decreased gaps between men and women in wages and occupational gender segregation (O'Connor 1993; Esping-Anderson et. al. 2002, Petit and Hook 2005).

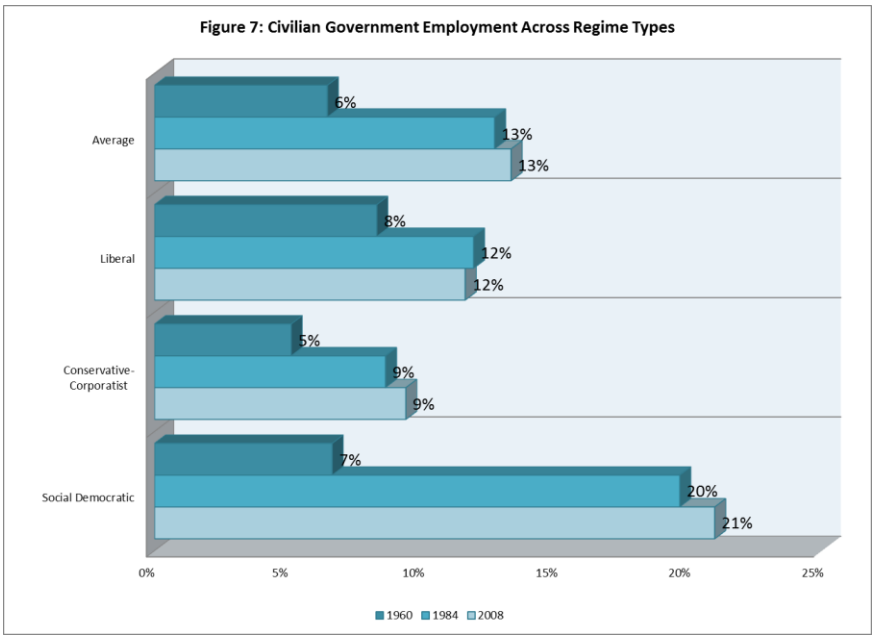
I also consider these political context factors because they may be important mediators between the labor market processes described above and women's employment outcomes. In particular, the long-term success of left parties and the degree of corporatism leads to an emphasis on redistribution, equality, and maintenance of (near) full employment, which may blunt the negative effect of employment in services and the business cycle on women's employment outcomes. Moreover, these same political context factors may be important mediators in any relationship between family policies and women's employment outcomes. In particular, because left parties and female legislators are likely to pass more generous family policies than other political systems, not including them in a model of family policies on women's employment outcomes may lead to spurious findings (Wennemo 1994; Gauthier 1996; Ferrarini 2003; Lambert 2008). Recent evidence has found that the proportion of women in parliament is causally connected to the introduction or extension of public childcare provision, parental leave, and part-time work legislation (Bleijenbergh and Roggeband 2007).

Another welfare state process I consider is the way in which welfare states collect taxes from couples. In particular, joint taxation, in which the basic unit of taxation is the married couple[4] and larger tax burdens are placed couples who both work higher paying jobs or long hours, has been shown to reduce the female labor force participation rate and increase the male-female wage gap when compared to individual taxation, where there is no distinction by employment of either partner (Dingeldey 2001; Jaumotte 2003). There is no clear relationship

[4] In joint taxation, the income of both spouses is added together and then halved; the standard rate of income tax is then applied to each half of the joint income, and the amount of tax calculated is then doubled to give the couple's total tax liability for the year.

between the type of tax and women's concentration in part-time work or occupational gender segregation.

The final welfare state process I consider is public sector employment (Figure 7). The large public sectors that result from the combination of long-term Social-Democratic incumbency and corporatism emphasize service delivery. High public sector employment has also been connected to a lower male-female wage gap, because of the compressed wage distribution in public sector jobs (Gornick and Jacobs 1996). However, large public sectors are also more likely to have high levels of occupational gender segregation, because jobs in public service delivery in these states are largely held by women, and women can maximize their pay by working in the public sector (Hansen 1997; Huber and Stephens 2000; Huber and Stephens 2001).



It should be clear from the discussion in this section that service sector jobs mean very different things across regime types[5]. Women are likely to be in the public service sector in the social democratic states (Huber and Stephens 2000), because they tend to be well-paid with good

[5] Here I use Esping-Andersen's (1991) now famous social policy regime typology. This typology consists of three social policy regime types that share common ideologies, features, goals, and policies: the liberal, consisting of the English-speaking countries, the conservative corporatist, consisting of the continental European countries, and the social democratic, consisting of the Nordic countries. However, it is important to recognize that there are substantial intra-cluster variations in these outcomes, with each distinctive national design of the welfare state interacting with individual and structural factors and shaping women's employment in different ways (Rubery, Smith, and Fagan 1999).

benefits and possibilities for advancement. However, the social democratic welfare states have been criticized for having high levels of gender segregation due to this emphasis on public employment, although this gender segregation doesn't appear to be connected with a substantial pay gap between men and women (Leira 1992; Orloff 1996; Hansen 1997; Leira 2002; Mandel and Semyonov 2003; Charles and Grusky 2004).

Women also tend to be segregated into service sector jobs in the liberal welfare states; however, these jobs are very different from service sector jobs in the social democratic states. Service sector jobs are generally located in the secondary labor market (Doeringer and Piore 1971; Bielby and Baron 1986; Edwards 1989). These jobs require few skills and tend to be low paying, have low or no benefits, and offer limited opportunities for advancement (England 1992; Reskin 1993). By being segregated into the service sector, women tend to be segregated into 'bad' jobs with low rewards, making the wage gap between men and women particularly large in the liberal countries (England 1992; O'Connor, Orloff and Shaver 1999). However, it is important to keep in mind that research on the United States has revealed that jobs in which women dominate, regardless of sector or task, pay less than jobs in which men dominate (England 1992; England, Thompson, and Aman 2001). Thus, my research will need to carefully account for the difference in the type and quality of service sector jobs across regime types. In the methods section, I describe how I dealt with this difference, as well as the tight relationship between long-term left party success and corporatism.

Family Policies

Family policies, or policies directed toward families, are one way in which welfare states have attempted to influence women's employment inequality. Theoretically, family policies

work by redistributing the costs of having and raising children in order to make it easier for families to balance work demands and family needs (Glass and Estes 1997; England and Folbre 1999; Glass 2000). These policies also recognize the value of having and caring for children to the state by subsidizing women's care work and/or paying for the care of children directly. I define family policies as publicly provided or managed services, benefits, or transfers that are exclusively targeted to couples with children and/or single parents (Gauthier 1996). The family policies that I consider in this analysis include maternity/parental leaves, publicly-funded or subsidized child care, childcare leaves, and family allowances and benefits.

Parental Leaves: Parental leaves can be defined as an entitlement to claim time off in order to care for a dependent, usually a child. Parental leaves represent an important reorientation of the relationship between the state, the market, and the family because they serve the demands of reproduction rather than production (Leira 2002). Moreover, parental leaves establish the primacy of the parental obligation to care for dependents over employers demands for labor. A variety of different types of leaves fall under the rubric of 'parental leaves'. While the four types of leaves I discuss here are broadly consistent with the majority of the literature, there is by no means complete agreement on their definitions. *Maternity leaves* are available only to the mother immediately before and after the birth of the child. In most countries, these leaves have been available longer than any other leave and have a generally high wage replacement rate. *Parental leaves* are leaves that can be taken immediately after the expiration of the maternity leave. These leaves are generally longer than the maternity leave, available to both parents, and are not as well compensated as the maternity leave. *Paternity leaves* are portions of the parental leave that are only available to the father and are meant to help fathers connect with their children and alter the distribution of care work in the family. These leaves are

generally short in duration with high wage replacement rates, and are in place in Sweden, Norway, and a few other countries. The last category of leaves is *childcare leaves*, which will be addressed below. It is important to realize that some countries combine all of these leaves into a single 'parental leave', while in others they are counted and reordered as separate and distinct leaves, making cross-national comparison somewhat difficult.

The expansion of maternity leaves can be seen in Table 1. During this period, the length of leaves was extended and benefits were tied to wages (Gauthier 1996). As maternity leaves expanded, they became a major component of state support for families. The most extensive reforms were made in the Scandinavian states, notably Sweden and Norway, which emerged as the leaders in the duration of maternity leaves by the end of the period. The U.S., Ireland, and Canada are the clear laggards in duration, wage replacement, and the availability of parental leave.

The period from the late-1970's to the present has brought further increases in maternity leave duration and wage replacement rates, however, the most important change has been the expansion of parental leaves that are available to both parents during this period. There continue to be differences in parental leaves between countries. Moreover, parental leaves in the more generous countries of Sweden and Norway tend to be partially individualized, in which one part of the leave is reserved for each parent and the remainder of the leave can be allocated how the parents see fit. These leaves are also highly flexible, so that leaves can be taken part-time and leave usage can be staggered over a number of years (Bruning and Plantega 1999). Parental and maternity leaves in other countries rarely have these features.

While there are substantial difficulties in interpreting the available information on take-up rates due to data limitations, the data we do have suggests that there are substantial

Table 1: Select Information on Public Parental Leaves for 14 Welfare States, 1998-2005

	Duration of Maternity Leave in Weeks				Wage Replacement Rate (% of Wage)				Duration of Parental Leave in Weeks			
Country	1960	1982	2005	Change Over Period	1960	1982	2005	Change Over Period	1960	1982	2005	Change Over Period
Sweden	26	52	52	26	65%	83%	80%	15%	26	26	26	0
Norway	12	18	42	30	0%	100%	100%	100%	0	52	0	0
Italy	14	20	21	7	80%	80%	76%	-4%	26	26	26	0
Denmark	11	24	18	7	0%	90%	100%	100%	10	10	10	0
United Kingdom	18	18	18	0	0%	48%	46%	46%	0	40	26	26
Finland	6	17.5	17.5	12	0%	80%	66%	66%	0	26.3	26	26
Austria	12	16	16	4	100%	100%	100%	0%	0	0	0	0
France	14	16	16	2	67%	90%	100%	33%	88	88	156	68
The Netherlands	0	12	16	16	0%	100%	100%	100%	0	0	0	0
Belgium	14	14	15	1	60%	80%	76%	16%	0	0	0	0
Canada	0	15	15	15	0%	60%	55%	55%	0	0	20	20
Germany	12	14	14	2	75%	100%	100%	25%	0	18	148	148
Ireland	12	14	14	2	40%	70%	70%	30%	0	12	14	14
United States	0	0	12	12	0%	0%	0%	0%	0	0	0	0
Mean	11	18	20	10	35%	77%	76%	42%	11	21	32	22

Data Source: See Appendix 1

differences in parental leave usage across countries. The continental European and English speaking countries tend to have high take-up rates among women, but low take-up rates among men. That is, women use the vast majority of parental leaves in these countries, even if men are eligible to use them (Bruning and Plantega 1999). Moreover, mothers who use their leaves tend stay on leave for the majority of the leave duration (Moss and Deven 1999). Exceptions to this rule of high take-up rates are countries with strict eligibility requirements and/or short leaves such as Denmark, the Netherlands, and France, which have much lower take-up rates even among eligible mothers (Bruning and Plantega 1999).

The Scandinavian countries, however, are noted for having high take-up rates among both mothers and fathers. While mothers use the majority of the leave period, most fathers in the Scandinavian countries do use the short 'daddy' or paternity leaves to which they are entitled (Bruning and Plantega 1999; Moss and Deven 1999). These leaves are tremendously popular among researchers, policy makers, and the public in these countries because they have potential to help set new norms for what makes a 'good' father, and may signal a far reaching change in the way fathers and mothers negotiate employment and childcare (Leira 2002). These leaves, however, are still relatively short and only some fathers, particularly first-time fathers and the more educated, tend to use them (Sundstrom and Duvander 2002). Moreover, men's take-up is generally limited to these 'daddy' leaves, with most men not taking the additional months of the parental leave that is available to them (Leira 2002).

Finally, parental leave researchers have theorized about how various lengths of leaves will impact women's employment outcomes. Some researchers argue that relatively short leaves of less than six months have little impact on women's employment outcomes because they are so short that women are more likely to leave the labor market than use leaves, although there is

almost no research to support this point (Moss and Deven 1999). Leaves between six months and one year, on the other hand, are hypothesized to have a positive impact on women's employment outcomes because they allow women to claim time off in order to care for a new child without endangering a woman's labor market position (Ronsen and Sundstrom 2002; Misra, Buding, and Moller 2007). Finally, leaves longer than one year, especially those with low wage replacement rates, are believed to have negative effects on women's employment outcomes because they entail prolonged detachment from the labor market, making it difficult for women to be in or advance in the labor market in the long term (Ruhm and Teague 1995; Moss and Deven 1999; Leira 2002; Ronsen and Sundstrom 2002).

Child Care: Publicly-funded childcare is a vital issue for gender equality in employment outcomes because mothers are still disproportionately responsible for childcare (Randall 2000). While parental leaves serve the demands of reproduction, childcare provision allows parents to balance the reproduction and production roles by relieving mothers from the demands of full-time childcare, allowing women to maintain a constant connection to the labor force (Leira 2002). Thus, publicly funded childcare should, theoretically, increase women's labor force participation and decrease women's rates of and concentration in part-time employment, the male-female wage gap, and occupational gender segregation, especially when it is universally available.

The Scandinavian countries and Belgium come closest to this model, having high quality, publicly funded childcare with near universal coverage in most countries (Leira 2002; Michel and Mahon 2002). In particular, Sweden was the first welfare state in my sample to focus on the public provision of childcare. The motivations for this early establishment of publicly funded childcare were driven by worries around the declining birthrate, along with an interest in early

childhood education (Gauthier 1996). However, as can be seen in Table 2, the real expansion in publicly funded childcare in these countries began in the mid- to late-1960's and was spurred by the entrance of increasing numbers of women into the labor force (Gauthier 1996; Leira 2002). In increasing publicly funded childcare provisions, the social democratic countries, again especially Sweden, were motivated both by the need to support working mothers in order to achieve gender equality, and by an interest in early childhood education, especially the educational value of early learning and socializing (Gauthier 1996; Mahon 2002).

Several countries came close to achieving universal coverage in publicly-funded childcare by the mid-2000's, including Denmark, Sweden, and Norway. In comparative perspective, these countries have high levels of coverage, with 63% of children ages 0 to 2 and 89% of children ages 3 to school age in publicly funded childcare. These countries are the only group of countries with such high levels of coverage for children ages 0 to 2. This age group is much more expensive to care for, needing higher staff-to-child ratios than older children, so such high levels of coverage demonstrates a marked concern for gender equality and women's employment outcomes, because they increase both supply and demand for women's employment (Gauthier 1996). Furthermore, while there are substantial local variations, childcare facilities tend be of high quality with relatively low staff-child ratios and highly trained staff (Kroger 1997; Michel and Mahon 2002). Childcare facilities also tend to be highly flexible in these countries, with many facilities being drop-off centers that are open the majority of the day (Michel and Mahon 2002). Near universal coverage and the high quality and flexibility of childcare facilities has institutionalized a cultural expectation that parents should use publicly funded childcare because it is what good parents do (Leira 2002).

Table 2: Select Information on Publicly Funded Childcare for 14 Welfare States, 1960-2005.

	Percentage of Children Ages 0 - 2 in Publicly Funded Childcare				Percentage of Children Ages 3 - School Age in Publicly Funded Childcare			
Country	1960	1982	2005	Change Over Period	1960	1982	2005	Change Over Period
Denmark	0.0%	37.0%	63.0%	63.0%	0.0%	70.0%	90.7%	90.7%
Sweden[a]	3.3%	52.6%	85.6%	82.3%	3.3%	52.6%	85.6%	82.3%
Norway	0.0%	N.A.	42.3%	42.3%	0.0%	N.A.	90.5%	90.5%
Belgium	6.1%	20.0%	41.7%	35.6%	89.1%	95.0%	99.8%	10.7%
Finland	0.0%	24.6%	26.3%	26.3%	0.0%	45.3%	67.8%	67.8%
The Netherlands	0.0%	1.0%	25.0%	25.0%	25.1%	44.7%	57.6%	32.5%
France	4.3%	16.3%	20.0%	15.7%	48.9%	90.9%	100.0%	51.1%
Austria	1.7%	3.8%	10.5%	8.8%	16.2%	56.2%	74.9%	58.7%
Italy	2.5%	4.5%	7.0%	4.5%	0.0%	82.1%	99.4%	99.4%
United States	0.0%	1.0%	6.0%	6.0%	28.3%	28.4%	58.4%	30.1%
Canada	0.0%	4.0%	5.0%	5.0%	0.0%	28.0%	56.8%	56.8%
Germany	0.3%	0.9%	5.0%	4.7%	23.8%	56.3%	79.3%	55.5%
United Kingdom	0.9%	1.7%	2.0%	1.1%	8.9%	38.0%	90.5%	81.6%
Ireland	N.A.	N.A.	0.0%	N.A.	0.0%	43.9%	49.4%	49.4%
Mean	1.5%	13.9%	24.2%	24.6%	17.4%	56.3%	78.6%	61.2%

a: Data for Sweden is combined for ages 0 to School Age

Data Source: See Appendix 1

In Denmark, Sweden, and Norway, childcare has taken on the status of an entitlement or social right, and promotes both the mother's and father's employment (Leira 2002). Thus, in these countries, publicly funded childcare promotes an equal division of family and work responsibilities between fathers and mothers. It is important to qualify this utopian world somewhat because research has found that there remain substantial variations in access to childcare in social democratic countries, with immigrants and the poor having less access to childcare than the middle class, largely due to the substantial role of local governments in providing and managing childcare facilities (Kroger 1997; Allen 2003).

Publicly financed childcare facilities developed much later in most of the continental European countries with a different set of motivations. The development of publicly financed childcare in these countries was driven largely by a belief in the value of early education, as well as by population concerns (Gauthier 1996). This is most evident in France, with its extensive system of preschools that were designed explicitly to educate children (Gauthier 1996). The emphasis on pre-primary education can be seen in Table 2. While there is extensive coverage across Europe for children ages 3 to school age, there is only minimal coverage for children ages 0 to 2, although the situation is improving. The low provision of infant care is reflective of national ideologies that believe mothers, especially those with young children, should not work outside of the home (Gauthier 1996). There is substantial variation, however, across conservative countries in the coverage of care. For example, France and Belgium have substantial percentages of children ages 0-2 in publicly funded childcare and extensive, high quality, flexible childcare for children of all ages, due to an emphasis on child education and pronatalism (Gauthier 1996), while the Netherlands lags significantly in the percentage of children ages 3-5 in publicly funded childcare. Germany has high quality, but limited, infant

care, and inflexible and incoherent childcare for older children, making it more difficult for women to use public funded childcare to balance work and family responsibilities (Kreyenfeld and Hank 2000).

Publicly funded childcare in the continental European countries tends to be of high-quality, but it is much less flexible than childcare in the Scandinavian countries. Childcare centers, largely located in primary schools or churches, tend to be open very limited and sometimes irregular hours. There are generally substantial regional variations in the childcare in these countries, particularly in Germany (Kreyenfeld and Hank 2000). Finally, there are almost no private childcare providers in many of these countries, because private firms simply cannot compete with subsidized providers. Therefore, from a research perspective, the structure of, and motivation for, publicly funded childcare in conservative countries simply do not facilitate the employment of women (Gauthier 1996; Kreyenfeld and Hank 2000). While publicly funded childcare likely has some positive impact on helping women balance work and family demands, the majority of women in these countries either do not work when their children are young or rely on informal arrangements for childcare (Drobnic, Blossfeld, and Rohwer 1999; Kreyenfeld and Hank 2000).

Publicly funded childcare is generally limited in the U.S., U.K, Canada, and Ireland because these countries tend to view high quality childcare as outside of the government's responsibilities and presume that it should be provided by the market (Gauthier 1996). Thus, publicly funded childcare is provided through means tested benefits for the poor or through preprimary education. The majority of children in publicly funded childcare in these countries are in preschools or kindergarten as part of preprimary education (Gauthier 1996). Childcare is also provided for the some of the poor through means-tested benefits; however, the impact of

these benefits in generally uneven and contradictory and they have seen increasingly stiff eligibility requirements in recent years (Michel and Mahon 2002). As a result, while these countries tend to have high rates of women's labor force participation, this participation is largely facilitated through private childcare providers of mixed quality, due to the low wages paid to private caregivers. In sum, while publicly funded childcare should theoretically reduce employment inequality between men and women by relieving mothers from the demands of full-time childcare, this effect is most likely highly conditioned on the institutional setting.

Childcare Leaves: A relatively recent development in family policy is the expansion of childcare leaves. Largely unknown until the late 1970's, childcare leaves are long, low paid or unpaid leaves that are typically taken by the mother after the parental/maternity leave has run out (Morgan and Zippel 2003). As can be seen in table 3, many countries with these leaves have adopted some version of these policies. Childcare leaves were generally institutionalized by center-right governments as a way to promote parental choice in the care of children, fight unemployment by shrinking the labor force, and contain spending on childcare (Leira 2002; Morgan and Zippel 2003). These policies have been hotly contested and criticized, both among scholars and within the countries that have instituted them. Because these policies are almost always taken by the mother, the long and low-paid (or unpaid) nature of these leaves obviously raises concerns about gender equality

Table 3: Information on Childcare Leaves for 14 Welfare States in 2005

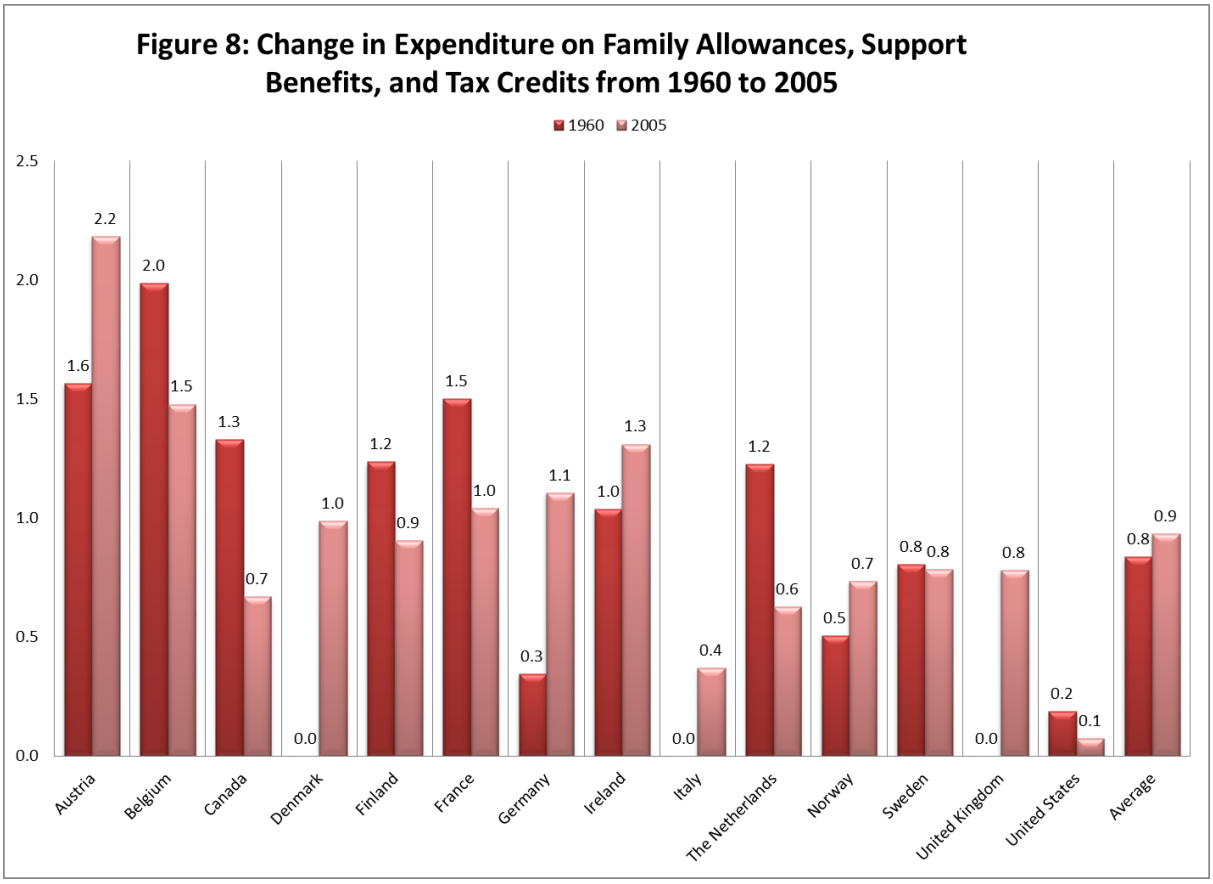
Country	Duration (Weeks)	Paid
Austria	104	Paid
Sweden	78	Unpaid
Norway	52	Unpaid
Denmark	32	Paid
The Netherlands	26	Unpaid
France	24	Unpaid
Finland	18.5	Paid
Belgium	12	Paid
Canada	11	Paid
Germany	0	N.A.
Ireland	0	N.A.
Italy	0	N.A.
United Kingdom	0	N.A.
United States	0	N.A.
Grand Mean	26	
Data Source: See Appendix 1		

in the caring and market roles, particularly the potential negative effects on mothers' labor market attainments in the long-term (Leira 2002; Morgan and Zippel 2003).

Moreover, because of the low pay associated with these policies, women in lower class positions are much more likely to take these leaves, raising concerns about class inequality (Mahon 2002). Finally, while these benefits were instituted to promote parental choice in childcare, they do not represent a choice at all without universal access to publicly funded childcare, as is often the case in countries that instituted these polices. Rather, they institutionalize the traditional division of labor within the household (Gauthier 1996; Leira 2002).

Family Allowances, Family Support Benefits, and Child Care Tax Credits: Family allowances, support benefits, and tax credits are tax or cash incentives that are meant to decrease the costs of having and raising children. In particular, family allowances decrease the taxable income of the family or decrease the amount of tax levied against the family, with increasing allowances according to family size (Wennemo 1994). Support benefits are usually cash benefits paid directly to fathers or mothers. Finally, childcare tax credits are meant to offset the cost of private childcare by decreasing the amount of tax levied against the family according to how much the family spent on childcare (Wennemo 1994). Childcare tax credits are more prevalent in countries with low levels of publicly funded childcare.

Changes in public expenditure on family allowances, support benefits, and tax credits as a percentage of GDP are presented in Figure 8. Many countries spend more on these allowances and benefits than they do on parental leaves and childcare combined (with the exception of the



social democratic countries). However, expenditure on these policies has tended to decline over the period, while expenditure on parental leaves and childcare has tended to increase. In many countries, coverage is generally extended to those in the labor force, and benefits are largely directed to men or are only directed to one segment of the population, such as the poor or families with high incomes. Theoretically, these policies should have a negligible or negative effect on women's employment outcomes. I include them in my analysis, however, because they play a prominent role in many countries' family policy schemes.

Impact of Family Policies on Women's Employment Inequality

As described in the previous section, there is good reason to believe that family policies are associated with women's employment inequality in pay and jobs. In this section, I review the

literature that empirically assesses this hypothesized connection. This question has taken on increasing importance, with the reliance of modern welfare states on high levels of women's employment. The bulk of work done in this area has examined the link between family policies and female labor force participation (Winegarden and Bracy 1995; Ruhm and Teague 1995; Ruhm 1996; Gornick 1997; Gornick, Meyers, and Ross 1998; Korpi 2000; Kreyenfeld and Hank 2000; Ronsen and Sundstrom 2000; Stier, Lewin-Epstein and Braun 2001; Jauomotte 2002; Ferrarini 2003; Stryker and Eliason 2003; Petit and Hook 2005; Eliason, Stryker, and Tranby 2008; Hicks and Kenworthy 2008), so there is a little evidence regarding family policies and the male-female wage gap or occupational gender segregation.

In two related studies analyzing LIS (Luxembourg Income Study) data using simple comparisons and linear regressions controlling for age, Misra, Budig, and Moller (2007) and Misra, Moller, and Budig (2007) find that policies that help women balance care and work responsibilities by explicitly defamilizing care work are positively related to hourly wages and negatively associated with poverty rates, especially among mothers. On the other hand, policies that explicitly familize care work by rewarding it are negatively associated with hourly wages, especially among mothers. Finally, countries that have limited family policies are between the other two types of countries in terms of hourly wages. Both of the latter family policy regimes are associated with fairly high poverty rates, especially among mothers (Misra, Moller, and Budig 2007; Misra, Budig, and Moller 2007).

In more recent research, Budig, Misra, and Boeckmann (2009) analyze one wave of LIS data and family policy information collected by the authors. Impressively, for this literature, they use linear regressions, logistic regressions, and two-stage Heckman sample selection correction estimation procedures while controlling for labor market factors, human capital factors,

motherhood, and cultural support for the employment of mothers. They find that public care for younger children (infants and toddlers) unambiguously reduces the motherhood wage penalty, while parental leaves have a curvilinear affect with short or very long leaves increasing the wage penalty (Budig, Misra, and Boeckmann 2009).

In one of the only other available studies to focus on the wage gap, and the only study to focus on occupational gender segregation, Mandel and Semyonov (2005; 2006), using LIS data for 20 countries, find that generous family policies (specifically, longer maternity leaves and more generous public childcare coverage), reduce gender earnings disparities. However, they also find that generous family policies increase completely offsets the reduction in gender earnings disparities caused by family policies. In other words, generous family policies have the unintended consequence of a more gender segregated labor market, which has detrimental implications for earnings inequality between men and women. However, they do not examine the processes through which this effect occurs (Mandel and Semyonov 2005; 2006).

In short, we know relatively little about how family policies influence the hours of women's work or women's employment inequality in terms of wages or occupational gender segregation. In other words, while we know that family policies influence the rate at which women work, more research needs to be done on how family policies impact a variety of important outcomes, including, but not limited to, the gender wage gap, and occupational gender segregation.

I contribute to this literature by examining the effects of family policies and public employment on women's employment inequality from 1960-2008 using methods that can more accurately account for the non-independence of observations while accounting for additional welfare state and labor market processes in order to determine if welfare state policies and

practices continue to have the expected impact on women's labor force participation when larger economic and labor market forces are accounted for. I also examine the effects of indexes of parental leaves, public childcare for ages 0-2, public childcare for ages 3 to school age, family allowances, benefits, and tax credits, and public employment. Finally and perhaps most importantly, I contribute by extending my analyses to measures of the male-female wage gap and occupational gender segregation, which has not been studied using aggregate level data. I also examine the effect of leave length and pay, childcare coverage and expenditure, childcare leaves, and family allowances and tax credits separately on women's employment inequality.

I expect to find that more generous parental leaves and childcare for children of all ages should reduce the male-female wage gap by allowing women to maintain attachment to work even with children, a period which would generally see reduced rates of female labor force participation. One study would lead me to expect that more generous parental leaves and childcare (Mandel and Semyonov 2005; 2006) will lead to increased occupational gender segregation, however, that study was done using LIS data at one point in time, so these expectations are tentative.

Data and Variables

Data: The data used throughout this paper is an aggregate level country-year dataset where each "case" in the dataset contains information for one country and one year. This type of dataset is generally called pooled time series data. Countries in the data set include Austria, Belgium, Canada, Denmark, Finland, France, (West) Germany, Ireland, Italy, the Netherlands, Norway, Sweden, Britain and the United States, with information on each year from 1960 to

2005 for the family policy variables and to 2008 for the outcomes and other independent variables.

The data was collected in two waves: the family policy measures and labor force and population information was collected by me, in conjunction with Robin Stryker and Scott Eliason, in 2003-4; while additional information on the labor market and other aspects of the welfare state was collected by the author in 2007-10. This second wave of data collection was motivated by developments in the literature and critical feedback on earlier versions of the analysis. The original goal of data collection was to represent the universe of advanced capitalist democracies. However, due to a lack of available, comparable data, Japan, Australia, and New Zealand were dropped from the analysis in order to maintain data completeness over the full period.

In total, I gathered information from approximately 80 different data sources, including OECD documents and datasets, ILO documents and datasets, UN documents and datasets, country monographs, comparative studies and data sets collected by other researchers. Sources of data are presented in Appendix 1. Whenever possible, I used multiple sources for each measure, so that I could verify consistency among sources and locate the source of any inconsistency and create the most complete and accurate measurement possible for all variables. Though I do contend with some issues of missing data for some of these measures, these careful data collection procedures have provided me with a complete and accurate comparative data set.

Dependent Variables: In this paper, I consider direct measures of women's employment inequality. One such measure is the male-female wage gap. Following ILO and UNECE definitions, I define and calculate the male-female wage gap as the difference between average weekly earnings of male employees and female employees, expressed as a percentage of average

weekly earnings for male employees. Average weekly earnings refer to gross weekly wages. This measure of the wage gap may conflate differences in work hours with the wage gap. In order to adjust for this tendency, I include the proportion of women in part-time employment as an independent variable in all analyses using the wage gap. A more preferable measure would examine the wage gap among full-time workers. Unfortunately, this measure is only available for two cross-sections of the dataset. Data on the male-female wage gap was obtained from the ILO Laborsta Database (2009) and the OECD Earnings Databases (2009), and double-checked with information from the UNECE Statistical Division Database (2009).

Another measure of women's employment inequality is occupational gender segregation, or the extent to which men and women hold different jobs. There are three standard summary indices of occupational gender segregation in use in the literature: D, D_s, and A[6]. See Appendix 4 for details on how these measures are calculated. In all analysis, I use the Size Standardized Index of Dissimilarity or D_s because it is easily interpretable, available for 84 country-years (see the discussion about limited data availability below), and is not dependent on the occupational distribution. I would have preferred to use A because it is margin-free, better captures prevailing conceptions of segregation, and is more comparable across countries and times; however, it is only available for 48 of the country-years in my sample. I do use A for robustness checking purposes in subsequent analyses.

The data used to calculate these summary indices comes from the ILO SEGREGAT database and the recent European Commission report on gender segregation in the EU and North

[6] Charles and Grusky (2004) criticize the use of summary indices because there use assumes a historically and cross-nationally invariant profile, while existing evidence suggests substantial cross-national and over time variability in the pattern and sex-typing of occupational gender segregation. Instead, they suggest that all index-based analysis be supplemented with explicit modeling of segregation arrays, under a modeling framework they suggest, because doing so uncovers the structure of these arrays in more revealing ways than conventional indices permit. I continue to use summary indices in order to maintain comparability with previous studies and because I am interested in the impact of family policies and other variables on occupational gender segregation across countries, over time, and not the pattern of occupational gender segregation within each country at a specific time point.

America (2009) and double-checked (where possible) with Charles and Grusky (2004). It is very important to note that the data on which these indices were calculated are not strictly comparable across countries or points in time, given differences regarding the sources of data collection, worker coverage, and national classifications used. While I would have preferred harmonized time series and cross-national occupational data, such an undertaking is simply not feasible, given the difficulties Charles and Grusky (2004:33-34) had in creating a harmonized cross-national dataset for just 10 countries at one point in time. This approach of using variable classificatory schemes has been used in previous research (e.g., Hakim 1994, Anker 1998). I choose this approach over the alternative method of using highly aggregated occupational data schemes (e.g., Charles 1992) because there is substantial variability even across highly aggregated schemes over time, and because broader occupational gender integration can mask segregation at lower levels (Bielby and Baron 1985; Bielby and Baron 1986; Reskin 1993).

Unfortunately, I also deal with large amounts of missing data with these measures because they were only collected approximately every decade from 1970 to the mid 1990's, and then every two to three years after that. As such, I only have 84 country-years of data for D and D_s and 48 country-years for data for A[7]. It is important to note that given the restricted sample size on these models and issues of comparability in calculating occupational gender segregation, results on this dependent variable should be taken as tentative until better data on occupational gender segregation is available.

Labor Market and Welfare State Variables: See Table 4 for information on the labor market and welfare state variables that make up the base model.

[7] There is more limited information on A because the European Commission report only calculated D and D_s and did not include enough raw data to calculate A.

Table 4: Description of Variables Measuring Labor Market and Welfare State Processes

Variable Name	Description	Source	N	Mean	S.D.	Min.	Max.
Employment in Service Rate	Employment in Services, as a % of the Total Working Age Population (ages 15-65).	OECD Annual Labour Force Statistics Summary Tables 2009	686	39.34	9.65	20.5	61.6
Female Average Years of Education	Average Years of Education Completed by Women Ages 25	Barro and Lee 2000 and Author Calculations from UNESCO Various Years	686	8.30	1.87	4.2	13.7
Unemployment Rate	Percentage of labor force that is not employed	Author Calculations from OECD Annual Labour Force Statistics Summary Tables 2009	686	6.20	4.07	-2.9	22.6
Real GDP Per Capita	Real GDP Per Capita in 2005 International Dollars (Laspeyre	Penn World Table Version 6.3	686	21.89	7.90	6.6	48.6
Cum. Left Cabinent Incumbency	Cumulative Percentage of Cabinet Seats Held by Left Parties from 1946 to Year of Observation	Huber Et. Al. Comparative Welfare States Database 2000; Author Calculations from EJPR for Various Years	686	13.44	11.78	0.0	49.9
Corporatism	Hicks-Kenworthy Composite Corporatism Measure. See Text for More Details on this Measure.	Kenworthy 2003 and Hicks and Kenworthy 1998; Author Calculations from ICTWSS 2008	686	5.49	3.41	0.1	9.9
Left Cabinent and Corporatism Scale	Left Cabinent and Corporatism Scale. Created from a Principal Components Factor Analysis.	See Above	686	0.00	1.00	-1.5	2.1
Cum. Females in Parliament	Cumulative Percentage of Seats in Parliament Held by Women from 1945 to Year of Observation	Huber Et. Al. Comparative Welfare States Database 2000; IPU Statistical Arhive on Women in Parliaments	686	8.18	5.41	0.9	24.7
Tax Type	Individual Taxation (1) vs. Joint Taxation (0)	Dingeldey 2001; OECD Taxation Dataset 2009	686	50.15%	--	--	--
Public Sector Employment	Civilian Government Employment, as a % of the Total Working Age Population (ages 15-65).	OECD Economic Outlook 2009 and Military Balance 1960-1999	686	11.44	5.39	3.7	25.9

Family Policy Variables: The most data collection effort, as described above, went into collecting and checking the family policy variables. The sources of data are too many to list here, but are all described in Appendix 1. These variables are described in Table 5. The dataset contains detailed information on social expenditure for paid leaves, publicly funded childcare, and family allowances and support benefits. The dataset also contains information on four types of leaves[8]: maternity leaves, which are only available to mothers' immediately before and after they give birth; extended leaves, which can only be taken immediately after the expiration of the maternity leave; parental leaves, which are extended leaves available to both parents; and childcare leaves, which are long, low paid, or unpaid leaves that are typically taken by the mother after the maternity and/or parental leave has run out. I also include information about leave pay, including the wage replacement rate of the maternity leave, which is the percentage of the women's earnings replaced with payments from the government, an indicator if the maternity leave has a one-time lump sum or flat rate payment to the mother, and an indicator if childcare leave is paid or unpaid. The dataset also has information about public childcare, including an indicator variable if the government guarantees a slot in publicly funded childcare for children ages 0-2 and 3-School Age, and the percentage of children ages 0-2 and 3-School Age who are actually in publicly funded childcare.[9] Finally, the dataset contains a variable that indicates the presence of childcare tax credits, which are meant to offset the cost of private childcare.

I will investigate the effects of many of these variables on women's employment outcomes individually, focusing in particular on the effects of maternity, parental, and childcare leaves, the length of the leave, the wage replacement rate or leave pay, coverage and guarantees

[8] This formulation is broadly consistent with how other scholars have defined these leaves (Gauthier 1996; Gornick, Meyers, and Ross 1998). However, some scholars think of extended and childcare leaves as the same thing, while others combine extended and parental leaves.

[9] I use this age distinction because existing data and research tends to use this age distinction.

Table 5: Description of All Family Policy Variables in Dataset

Variable Name	Description	N	Mean	S.D.	Min.	Max.
Job Protected Leave	Legislated Job Protection for Maternity and Parental Leaves (1=Yes)	644	90.06%	--	--	--
Public Expenditure on Leaves	Public Expenditure for Paid Maternity/Parental Leave as a % of GDP	601	0.24	0.25	0	1.4
Maternity Leave Length	Length of Maternity Leave in Weeks	644	17.03	10.59	0	52.0
Wage Replacement Rate	Wage Replacement Rate of Maternity Leave, as a % of wages	644	65.69	34.48	0	100.0
Flat-Rate Leave Pay	One-Time/Lump-sum or Flat Rate Payment for Maternity Leave (1=Yes)	644	53.42%	--	--	--
Coverage of Maternity Leave	% of Employed Women Covered by Maternity Leave Laws	644	87.73	32.83	0	100.0
Extended Leave Length	Length of Extended/Parental Leave in Weeks	644	22.27	36.44	0	156.0
Extended Leave for Fathers	Fathers are Eligible to Take Some of All of Extended Leave (1=Yes)	644	41.30%	--	--	--
Child Care Leave Length	Length of Child Care Leave in Weeks	644	14.21	24.34	0	104.0
Child Care Leave Pay	Child Care Leaves are Paid (1=Yes)	644	16.61%	0.37	0	1.0
Guaranteed Child Care for Ages 0-2	Government Guarantees Child Care Slots for All Children Ages 0-2 (1=Yes)	494	46.96%	--	--	--
Guaranteed Child Care for Ages 3-School Age	Government Guarantees Child Care Slots for All Children Ages 3-School Age (1=Yes)	494	63.77%	--	--	--
Coverage of Child Care for Ages 0-2	Percentage of Children Ages 0-2 in Publicly Funded Child Care	577	12.58	15.88	0	67.3
Coverage of Child Care for Ages 3-School Age	Percentage of Children Ages 3-School Age in Publicly Funded Child Care	610	52.89	28.13	0	100.0
Public Expenditure on Child Care	Public Expenditure for Child Care as a % of GDP	425	0.49	0.55	0	2.1
Child Care Tax Relief	Tax Relief for Child Care Expenses (1=Yes)	644	38.51%	--	--	--
Public Expenditure on Family Allowances and Support Benefits	Public Expenditure for Family Allowances and Support Benefits for Children as a % of GDP	629	0.95	0.66	0	2.9

Data Sources: See Appendix 1

Table 6: Description of Family Policy Indexes

Variable Name	Description	Missing Data	Alpha	N	Mean	S.D.	Min.	Max.
Maternity Leave Index	Additive Scale of Maternity Leave Length, Wage Replacement Rate, Coverage, and Public Exp. on Paid Maternity Leave. All variables are scaled to be in the range [0,1].	None	0.775	644	0.53	0.22	0.0	1.0
Parental Leave Index	Additive Scale of Maternity Leave Length, Wage Replacement Rate, Parental Leave Length (Extended Leave if Fathers is Eligible) Coverage, and Public Exp. on Paid Maternity Leave. All variables are scaled to be in the range [0,1].	None	0.721	644	0.47	0.21	0.0	0.9
Childcare Ages 0-2 Index	Additive Scale of Guaranteed and Coverage of Child Care for Children Ages 0-2 and Public Expenditure on Child Care. All variables are scaled to be in the range [0,1].	Ire: 60-79; Nor: 64-79, 81-84, 86-87.	0.749	602	0.32	0.33	0.0	1.2
Childcare Ages 3-School Age Index	Additive Scale of Guaranteed and Coverage of Child Care for Children Ages 3-School Age and Public Expenditure on Child Care. All variables are scaled to be in the range [0,1].	Nor: 64-79, 81-84, 86-87.	0.767	622	0.53	0.35	0.0	1.3
Family Allowances, Support Benefits, and Tax Credits Index	Additive Scale of Child Care Tax Relief and Public Expenditure on Family Allowances and Support Benefits. All variables are scaled to be in the range [0,1].	Aus: 86-89;Can: 60, Fra: 60-62; Nor 86-87.	0.106	629	0.36	0.26	0.0	0.9

Country Codes: Aus-Austria, Bel-Belgium, Can-Canada, Den-Denmark, Fin-Finland, Fra-France, Frg-West Germany, Ire-Ireland, Ita-Italy, Net-The Netherlands, Nor-Norway, Swe-Sweden, UK-The United Kingdom, US-The United States

Data Sources: See Appendix 1

of childcare for children of various ages, whether a childcare tax credit is available, and expenditure on various family policies. However, in some analyses, family policies are measured using indices, either an overall generosity index with two components, or four separate indices for parental leave, childcare ages 0-2, child ages 3-school age, and family allowances, support benefits, and tax credits (Table 6). I use these indexes to capture the way these policies work together as a package.

The parental leave index is an additive scale of the length of maternity leave as a percentage of a calendar year, the length of parental leave as a percentage of a calendar year, the wage replacement rate, the percentage of women covered under the maternity leave law, and the public expenditure on parental leave as percentage of GDP[10]. All variables are scaled to be in the range [0,1] so no variable outweighs the others. The alpha reliability coefficient for this scale is .721, and I utilized pairwise deletion in calculating the index in order to maximize the number of cases used.

The childcare index for children ages 0 to 2 is an additive scale of the percentage of children ages 0 to 2 in publicly funded childcare, the existence of legislation guaranteeing access to public childcare for all children ages 0 to 2, and the public expenditure on childcare as a percentage of GDP. Similarly, the childcare index for children ages 3 to school age is an additive scale of the percentage of children ages 3 to school age in publicly funded childcare, the existence of legislation guaranteeing access to public childcare for all children ages 3 to school age, and the public expenditure on childcare as a percentage of GDP. All variables are scaled to be in the range [0,1] so no variable outweighs the others. The alpha reliability coefficient is .749

[10] I also have created an index with maternity leave alone (i.e. not including parental leave). However, I use the parental leave index because the two indices give similar results and the two measures are highly correlated at .938.

for the 0 to 2 index and .767 for the 3 to school age index, and I utilized pairwise deletion in calculating the index in order to maximize the number of cases used.

The family allowances, support benefits, and tax credits index is an additive scale of the public expenditure on family allowances and support benefits and whether the country has a childcare tax credit available. The items of this scale are not highly correlated and have a low alpha reliability coefficient. However, they are part of the family policy "package" in many countries and have been scaled together in previous research, so I choose to do so here as well (Gornick, Meyers, and Ross 1998; Stier, Lewin-Epstein, and Braun 2001).

Methods

In all analysis I use pooled cross-section time-series data. I use this type of data because it increases the number of observations and the degrees of freedom, makes it possible to control for exogenous shocks common to all countries, reduces potential omitted variable bias, and allows for the analysis of country and time effects at the same time. However, there are a number of drawbacks to using this type of data, all related to the fact that observations are not independent. In particular, errors tend to be serially correlated, heteroskedastic, correlated across countries at a single point in time due to common exogenous shocks, and non-spherical (serially correlated and heteroskedastic at the same time).

Researchers have used a number of ways of dealing with these drawbacks, mostly related to correcting the error structure in ordinary least squares (OLS) regression. First, the "standard" way has been to use panel corrected standard errors as proposed by Beck and Katz (1995) to account for heteroskedasticity, an autoregressive one (AR1) error correction or a lagged dependent variable to account for autocorrelation, and fixed-effects models to account for the

possibility of non-spherical errors and exogeneous shocks. Second, in some sociological literature, a clustered robust estimator has been used to adjust the standard errors for nonindependence of observations across countries and, therefore, account for autocorrelation in all kinds of fixed effects regressions (Hicks and Kenworthy 2008; Moller at el. 2003). Third, Kittel and Winner (2005) propose a model in first differences for both dependent and independent variables, in other words, a change model, in order to deal with autocorrelation.

However, all of these solutions to the problem of non-independence of errors bring with them additional problems, resulting in biased or inconsistent estimates, or are otherwise inappropriate in the case of this paper. Specifically, fixed effects regressions are criticized for absorbing cross-sectional variance in the level of independent variables across units, especially for partly or completely time invariant variables (Huber and Stephens 2001; Beck 2001). The use of the autoregressive one (AR1) error correction may be appropriate if the error structure follows such a process. Unfortunately, because the covariance matrix of the errors is not known, it is impossible to know in ordinary least squares regressions if the error structure follows that process or not (Kittel and Winner 2005). The use of a lagged dependent variable to account for serial correlation is likely to bias estimates upward, inappropriately captures large parts of the trend in the dependent variable, and conceptually turns the analysis into one of annual change, as opposed to levels (Huber and Stephens 2001, Plumper, Troeger, and Manow 2005)[11]. The use of the clustered robust estimator to adjust standard errors assumes a large number of countries (generally, more than 50) and requires errors to be non-heteroskedastic between countries; neither assumption holds in my data or most data of this type. Finally, using models in first

[11] The correlations between the dependent variable and lagged dependent variable tend to be extremely high. However, Huber and Stephens (2001) argue that this high correlation is the result of both variables sharing the same underlying causes that are better described by the use of explanatory independent variables. Thus, large portions of the correlation between a dependent variable and a lagged dependent variable are spurious.

differences changes the interpretation of the estimation results, focusing only on short-term changes of the dependent and independent variables, as opposed to the level of these variables. This is inappropriate in my case because the theory, like many welfare state theories, suggests that the level, or relative generosity of family policies, is associated with women's employment outcomes[12].

To avoid the problems associated with trying to correct OLS regressions for use with cross-sectional time-series data, the majority of the statistical analysis is done using linear mixed models. These models are also sometimes called mixed models, mixed-effects models, or random-effects models. Linear mixed models are superior to OLS regression techniques for this analysis for a number of different reasons. First, properly specified, linear mixed models do not assume that error terms are independent and, in fact, were explicitly designed for use in such a situation. Second, linear mixed models have great flexibility in dealing with cross-country heterogeneity, through the use of random intercepts and random coefficients. The use of random intercepts and coefficients yields more efficient estimates than fixed effect regressions and associated interaction terms by assuming that the coefficients come from a random sample with a roughly normal distribution and a mean of 0 (Verbeke and Molenbergs 2000). Third, linear mixed models do not make strong assumptions about serial correlation in the error structure. Rather, they allow for the specification of different kinds of serial correlation and, through the use of information criteria, allow the specification of the proper serial correlation structure.

In general, a linear mixed model can be expressed in the following matrix form (Laird and Ware 1982, Verbeke and Molenbergs 2000):

[12] Moreover, an analysis of short-term change greatly exaggerates any measurement error, ignores the cumulative effect of variables or policies (also called the maturation effect), and is not generally comparable with previous analyses (Huber and Stephens 2001). This is not to say that change models are always inappropriate in welfare state analysis. In fact, part of my future plans for analyzing this data includes the use of change models.

$$\begin{cases} Y_i = X_i\beta + Z_i b_i + \varepsilon_i \\ b_i \sim N(0, D), \\ \varepsilon_i \sim N(0, \Sigma_i), \\ b_1, \ldots, b_n, \varepsilon_1, \ldots, \varepsilon_N \ \textit{independent} \end{cases} \tag{4}$$

where Y_i is the n_i-dimensional response vector for subject $i, 1 \le i \le N$. X_i and Z_i are $(n_i \times p)$ and $(n_i \times q)$ dimensional matrices of known covariates. β is a p-dimensional vector containing the fixed effects, where the regression parameters are the same for all country-years. b_i is the q-dimensional vector containing the random effects, where the regression parameters are country-year specific. ε_i is an n_i-dimensional vector of the error or residual components. D is a $(q \times q)$ dimensional covariance matrix for the random effects. In longitudinal data analysis, the random effects covariance matrix is often assumed to have no specific form, although many structures are available (Verbeke and Molenbergs 2000:98).

Σ_i is a $(n_i \times n_i)$ dimensional covariance matrix for the error or residual components. The covariance structure for the residual components is specified by the researcher and can range from the simple (AR1) error correction to a more complicated decomposition of the residual components. In this decomposition, the error component, ε_i, is assumed to have a constant variance and is decomposed as $\varepsilon_i = \varepsilon_{(1)i} + \varepsilon_{(2)i}$ in which $\varepsilon_{(1)i}$ is a component of measurement error and $\varepsilon_{(2)i}$ is a component of serial correlation (Diggle, Liang, and Zeger 1994; (Verbeke and Molenbergs 2000). Common correlation functions used to estimate the $\varepsilon_{(2)i}$ serial correlation component include the exponential and the Gaussian functions. Finally, it should be noted that the term independent in the last line of the equation means that the random effect and residual components are independent from each other.

In this analysis, I build a series of linear mixed models using the mail-female wage gap and occupational gender segregation as the dependent variables, the labor market and welfare state processes described above as "control" variables, and the family policy variables and indexes described above as the independent variables of interest. There are three issues related to the proper specification of the independent variables that I describe my solution too before detailing the model building process. These are issues related to the proper specification of the lag structure, multicollinearity, and the presence of relevant interaction terms.

I make use of the time-series nature of the dataset to lag the independent variables in various ways. Specifically, I lag all of the labor market variables and welfare state variables by one year, and I used various lags on the family policy variables, depending on the outcome. Beginning with the labor market and welfare state variables, it is necessary to lag the employment in services and public sector employment variables because these variables have components of the outcomes in them, specifically female labor force participation rates and various measures of part-time employment. The best approach to escaping this endogeneity trap in my data and models is to use a one-year lagged version of employment in services and public sector employment. Moreover, in order to account for the portion of the lagged effect due to the relationship of the lagged independent and dependent variables that is resident in the serial correlation structure, it is necessary to include a one-year lagged version of female share of the labor force.

It is less obviously necessary to include lagged versions of the balance of the labor force and welfare state variables; however, I decided to include one-year lagged versions of all these variables for a number of different reasons. The variables measuring unemployment rate and, to a lesser extent, real GDP per capita contain indirect and weak versions of the endogeneity trap

described above, so it is most sensible to include them as one-year lags. The balance of the independent variables (women's educational attainment, left cabinet incumbency, corporatism, women in parliament, and tax tape) are included because they are hypothesized to directly or indirectly cause changes in women's employment outcomes. While not certain, it is easier to distinguish causal effects, and the direction of those causal effects, from associations by exploiting lagged structures to ensure that the hypothesized cause is antecedent to the effect. Therefore, I decided to include one-year lagged versions of all of these variables in the analysis.

The proper lag structure for the family policy variables is not obvious from the extant literature or in thinking about the policy structure. There is little agreement in the literature regarding the most appropriate lag structure for various types of family policies, although there is some consensus that there should be a lagged effect of these policies. For example, Petit and Hooks (2005) and well as Mandel and Semyonov (2005) use one-year lagged versions of their family policy variables. However, Budig, Misra, and Boeckmann, in a series of recent working papers (Misra, Budig, and Boeckmann 2010; Budig, Misra, and Boeckmann 2010), use a two-year lag, but argue that the true lag is probably longer. Moreover, it makes little sense to assume that the lag structure is the same for all types of family policies or for all outcomes. On one hand, because childcare allows women to stay in the labor force while ensuring care for children, a contemporaneous effect of childcare on employment rates, hours, and wages seems the most obvious. On the other hand, leaves allow women to temporarily exit the labor force to care for infants while maintaining a reasonably high level of wages in many countries, so a lagged effect of leaves on employment rates and hours is more likely, while either a lagged or contemporaneous effect could be present for wages. Finally, to my knowledge, there has never

been an investigation of the proper lag structure for family policies on women's employment outcomes using comparative time-series data.

In Appendix 2, I explore various lag structures out to a five year lag for each of my employment outcomes using the family policy indexes described earlier. As in the model building process described below, I use information criteria to determine the best fitting model to the data, with smaller information criteria scores indicating a better fitting model to the data[13]. I find that the best-fitting lags vary by outcome, rather than family policy. I include a two-year lag for gender segregation and for the the male-female wage gap.

Because multicollinearity within variables over time and between independent variables is likely in pooled cross-sectional time series analysis using level data, as opposed to change data, and because linear mixed models have been shown to produce biased estimates of the variance components and standard deviations at high levels of multicollinearity (Huber and Stephens 2001, Shieh and Fouladi 2003), I detail the multiple strategies used for dealing with multicollinearity here.

Several variables are highly correlated in my data set, so care is needed in dealing with these issues. In particular, employment in services is tightly correlated with women's educational attainment, however, the direction and significance of the main effect of each variables does not change substantially when one or the other is excluded from the models (except in some cases where employment in services mediates that educational attainment effect, which makes theoretical sense). Therefore, both continue to be included in all models because both variables have been shown in previous research to influence women's employment outcomes. Additionally, time and real GDP (which goes up consistently over time) are highly

[13] I use the Akaike Information Criteria (AIC) and the Bayesian Information Criteria (BIC). The AIC and BIC are the most commonly used information criteria (Verbeke and Molenbergs 2000). The various information criteria yield similar results across models, indicating robust results.

correlated with many measures, so I estimated models with and without time in order to assess potential bias caused by multicollinearity. This analysis again reveals that the main effect of each variable rarely changes substantially when one or the other is excluded from the models and the main effects generally "make sense" given how each should operate. Therefore, I leave both real GDP and time in all models.

Because the family policy indexes are highly correlated and inclusion in the same model produces results very different from entering them in separate models, I enter them in separate models. Moreover, many of family policy variables that make up the indices are highly correlated. Therefore, I enter many of them in separate models. In particular, because the length of maternity and childcare leaves is highly correlated, I enter them in separate models as well. While parental leave length is not highly correlated with either maternity or childcare leave length, I also enter this in a separate model for consistency. An alternative strategy would be to create a scale by adding the length of leaves together. This strategy might make sense if there was good evidence that women take all the leave that is available to them, indicating that the total leave length is important, whereas the length of individual leaves is not. However, the very limited evidence that we do have suggests that take-up rates for maternity leaves are extremely high, somewhat lower for most parental leaves, and even lower for childcare leaves (Moss and Devon 1999). In addition, the leaves have been available for different lengths of time, with maternity leaves available the longest and parental and childcare leaves being newer developments, and the characteristics of the leaves are different across types of leave. In another set of models, I enter childcare guarantees and childcare coverage in separate models because these variables are highly correlated. Finally, I enter public expenditure on leaves, childcare, and family allowances in separate models because these variables tend to be highly correlated.

I consider two interaction terms in these models. As described previously, employment in services and public sector employment are highly correlated and mean different things in different sets of countries[14]. In many models, I included an interaction term between the liberal regime type and employment in services and an interaction term between the social democratic regime type and public sector employment. Many of these interaction terms tend to drop out of significance in the late stages of model building, often because random intercepts that account for country differences in the slope of the variables are included in the model.

The process of model building in linear mixed models is complicated by the fact that both the mean structure and the covariance structure need to be specified, but these structures are not independent of each other (Verbeke and Molenbergs 2000). Thus, I follow the process of model building recommended by Verbeke and Molenbergs (2000). In each step and across steps, the best fitting model is determined by the use of information criteria and (in the case of nested models) chi-square tests, with smaller information criteria scores indicating a better fitting model to the data.

The first step in this process is to select a preliminary mean structure, or fixed portion of the model. This is the first step because the covariance structure models all variability in the data not explained by the fixed effects. This process begins by modeling the functional relation over time and then including relevant regressors and interactions (Verbeke and Molenbergs 2000). By modeling the functional relation over time, I am simply modeling whether there is a time trend for that dependent variable and what "shape" that time trend approximates. This step also

[14] The preferred solution would be to include employment in services in the private sector, as opposed to employment in services across all sectors. However, a close investigation of the OECD version of this variable reveals substantial measurement error across countries and over time. This measurement error is so large that in many countries the size of the private service sector is reported to be larger than the whole service sector or smaller than the size of the entire public employment sector subtracted from the service sector. Therefore, I decided against using this measure in any analyses.

included the investigation of various interaction terms, lag structures, and strategies for dealing with multicollinearity described above. Because there are very few cases in the models estimating occupational gender segregation, I also ran models separately estimating each variable on the occupational gender segregation index in this step, in order to ensure that the findings from the multivariate models are robust.

The second step is to select a preliminary random effects structure. The covariates included in the random effects structure must also have already been included as covariates in the fixed portion and, as in OLS, any interaction term must include all lower interaction terms in addition to random intercepts (Verbeke and Molenbergs 2000). As noted above, the covariance matrix of the random effects portion is often assumed to have no specific form in longitudinal data analysis (Diggle, Liang, and Zeger 1994). However, because I want to at least estimate random effects for all variables in the model, such an assumption is unrealistic, given that assuming an unstructured covariance matrix necessitates estimating $p(p+1)/2$ parameters, where p is the number of random effects. In other words, in a model with 10 random effects and an unstructured covariance structure, in which all of the random effects are allowed to covary with each other, 55 variances and covariances would be estimated on, at most, 686 points of data. Such a model will not converge, or will not properly estimate standard errors for the random effects in either Stata 11 or SAS 9.2. Therefore, I estimate a variance components matrix (also called independence model) in which a distinct variance for each random effect is estimated and covariances of the random effects are assumed to be zero[15]. In other words, this covariance structure assumes no within-country correlation of error terms[16]. In this step, I also consider a

[15] There are other covariance structures I could consider but I choose these because they are the most commonly used in the literature and are available in both statistical packages I use to analyze the data (SAS and Stata).
[16] This is likely not a realistic assumption if I were to stop the analysis here; however, in the next step I specify the way in which errors are correlated using an error covariance structure, thus, the error variance becomes one of the

simpler covariance matrix in which all random effects are assumed to have a common variance and covariance (often called an exchangeable structure) and well as reduced complexity models.

The third step is to select a residual covariance structure, or the covariance matrix for the error component. This is usually done by fitting and comparing a series of serial correlation models using information criteria, because we are typically only interested in accounting for the type of serial correlation the exists in the data, rather than being interested in the serial correlation function *per se* (Verbeke and Molenbergs 2000). In my case, I try two simple serial correlation structures, the first order autoregressive (AR1) structure and the first order autoregressive moving average (ARMA) structure, and two more complicated structures, the exponential and Gaussian functions, which decompose the error into a serial correlation and a measurement error portion.

The fourth step involves going back and making sure that the preliminary random effects structure is needed in the model as originally specified (Verbeke and Molenbergs 2000). This often resulted in a re-specification of the random effects structure into a reduced form. When the interaction terms become non-significant, I drop them in this step in order to facilitate interpretation of the main effects of the variables, even when it results in a reduction in model fit.

I frequently include graphical representations of the impact of family policies on the outcomes. I created these graphs by holding all variables at their mean values – except the focal variable, which I varied across the values of the variable – and then graphed the resulting estimates.

---

variance components in the next step, although this assumption often entails assuming a common within-country error structure across countries.

Results

For both of my dependent variables, I first establish a "base mode" with the labor market and welfare state independent variables. I then measure the impact of the relative generosity of parental leaves, childcare for children ages 0-2 and 3-school age, and family allowances, support benefits, and tax credits using indexes. I then disaggregate these indexes into: a) leave type, length, and pay; b) childcare guarantees and coverage; and c) expenditure on family policies. I also include measures of childcare leaves. I use this strategy in order to analyze the various ways that family policies might influence women's employment inequality, in particular, overall generosity compared to generosity in specific family policy areas and the structure of the policy compared to expenditure on family policies.

The Male-Female Wage Gap: The model fit process for this dependent variable is summarized in Table 7, while the final results of the model fitting process are shown in Table 8. 59% of variation in the male-female wage gap is between countries, while 30% of the variation is across time, within countries.

For the base model, the stationary AR1 process with no random coefficients or intercepts is the best fitting model to the data. This indicates that countries differ relatively little in their average male-female wage gap or the effect of the variables in the model, once the proper serial correlation is taken into account. Looking at the fixed effects portion of the model[17], employment in services increases the male-female wage gap, such that a one percentage point increase in employment in services increases the wage gap by a tenth of a percentage point. Thus, increasing employment in services among women is a clear driver of continued employment inequality between men and women. Another driver of the male-female wage gap

[17] I include the proportion of women in part-time employment as an independent variable in this model to control for work hour differences between men and women.

Table 7: Model Building and Selection for Mixed Models Estimating Women's Employment Outcomes for Base Models

	Panel A: Male-Female Wage Gap					Panel B: Occupational Gender Segregation (Ds)				
	-2 Log Likelihood	# of Fixed Parms.	# of Residual Parms.	AIC	BIC	-2 Log Likelihood	# of Fixed Parms.	# of Residual Parms.	AIC	BIC
Preliminary Mean Structure:										
Preliminary Mean Structure	-1291.23	12	1	2608.46	2661.88	-229.12	11	1	482.23	511.40
Preliminary Random Effects Structure:										
Random Intercept	-1435.17	12	2	2896.35	2953.51	**-213.75**	**11**	**2**	**449.50**	**476.24**
Random Intercept, Random Time Coefficient, VC	-870.41	12	3	1770.83	1832.46	-214.52	11	3	457.04	491.08
Random Intercept, Coefficients, Variance Components (VC)	**-781.97**	**12**	**13**	**1613.93**	**1716.66**	-214.52	11	12	455.04	486.65
Random Intercept, Coefficients, Exchangeable Variance	-852.43	12	3	1734.86	1796.50	-215.29	11	3	452.58	479.32
Residual Covariance (Serial Correlation) Structure										
First-Order Autoregressive (AR1)	**-675.70**	**12**	**14**	**1355.40**	**1356.70**	**-214.05**	**11**	**3**	**434.10**	**436.10**
First-Order Autoregressive Moving Average (ARMA)	-674.30	12	15	1356.60	1359.10	-213.10	11	4	434.20	436.80
Temporal Gaussian with Measurement Error	-684.80	12	15	1389.60	1396.00	-214.50	11	4	435.00	437.00
Temporal Exponential with Measurement Error	-674.30	12	15	1356.70	1363.10	-214.50	11	4	435.00	437.00
Model Reduction:										
Random Intercept, Coefficients, VC, Residual	-675.70	12	14	1355.40	1356.70	--	--	--	--	--
Random Intercept, Coefficients, VC, Residual, No Interactions	--	--	--	--	--	--	--	--	--	--
Random Intercept, Random Time Coefficient, VC, Residual	-674.70	12	4	1355.30	1358.70	--	--	--	--	--
Random Intercept, VC, Residual	-675.20	12	3	1352.40	1353.70	**-214.05**	**11**	**3**	**434.10**	**436.10**
Stationary Residual Process	**-665.70**	**12**	**2**	**1350.10**	**1352.40**	-220.50	11	2	445.00	446.30

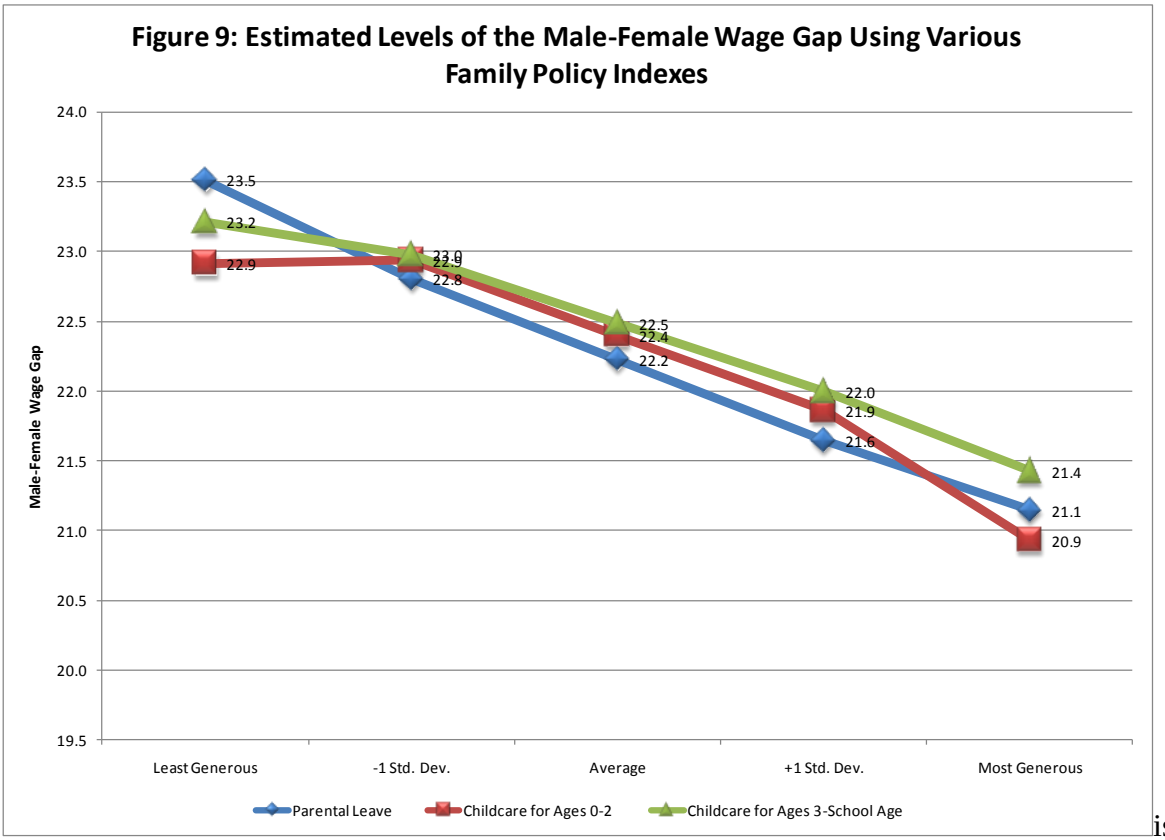
Note: Smaller values of AIC and BIC indicate a better fitting model; models in bold are the selected models at each step. The maximum likelihood (ML) estimation method is used to in the mean structure step, while the residual maximum likelihood (REML) estimation is used in the estimation of the random effects, residual covariance, and model reduction steps. Among other differences, the REML method does not use the fixed effects parameters in the calculation of the fit statistics, while the ML method does (Verbeke and Molenbergs 2000). The term interactions refers to significant interactions found in the preliminary mean structure step, except in the case of the association index, in which it refers to variables dropped in the first step.

Table 8: Mixed Model Results Estimating the Effect of Family Policy Indexes on the Male-Female Wage Gap

	Base Model		Model 2		Model 3		Model 4		Model 5	
Variable	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
Fixed Effects										
Parental Leave Index, 5 Year Lag	--	--	-2.774 **	(0.982)	--	--	--	--	--	--
Child Care Ages 0-2 Index, 5 Year Lag	--	--	--	--	-1.611 **	(0.602)	--	--	--	--
C.C. Ages 3-School Age Index, 5 Year Lag	--	--	--	--	--	--	-1.386 *	(0.716)		
Family Allowances, Benefits, Credits Index, 5 Year Lag	--	--	--	--	--	--	--	--	-0.406	(0.659)
Lagged Employment in Services	0.107 **	(0.039)	0.083 *	(0.045)	0.082 *	(0.039)	0.101 *	(0.041)	0.107 **	(0.041)
Lagged Female Average Years of School	-0.254	(0.420)	-0.263	(0.413)	-0.005	(0.441)	-0.213	(0.451)	-0.220	(0.410)
Lagged Real GDP	0.059	(0.095)	0.065	(0.099)	0.063	(0.091)	0.052	(0.099)	0.061	(0.096)
Lagged Unemployment Rate	0.045	(0.034)	0.041	(0.034)	0.029	(0.034)	0.043	(0.037)	0.043	(0.034)
Lagged Left Cab and Corp Scale	-0.686 *	(0.345)	-0.533	(0.706)	-0.534	(0.895)	-0.481	(0.865)	-0.419	(0.639)
Lagged Cumulative Females in Parliament	0.004	(0.205)	0.080	(0.222)	-0.023	(0.218)	0.065	(0.227)	-0.007	(0.205)
Lagged Individual Taxation	-0.361	(0.379)	-0.359	(0.388)	-0.127	(0.445)	-0.130	(0.435)	-0.364	(0.385)
Lagged Public Sector Employment	-0.165 **	(0.058)	-0.129	(0.159)	-0.096	(0.186)	-0.127	(0.176)	-0.178	(0.152)
Lagged Female Share of the Labor Force	-0.196	(0.097)	-0.216 *	(0.105)	-0.205	(0.116)	-0.221	(0.118)	-0.199 *	(0.094)
Lagged Female PT Employment Rate	0.015 *	(0.043)	0.018	(0.042)	0.004	(0.053)	0.019	(0.044)	0.014	(0.043)
Time	-0.299 **	(0.100)	-0.287 **	(0.106)	-0.290 *	(0.113)	-0.298 *	(0.107)	-0.295 **	(0.101)
Intercept	38.326 ***	(4.985)	39.914 ***	(5.243)	36.336 ***	(5.259)	38.233 ***	(6.060)	38.391 ***	(5.045)
Serial Correlation and Residual Variation:										
Rho	0.989 ***	(0.004)	0.991 ***	(0.004)	0.992 ***	(0.004)	0.992 ***	(0.004)	0.989 ***	(0.004)
	--	--	0.990 ***	(0.004)	0.989 ***	(0.004)	0.990 ***	(0.004)	--	--
Residual	0.921 ***	(0.041)	0.831 ***	(0.070)	0.944 ***	(0.069)	0.975 ***	(0.069)	0.976 ***	(0.069)
Proportion of Variance Explained	88.59%		89.71%		88.31%		87.92%		87.90%	
N	450		450		426		432		439	
Countries	14		14		14		14		14	
-2 Log-Likelihood	-665.70		-670.65		-639.8		-655.15		-661.60	
Fixed Effect Parms	12		13		13		13		13	
Random/Serial/Residual Parms	2		3		3		3		2	
AIC	1350.10		1347.3		1285.6		1316.3		1327.2	
BIC	1352.40		1349.2		1287.5		1318.2		1328.5	

Note: Estimation method is REML

* p < .05, ** p < .01, *** p < .001



is differential rates of part-time employment among women, with higher levels of part-time employment among women increasing the male-female wage gap. The political context of the welfare state is an important avenue for decreasing the male-female wage gap, with the cumulative left cabinet incumbency and corporatism scale negatively related to the male-female wage gap, which makes sense given the emphasis of social democratic parties on equality and employment. Welfare states also reduce the male-female wage gap through public employment, in which wage structures are generally compressed and the wage gap is smaller.

The addition of family policies increases the fit of the model to the data (models 2-5). More generous parental leaves and childcare for children of all ages are associated with lower levels of inequality, such that having the high score on the parental leave index reduces the male-female wage gap by almost three percentage points, compared to scoring 0 on the index, having the high score on the childcare index for younger children reduces the wage gap by one and half

percentage points, and having the high score on the childcare index for pre-school age children reduces the wage gap by 1.3 percentage points (Figure 9). Thus, it appears that generous parental leaves and childcare reduce the male-female wage gap by allowing women to maintain attachment to employment even when they have children, a period generally associated with declining employment and reduced labor market rewards.

Panel A of Table 9 reports summary mixed model results estimating the male-female wage gap using disaggregated leave length and pay measures. I present summary fixed effect estimates here because the mean structure and the variance components structure for these models does not change significantly from the models shown in the previous table. Therefore, there is little to be gained from presenting full models in multiple tables compared to presenting summary models in one table.

Maternity leave length is strongly associated with lower levels of the male-female wage gap. In particular, longer maternity leaves are associated with lower levels of the male-female wage gap and, because the squared term is not significant, this positive effect does not level off or reverse directions as maternity leaves get longer. This finding is consistent with the fact that maternity leaves allow women to maintain both their occupational status and relatively high levels of pay while having children, thus, reducing the male-female wage gap. Flat-rate birth benefits, on the other hand, increase the male-female wage gap.

Panel B reports mixed model results estimating the male-female wage gap using an indicator variable for guaranteed slots in childcare and childcare coverage for children ages zero to two and three through school age. Both the indicator variable for guaranteed slots and coverage for children of all ages are significant. The magnitude of these effects is reasonably large with guaranteed childcare being associated with a 1.3 percentage point decrease, and a 1.5

Table 9: Summary Fixed Effect Estimates for Disaggregated Family Policy Measures from Mixed Models Estimating the Male-Female Wage Gap

Panel A: Leaves, 5 Year Lag

	Maternity Leave		Parental Leave		Child Care Leave	
Variable	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
Leave (In Weeks)	-0.282 **	0.102	-0.004	0.009	-0.006	0.013
Leave Squared	-0.002	0.002	0.000	0.000	0.000	0.000
Leave Pay[a]	-0.005	0.004	--	--	-0.597	0.405
Flat-Rate Birth Benefit	1.085 *	0.547	--	--	--	--

Panel B: Childcare, 5 Year Lag

	Guarantees		Coverage			
Variable	Estimate	S.E.	Estimate	S.E.		
Childcare Ages 0-2	-1.320 ***	0.261	-0.005 ***	0.027	--	--
Childcare Ages 3-School Age	-1.536 ***	0.171	-0.022 ***	0.014	--	--

Panel C: Expenditure, 5 Year Lag

	Maternity and Parental Leaves		Childcare		Familly Allowances, Benefits	
Variable	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
Expenditure	-9.653 *	4.795	-3.431 *	(1.370)	4.893 *	(1.485)
Childcare Tax Credits	--	--	--	--	-0.422 ***	(0.059)

Note: The following fixed effects are in the model but not shown in order to save space: employment in services, female average years of school, lagged real GDP, unemployment rate, left cabinent and corporatism scale, cumulative females in parliament, individual taxation, public sector employment, female share of the labor market, proportion of women in part-time employment, and time. Serial correlation structure is AR1 or ARMA. There are no significant random effects.

a: Leave pay is measured as a percentage of wage replaced for maternity leave and as a indicator variable for child care leave

* p < .05, ** p < .01, *** p < .001

percentage point decrease in the male-female wage gap for children ages zero to two and three to school age, respectively. The coverage variables are also significant but of a much smaller magnitude, with the most generous coverage for younger children only decreasing the male-female wage gap by .3 percentage points and by 2.2 percentage points for older children.

Panel C shows that expenditure on family policy is a primary driver of the male-female wage gap, with the high expenditure on maternity and parental leaves decreasing the wage gap

Table 10: Best Linear Unbiased Prediction (BLUP) of the Random Effects and Standard Errors by Country for the Male-Female Wage Gap

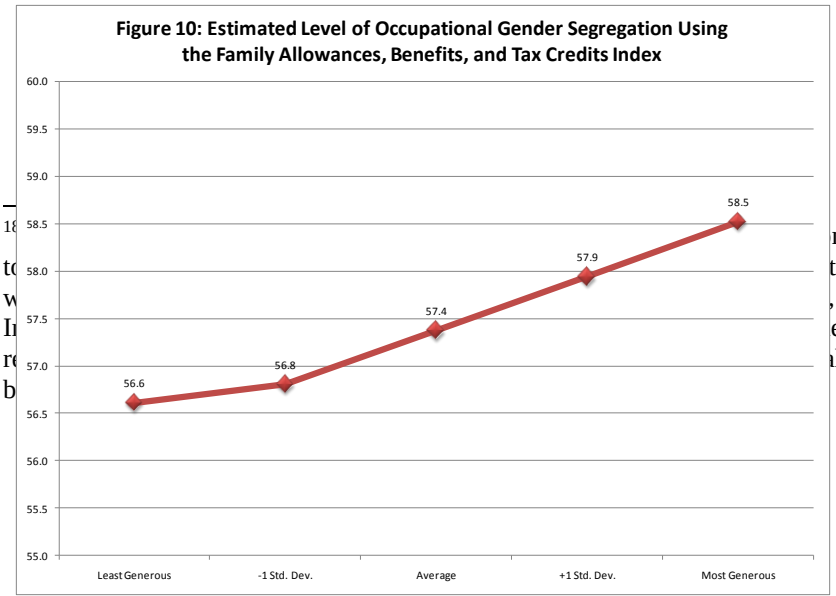
	Public Expenditure on Maternity and Parental Leaves	
Country	BLUP	S.E.
Austria	2.471	(2.503)
Belgium	7.184 *	(3.132)
Canada	-0.286	(2.939)
Denmark	3.292	(2.520)
Finland	3.122	(2.474)
France	2.380	(2.776)
West Germany	2.550	(2.957)
Ireland	-2.457	(3.833)
Italy	2.689	(3.479)
The Netherlands	-3.752	(3.640)
Norway	-5.441 *	(2.584)
Sweden	-4.864 *	(2.483)
UK	2.381	(3.937)
US	1.254	(4.383)

* p < .05, ** p < .01, *** p < .001

by 10 percentage points. There is a significant random effect for this variable, characterized in Table 10. Expenditure on publicly funded childcare and/or tax credits for purchasing private childcare are both associated with low levels of the male-female wage gap. Finally, high levels of expenditure on family allowances and support benefits are associated with higher levels of the wage gap.

Occupational Gender Segregation: The model fit process for this dependent variable is summarized in Table 7, while the final results of the model fitting process are shown in Table 11[18]. It is important to remember that I have very limited information on this measure of women's employment inequality and the information I do have is highly variable across countries.

Turning to the fixed effects portion of the base model, as expected, higher levels of employment in services is associated with increasing levels of occupational gender segregation, conforming to previous research that demonstrates that the expansion of the service sector reinforces both vertical and horizontal sex segregation. It



18

nal gender segregation index, in order
ts from these models are consistent
, I estimate the Size Standardized
ex, or A, to check for robustness. The
alysis of the impact of family policies

is also important to note that, as expected, women's educational attainment is not related to occupational gender segregation. Individual taxation tends to decrease occupational gender segregation, likely by increasing employment and work hours of women, although this analysis sheds no light on the exact process by which this works. Public sector employment is associated with higher levels of gender segregation, likely because the expansion of the public serve sector reinforces horizontal sex segregation. The addition of the family policy indexes increases the fit of the model to the data (models 2-5). The only significant index is the family allowances and tax credits index, which is associated with higher levers of occupational gender segregation (Figure 10).

Table 12 presents summary estimates for mixed models disaggregating the various family policy indexes. I use summary fixed effects estimates here in order to reduce the number of tables. Flat-rate birth benefit and paid childcare leave (Figure 11) are both associated with higher levels of occupational gender segregation, likely because flat-rate birth benefits are more

Table 12: Summary Fixed Effect Estimates for Disaggregated Family Policy Measures from Mixed Models Estimating Occupational Gender Segregation

Panel A: Leaves, 2 Year Lag

	Maternity Leave		Parental Leave		Child Care Leave	
Variable	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
Leave (In Weeks)	0.060	(0.165)	-0.071	(0.051)	0.105 *	(0.053)
Leave Squared	-0.002	(0.003)	0.001	(0.000)	-0.001 *	(0.001)
Leave Pay[a]	-0.006	(0.018)	--	--	2.708	(1.488)
Flat-Rate Birth Benefit	5.800 ***	(1.127)	--	--	--	--

Panel B: Childcare, 2 Year Lag

	Guarantees		Coverage			
Variable	Estimate	S.E.	Estimate	S.E.		
Childcare Ages 0-2	-0.084	(1.541)	-0.021	(0.053)	--	--
Childcare Ages 3-School Age	-2.577	(1.657)	-0.069 *	(0.032)	--	--

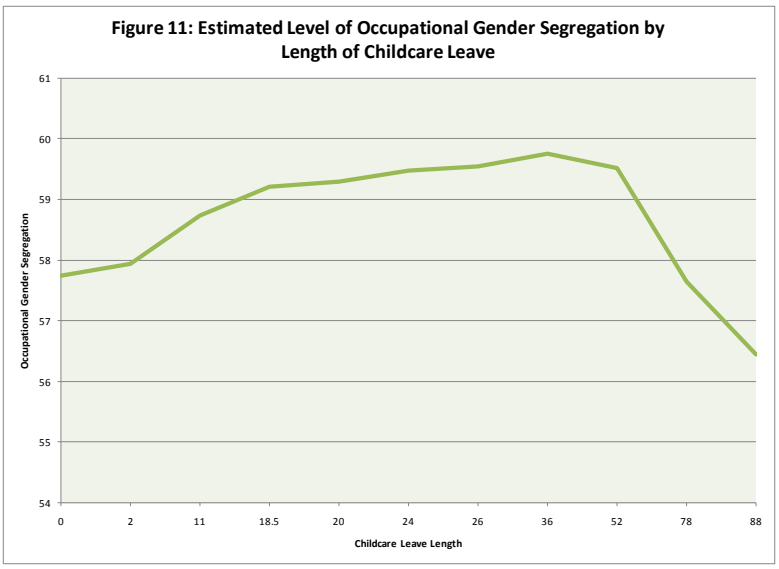
Panel C: Expenditure, 2 Year Lag

	Maternity and Parental Leaves		Childcare		Familly Allowances, Benefits	
Variable	Estimate	S.E.	Estimate	S.E.	Estimate	S.E.
Expenditure	4.193	(2.848)	0.551	(1.832)	0.480	(0.993)
Childcare Tax Credits	--	--	--	--	0.841	(1.090)

Note: The following fixed effects are in the model but not shown in order to save space: employment in services, female average years of school, lagged real GDP, unemployment rate, left cabinent and corporatism scale, cumulative females in parliament, individual taxation, public sector employment, female share of the labor market, and time. Serial correlation structure is ARMA. There are no significant random effects.
a: Leave pay is measured as a percentage of wage replaced for maternity leave and as a indicator variable for child care leave
* p < .05, ** p < .01, *** p < .001

likely to exist in countries that favor more traditional divisions of labor, while childcare leaves are more likely to enforce a traditional division of labor. On the other hand, more extensive childcare coverage for children ages 3 to school age reduces occupational gender segregation, although the magnitude of this effect is not large.

My findings are in direct contrast to Mandel and Semyonov's (2005) findings that generous family policies increase occupational gender segregation. There could be a number of reasons for this difference in findings, including the fact that I use annual longitudinal aggregate



data, while they use cross-sectional multi-level data. Our measures of occupational gender segregation are also different; they use a measure similar to an index of dissimilarity, whereas I use a measure that is size-standardized. Finally, I utilize more complete measures of family policies, including multiple indexes and disaggregated indexes, where they measure family policies in a single index of maternity leave, childcare coverage, and public sector employment.

To summarize my findings, generous parental leaves and childcare reduce the male-female wage gap by allowing women to maintain attachment to employment even when they have children, a period generally associated with declining employment and reduced labor market rewards. However, family policies that favor a more traditional division of labor, such as family allowances and support benefits, flat-rate birth benefits, and childcare leaves, increase the male-female wage gap and occupational gender segregation.

Discussion and Conclusions

In this paper, I empirically assessed how both welfare state policies and activities and changes in the economy and labor markets influences the male-female wage gap and occupational gender segregation across 14 welfare states from 1960 to 2008. I focus primarily on family policies, a subset of state social policies that, theoretically, mediate the relationship

between the market and family, and allow men and women to engage in (or opt out of) care-taking responsibilities without losing their labor market position and rewards. The family policies I consider include parental leaves, publicly funded childcare and family allowances, support benefits, and tax credits. These policies are particularly intriguing because there is compelling evidence that much of the gap between men's and women's employment outcomes is caused by motherhood (Sigle-Rushton and Waldfogel 2007; Budig, Misra, and Boeckmann 2009).

Family policies are targeted specifically at mothers, and families with children, and so should, theoretically, reduce the inequality between men's and women's employment outcomes. However, there is relatively little research into the role that family polices play in employment inequality at the aggregate level, especially in hours of work, the wage gap, or occupational gender segregation. This papers fills in that gap in the research by investigating the impact of family policies on the male/female wage gap, and gender occupational segregation, while accounting for other welfare state policies and activities and labor market factors that have been linked to women's employment outcomes.

I began by describing patterns of women's employment inequality across the countries in my sample and over time. I then described how welfare state and labor market processes are associated with these outcomes. I then described family policies and why there is good reason to believe that generous family policies should result in higher rates of female labor force participation. I then described the literature that empirically assesses the relationship between family policies and women's labor force participation.

I next described my data, variables and methods before turning to the results of the analysis. In my base models, I found that a high level of employment in services was associated

with high levels of employment inequality for women, including a higher male-female wage gap, and higher levels of occupational gender segregation. When left parties dominated the political context in a country, and there was a tight relationship between employers, employees, and the government, the male-female wage gap tended to be lower. I found that the welfare state influenced gender segregation through taxation policies, with individual taxation that did not penalize women for working when their spouse works being associated with more gender neutral labor markets. I also found that public sector jobs were clearly segregated by gender, but that this segregation was not associated with a pay differential between men and women due to the compressed nature of wages in the public sector.

While useful for understanding the ways that labor market and welfare state factors combine to influence women's employment outcomes, the base model analysis ignored a special category of welfare state policies that provide useful insights into understanding these interrelationships. These policies are family policies, a subset of state social policies that, theoretically, mediate the relationship between the market and family, and allow men and women to engage in (or opt out of) care-taking responsibilities without losing their labor market position and rewards. In my empirical analysis of the impact of family policies on these outcomes, I did not find evidence that family policies mediate the relationship between the labor market, other welfare state activities and policies, and women's employment outcomes. Instead, family policies had independent effects above and beyond those of the variables in the base model.

I investigated the impact of family policies on each of my measures of employment inequality using both summary indexes for each type of family policy (parental leaves, childcare for infants and toddlers, childcare for pre-school age children, and family allowances, benefits,

and tax credits). I found that policies that guaranteed a woman's employment position while she cared for children reduced the male-female wage gap. Policies that relieved mothers of the need for full-time care for children also reduced the male-female wage gap. Childcare for pre-school children had smaller magnitudes than childcare for younger children in this analysis. Importantly, neither parental leaves nor childcare policies appeared to be strongly related to occupational gender segregation. On the other hand, family policies that were directed at maintaining a traditional family structure, were unevenly distributed across the population, or had little connection to employment increased occupational gender segregation.

In the third step of the analysis, I disaggregated these indexes into their various components focusing on the various types and length of leave, coverage vs. guaranteed slots in childcare, and expenditure on family policies. Disaggregating these indexes in this way is something that has rarely been done in previous aggregate level research and led to many interesting findings. For example, I found that longer maternity leaves decreased the male-female wage gap, whereas parental leaves did not reduce the wage gap. I conclude that longer maternity leaves would be more effective at reducing employment inequality in wages than the current combination of a short maternity leave and a long, low paid, parental leave that is available in many countries, because maternity leaves are better compensated. I also concluded that child care leaves, a fairly new phenomenon in many countries, were generally associated with poor employment outcomes for most women because childcare leaves were associated with higher levels of occupational gender segregation.

I found that childcare for children of all ages was associated with lower levels of the male-female wage gap, although childcare for the youngest children was more consistently associated with higher labor force participation rates. These findings indicated that high levels

of publicly funded childcare, even when implemented for a variety of reasons not having to do with women's labor force participation, are important for reducing wage inequality between men and women. I found that both coverage and guaranteed slots were connected with lower levels of women's employment inequality. I broadly conclude from this analysis that policies that relieved mothers of the need for full-time care for children are more effective than policies than guaranteed a woman's employment position while she cares for children at reducing the wage gap between men and women.

To answer the question posed in the title, women's employment inequality is caused by labor market factors but generous family policies can reduce that inequality. The research and analyses presented in this paper make several important contributions to the literature. First, the database that I compiled contained a longer time series and more comprehensive data than has been previously available. Second, my empirical methodology more accurately corrected for the non-independence of observations in pooled cross-sectional time-series data. Third, my methodology allowed me to assess which outcomes and variables had country specific slopes through the use of random effects. While I did not find many random effects in my analysis, they did provide a more nuanced view than was available through fixed effects alone for labor force participation and part-time employment rates. Fourth, I used a broader set of measures than has typically been done in analysis at the aggregate level. Finally, and most importantly, this research filled in some critical gaps in the literature on the effect of family policies on women's employment inequality, especially wages and gender segregation.

The main focus of this paper was an empirical analysis of data to see whether or not there was link between welfare state family policies and women's employment inequality at the aggregate level. However, in the midst of the complex analyses, it is easy to lose sight of the real

women, men, and children who are affected by these policies. My research here has shown that there are many ways that family policies decrease inequality between women's and men's employment outcomes, which has significant and lasting effects on women, families, and the welfare state as a whole

References

Aronja, Roman, Maxime Ladaique, and Mark Pearson. 2001. "Growth, Inequality, and Social Protection." Labour Market and Social Policy Occasional Papers #51. Paris: OECD.

Averett, Susan L., H. Elizabeth Peters, and Donald M. Waldman. 1997. `Tax Credits, Labor Supply, and Child Care.' *Review of Economics and Statistics*.

Barro, Robert J. and Jong-Wha Lee. 2000. "International Data on Educational Attainment: Updates and Implications." CID Working Paper No. 42.

Bastelaer, Alois van, Georges Lemaitre, and Pascal Marianna. 1997. "The Definition of Part-Time Work for the Purpose of International Comparisons." *Labour Market and Social Policy Occasional Papers*. Paris: OECD 22.

Beck, Nathaniel and Jonathan N. Katz. 1991. "What to do (and not to do) with Time-Series, Cross-Section Data." *The American Political Science Review.* 89(3)634-647.

Berg, Ivar and Arne Kalleberg (Eds.). 2001. *Sourcebook of Labor Markets: Evolving Structures and Processes*. New York: Klewer and Plenum.

Blau, Francine D., Marrianne A. Ferber, and Anne E. Winkler. 2001. *The Economics of Women, Men, and Work.* 4th Edition. New York: Prentice Hall.

Blossfeld, Hans-Peter and Yossi Shavit. 1993. "Persisting Barriers: Changes in Educational Opportunities in Thirteen Countries." Pg. 1-23 in *Persistent Inequality: Changing Educational Attainment in Thirteen Countries.* Eds. Yossi Shavit and Hans-Peter Blossfeld. Boulder, CO: Westview Press.

Blossfeld, Hans-Peter and Catherine Hakim. 1997. *Between Equalization and Marginalization: Women Working Part-Time in Europe and the United States of America*. Oxford: Oxford University Press.

Budig, Michelle J and Paula England. 2001. "The Wage Penalty of Motherhood." *American Sociological Review.* 66(2): 204-225.

Bruning, **Gwennaële** and Janekke Plantega. 1999. "Parental Leave and Equal Opportunities: Experiences in Eight European Countries." *Journal of European Social Policy* 9(3).

Castles, Francis. 2001. "On the Political Economy of Recent Public Sector Development." *Journal of European Social Policy* 11: 195-211.

Charles, Maria and David B. Grusky. 2004. *Occupational Ghettos: The Worldwide Segregation of Women and Men.* Stanford: Stanford University Press.

Crouch, Colin and Wolfgang Streeck. 1997. *The Political Economy of Modern Capitalisms.* London: Sage.

Cummings, Scott. 1987. "Vulnerability to the Effects of Recession: Minority and Female Workers." *Social Forces.* 65(3): 834-857.

Daly, Mary. 2000. "A Fine Balance: Women's Labor Market Participation in International Comparison." *Welfare and Work in the Open Economy: Diverse Responses to Common Challenges*, Vol. 2. F. Scharpf and V. Schmidt. Eds. Oxford: Oxford University Press.

Diggle, Peter, Kung-Yee Liang, Scott Zeeger. 1994. *Analysis of Longitudinal Data.* Oxford: Oxford University Press

DiPrete, Thomas A. 1981. "Unemployment Over the Life Cycle." *American Journal of Sociology.* 87(2):286-307.

Diprete, Thomas A. and David B. Grusky. 1990. "Structure and Trend in the Process

Of Stratification for American Men and Women." *American Journal of Sociology.* 96(1): 107-143.
Diprete, Thomas A. and K. Lynn Nonnemaker. 1997. "Structural Change, Labor Market Turbulence, and Labor Market Outcomes." *American Sociological Review* 62: 386-404.
Doeringer, Peter B. and Michael J. Piore. 1971. *Internal Labor Markets and Manpower Analysi*s. Lexington, MA: D.C. Heath.
Eliason, Scott R., Robin Stryker, and Eric Tranby. 2008. " The Welfare State, Family Policies and Women's Labor Force Participation: Combining Fuzzy-Set and Statistical Methods to Assess Causal Relations and Estimate Causal Effects." Pgs. 135-195 in *Method and Substance in Macrocomparitive Analysis.* Edited by Lane Kenworthy and Alexander Hicks. New York: Palgrave Macmillan.
England, Paula and George Farkas. 1986. *Households, Employment, and Gender: A Social, Economic, and Demographic View*. New York: Aldine.
England, Paula and Nancy Folbre. 1999. "Who Should Pay for Kids." *The Annals of the American Academy of Political and Social Science* 563:194-207.
England, Paula, Joan Hermsen, and David Cotter. 2000. "The Devaluation of Women's Work: A Comment on Tam." *American Journal of Sociology* 105:1741-1751.
Esping-Andersen, Gosta. 1991. *Three Worlds of Welfare Capitalism.* Princeton: Princeton University Press.
Esping-Andersen, Gosta, John Myles, Anton Hemerijck and Duncan Gallie. 2002. *Why We Need a New Welfare Stat*e. Oxford: Oxford University Press.
Ferrarini, Tommy. 2003. *Parental Leave Institutions in Eighteen Post War Welfare States*. Swedish Institute for Social Research Doctoral Dissertation Series. No 58.
Gauthier, Anne H. 1996. *The State and the Family: A Comparative Analysis of Family Policies in Industrialized Countries*. Oxford: Clarendon.
Glass, Jennifer L. and Sarah Beth Estes. 1997. "The Family Responsive Workplace" *Annual Review of Sociology*. Vol. 23. pp. 289-313.
Glass, Jennifer L. 2000. "Envisioning the Integration of Family and Work: Toward a Kinder, Gentler Workplace." *Contemporary Sociology*. 29(1): 129-143.
Gornick, Janet. 1997. *Women, Employment & Part-Time Work: A Comparative Study of the United States, the United Kingdom, Canada & Australia.* New York: Garland.
Gornick, Janet, C, Marcia K. Meyers, and Katherine E. Ross. 1998. "Public Policies and the Employment of Mothers: A Cross-National Study." *Social Science Quarterly* 79(1): 35-54.
Gornick, Janet and Jerry Jacobs. 1998. "Gender, the Welfare State and Public Employment: A Comparative Study of Seven Industrialized Countries." *American Sociological Review* 63: 688-710.
International Institute for Strategic Studies. 1960-1999. *The Military Balance* London: International Institute for Strategic Studies
Hall, Peter A. and David Soskice. 2001. *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage.* Oxford: Oxford University Press.
Hicks, Alexander and Lane Kenworthy 2008. "Family Policies and Women's Employment: A Regression Analysis". Pgs. 196-221 in *Method and Substance in Macrocomparative Analysis.* Edited by Lane Kenworthy and Alexander Hicks. New York: Palgrave Macmillan.
Huber, Evelyne and John Stephens. 2000. "Partisan Governance, Women's

Employment, and the Social Democratic Service State." *American Sociological Review* 65: 323-342
Huber, Evelyne and John Stephens. 2001. *Development and Crisis of the Welfare State: Parties and Policies in Global Markets.* Chicago: University of Chicago Press.
Kalleberg, Arne and Aage B. Sorensen. 1979. "The Sociology of Labor Markets." *Annual Review of Sociology* 5: 351-379.
Kalleberg, Arne. L, Barbara F. Reskin, and Ken Hudson. 2000. "Bad Jobs in America: Standard and Nonstandard Employment Relations and Job Quality in the United States." *American Sociological Review* 65(2):256-278
Kittel, Bernhard and Hannes Winner. 2005. "How Reliable is Pooled Analysis in Political Economy: The Globalization-Welfare State Nexus Revisited." *European Journal of Political Research.* 44:269-293.
Korpi, Walter 2000 "The Face of Inequality: Gender, Class, and Patterns of Inequalities in Different Types of Welfare Sates." *Social Politics* 7(2), pp. 127-91.
Kreyenfeld, Michaels and Karsten Hank. 2000. "Does the Availability of Childcare Influence the Employment of Mothers? Findings from Western Germany." *Population Research and Policy Review* 19(4): 317-337.
Leira, Arnlaug. 2002. *Working Parents and the Welfare State: Family Change and Policy Reform in Scandinavia*. Cambridge University Press.
Lewis, Jane. 1992. "Gender and the Development of Welfare Regimes." *Journal of European Social Policy* 2(3): 159-173.
Mandel, Hadas and Moshe Semyonov. 2005. "Family Policies, Wage Structures, and Gender Gaps: Sources of Earnings Inequality in 20 Countries." *American Sociological Review.* 70:949-967.
Michel, Sonya and Rianne Mahon (Eds.). 2002. *Child Care Policy at the Crossroads: Gender and Welfare State Restructuring*. New York: Routledge.
Misra, Joya, Michelle Budig, and Stephanie Moller. 2007. "Reconciliation Policies and the Effects of Motherhood on Employment, Earnings, and Poverty." *Journal of Comparative Policy Analysis*. 9(2): 135-55.
Misra, Joya, Stephanie Moller, and Michelle Budig. 2007. "Work Family Policies and Poverty for Partnered and Single Women in Europe and North America. *Gender and Society*. 21(6): 804-827.
Misra, Joya, Michelle Budig, and Irene Boeckmann. Forthcoming 2010. "Cross-National Patterns of Gender, Parenthood, and Employment." *Research in Work and Organizations.*
Moen, Phyllis. (Ed.) 2003. *It's About Time: Couples and Careers.* Ithaca, NY: Cornell University Press.
Morgan Kimberly J, and Karen Zippel. 2003. "Paid to Care: The Origins and Effects of Care Leave Policies in Western Europe". *Social Politics.* 10(1): 49-85.
Moss, Peter and Fred. F Deven (Eds.). 1999. *Parental Leave: Progress or Pitfal*l? The Hague/Brussels: NIDI: CBGS Publications.
Myles, John and Jill Quadagno. 2002. "Political Theories of the Welfare State." *Social Service Review* Pgs. 34-56
O'Connor, Julia. 1996. "From Women in the Welfare State to Gendering Welfare State Regimes." *Current Sociology* 44:1-24.
O'Connor, Julia, Ann Shola Orloff and Sheila Shaver. 1999. *States, Markets, Families:*

Gender, Liberalism and Social Policy in Australia, Canada, Great Britain and the United States. Cambridge: Cambridge University Press.
O'Reilly, Jacqueline and Colette Fagan. (Eds.). 1998. *Part-Time Prospects: An International Comparison of Part-Time Work in Europea, North America and the Pacific Rim.* London; Routledge.
OECD. 1999. *Labour Force Statistics: 1978-1999.* Paris: OECD. Available online at: (www.sourceoecd.org)
OECD. 2002. *Economic Outlook Database.* Paris: OECD Available online at: (www.sourceoecd.org).
OECD. 2007. *Employment and Labour Force Statistics Database*. Available online at: (www.sourceoecd.org).
Orloff, Ann Shola. 1996. "Gender in the Welfare State." *Annual Review of Sociology* 22: 51-78.
Orloff, Ann Shola. 2002. "Women's Employment and Welfare Regimes: Globalization, Export Orientation and Social Policy in Europe and North America." Social Policy and Development Programme, Paper Number 12, UN Research Institute for Social Development, Geneva.
Pettit, Becky and Jennifer Hook. 2005. "The Structure of Women's Employment in Comparative Perspective". *Social Forces* 84(2):779-801.
Pierson, Paul (Ed.). 2001. *The New Politics of the Welfare State.* Oxford: Oxford University Press
Plumper, Thomas, Vera E. Troeger, and Philip Manow. 2005. "Panel Data Analysis in Comparative Politics: Linking Method to Theory." *European Journal of Political Research.* 44:327-354.
Randall, Vicky. 2000. "Childcare Policy in the European States: Limits to Convergence." *Journal of European Public Policy* 7: 346-68.
Rogers, William. 1993. "Regression Standard Errors in Clustered Samples". *Stata Technical Bulletin.* 13: 19-23.
Ronsen, Marit and Marianne Sundstrom. 2002. "Family Policy and after-Birth Employment among New Mothers: A Comparison of Finland, Norway and Sweden," *European Journal of Population* 18(2) 121-152.
Rubery, Jill. Mark Smith and Colette Fagan. 1999. *Women's Employment in Europe: Trends and Prospects.* London & New York: Routledge.
Rubin, Beth A. 1996. *Shifts in the Social Contract: Understanding Change in the American Economy.* Thousand Oaks, CA: Pine Forge Press.
Ruhm, Christopher and Jackqueline L. Teague. 1995. "Parental Leave Policies in Europe and North America." NBER Working Paper #5065.
Ruhm, Christopher. 1996. "The Economic Consequences of Parental Leave Mandates: Lessons from Europe." NBER Working Paper #5688.
Sainsbury, Diane. 1999. *Gender and Welfare State Regime*s. Oxford: Oxford University Press.
Scharpf, Fritz and Vivien A. Schmidt (Eds.). 2000. *Welfare and Work in the Open Economy*. Oxford: Oxford University Press.
Shieh, Yann-Yann, & Fouladi, Rachel T. 2003. "The Effect Of Multi-Collinearity On Multilevel Modeling Parameter Estimates And Standard Errors." *Educational and Psychological Measurement*, 63(6):951-985.
Stryker, Robin and Scott Eliason. 2004. "The Welfare State, Gendered Labor Markets

and Aggregate Political Orientations in France, Belgium, Germany, Italy, Denmark and Britain, 1977-1994." European University Institute. Robert Schuman Centre Advanced Studies Working Paper [RSC2003/20].

Stryker, Robin, Scott R. Eliason, Eric Tranby, and William Hamilton. Forthcoming. "Family Policies, Education, and Female Labor Force Participation in Advanced Capitalist Democracies." *Social Policy in the New Europe.* Edited by Gary Cohen. Oxford: Berghahn Books.

Tienda, Marta, Katharine M. Donato, and Hector Cordero-Guzman. 1992. "Schooling, Color, and the Labor Force Activity of Women." *Social Forces* 71(2): 365-395.

UNESCO. 1960-1999. *Statistical Yearbook*, Paris.

Verbeke, Geert and Geert Molenberghs. *Linear Mixed Models for Longitudinal Data: Spring Series in Sociology*. New York: Springer.

Wennemo, Irene. 1994. *Sharing the Costs of Children: Studies on the Development of Family Support in the OECD Countries.* Swedish Institute for Social Research Doctoral Dissertation Series. No 25.

Winegarden, C.R. and Paula M. Bracy. 1995. "Demographic Consequences of Maternal Leave Programs in Industrial Countries: Evidence from Fixed Effect Models." *Southern Economic Journal 61(4) 1020-35.*

Appendix 1: Bibliography of Data Sources

Baker, Maureen. 1995. *Canadian Family Policies: Cross-National Comparisons* Toronto: University of Toronto Press.

Bale, Tim and Ingrid Van Biezen. 2007. "Political Data in 2006". *European Journal of Political Research.* 46(7/8).

Bale, Tim and Ingrid Van Biezen. 2008. "Political Data in 2007". *European Journal of Political Research.* 47(7/8).

Bale, Tim and Ingrid Van Biezen. 2009. "Political Data in 2008". *European Journal of Political Research.* 48(7/8).

Barro, Robert J. and Jong-Wha Lee. 2000. "International Data on Educational Attainment: Updates and Implications." CID Working Paper No. 42.

Bastelaer, Alois van, Georges Lemaitre, and Pascal Marianna. 1997. "The Definition Of Part-Time Work for the Purpose of International Comparisons." *Labour Market and Social Policy Occasional Papers*. Paris: OECD 22.

Bruning, C. and J. Plantega. 1999. "Parental Leave and Equal Opportunities: Experiences in Eight European Countries." Journal of European Social Policy 9(3).

Census Bureau. 2000. *Statistical Abstract of the United States*. Pg. 396. Washington: U.S. Government Printing Office.

Charles, Maria and David B. Grusky, Eds. 2004. *Occupational Ghettos: The Worldwide Segregation of Men and Women.* Stanford: Stanford University Press.

Cochran, Moncrieff. 1993. *International Handbook of Child Care Policies and Programs.* London: Greenwood Press.

Council of Europe. 1982-1998. *Comparative Tables of Social Security Schemes: In Council of Europe Member States and Other Countries: General Scheme.* 1st – 9th Editions Strasbourg, Germany: Council of Europe Press.

Commission of the European Communities. 1970-1984. *Comparative Tables of Social Security Schemes: In Member States: General Scheme.* 4th – 13th Editions Strasbourg, Germany: Council of Europe Press.

Commission of the European Communities. 1990. *Childcare in the European European Communities.* Women of Europe Supplements No. 31 Brussels: Commission of the European Communities

Esping-Andersen, Gosta, John Myles, Anton Hemerijck and Duncan Gallie. 2002. *Why We Need a New Welfare Stat*e. Oxford: Oxford University Press.

Eurydice and Cedefop. 1990. *Structures of Education and Initial Training Systems in the Member States of the European Community.* Brussels: EURYDICE and CEDEFOP.

European Commission Network on Childcare and Other Measures to Reconcile Employment and Family Responsibilities. 1995. *A Review of Services for Young Children in the European Union.* Brussels: European Commission.

European Commission. 1998. *Care in Europe: Joint Report of the "Gender and Employment" and the "Gender and Law" Groups of Experts.* Brussels: European Commission.

European Commission, Eurydice, and Eurostat. 2000. *Key Data on Education in Europe: Primary Education 1999/2000.* Brussels: European Commission.

European Commission. 2009. *Gender Segregation in the Labour Market: Root Causes, Implications, and Policy Responses in the EU.* Brussels: European Commission.
Dingeldey, Irene. 2001. "European Tax Systems and Their Impact on Family Employment Patterns." *Journal of Social Policy.* 30:653-672.
Gauthier, Anne H. 1996. *The State and the Family: A Comparative Analysis of Family Policies in Industrialized Countries*. Oxford: Clarendon.
Gauthier, Anne H. 2002. *Comparative Family Cash Benefits Database.* Calgary: University of Calgary. Available online at: (http://soci.ucalgary.ca/fypp/home/family-policy/databases).
Gauthier, Anne H. 2002. *Comparative Maternity, Parental, and Childcare Leave and Benefits Database.* Calgary: University of Calgary. Available online at: (http://soci.ucalgary.ca/fypp/home/family-policy/databases).
Gornick, Janet C., Marcia K. Meyers, and Katherine E. Ross. 1997. "Supporting the Employment of Mothers: Policy Variation Across Fourteen Welfare States." *Journal of European Social Policy* 7(1): 45-70.
Gornick, Janet C., Marcia K. Meyers, and Katherine E. Ross. 2003. *Family Policy Database, Version 2.* Available online at: (http://www.lisproject.org/publications/fampol/fampol03.htm)
Gornick, Janet C. and Marcia K. Meyers. 2003. *Families That Work: Policies for Reconciling Parenthood and Employment*. New York: Russell Sage Foundation.
Heston, Alan, Robert Summers and Bettina Aten. 2009. *Penn World Table Version 6.3*. Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania. Available online at: (http://pwt.econ.upenn.edu/php_site/pwt63/pwt63_form.php)
Hofferth, Sandra J. et. al. 1991. *National Child Care Survey, 1990.* Washington: The Urban Institute Press
Huber, Evelyne, Charles Ragin, and John D. Stephens. 1997. *Comparaitve Welfare States Data Set.* Available online at: (http://www.lisproject.org/publications/welfaredata/welfareaccess.htm)
Huber, Evelyne, Charles Ragin, John D. Stephens, David Brady, and Jason Beckfield. 2004. *Comparative Welfare States Data Set*. Northwestern University, University of North Carolina, Duke University and Indiana University, 2004. Available online at: (http://www.lisproject.org/publications/welfaredata/welfareaccess.htm)
International Institute for Strategic Studies. 1960-1999. *The Military Balance* London: International Institute for Strategic Studies.
International Labour Office. 1985. *Maternity Benefits in the Eighties: An ILO Global Survey (1964-84).* Geneva: International Labour Office.
International Labour Office. 1994. "Maternity and Work" *Conditions of Work Digest Vol. 13.* Geneva: International Labour Office .
International Labour Office. 2009. *SEGREGAT* Database of Employment by Sex and Detailed Occupational Groups. Geneva: International Labour Office. Available online at (http://laborsta.ilo.org/applv8/data/segregate.html).
International Labour Office. 2009. LABORSTA Labor Statistics Database. Geneva: International Labour Office. Available online at (http://laborsta.ilo.org/).
International Social Security Association. 2009. *Social Security Programs Throughout The World.* Available online at (www.issa.int/ssw/)
Inter-Parliamentary Union. 2010. *Statistical Archive of Women in National Parliaments.*

Available online at: (http://www.ipu.org/wmn-e/world-arc.htm).
Kamerman, Sheila, and Alfred J. Kahn. 1975. *Child Care Programs in Nine Countries: A Report Prepared for the OECD Working Party on the Role Of Women in the Economy.* Washington D.C.: U.S. Department of Health Education, and Welfare.
Kamerman, Sheila, and Alfred J. Kahn. 1978. *Family Policy: Government and Families in Fourteen Countries.* New York: Columbia University Press.
Kamerman, Sheila. 1980. "Maternity and Parental Benefits and Leaves: An International Review." *Impact on Policy Series Monograph,* New York: Columbia University.
Kamerman, Sheila, and Alfred J. Kahn. 1981. *Child Care, Family Benefits and Working Parents: A Study in Comparative Policy.* New York: Columbia University Press.
Kamerman, Sheila, Alfred J. Kahn, and Paul Kingston. 1983. *Maternity Policies and Working Women.* New York: Columbia University Press.
Kamerman, Sheila, and Alfred J. Kahn. 1983. *Income Transfers for Families With Children: An Eight-Country Study* . Philadelphia: Temple University Press.
Kamerman, Sheila B. and Alfred J. Kahn. 1991a. *Child Care, Parental Leave, and the Under 3s: Policy Innovation in Europe.* New York: Auburn House
Kamerman, Sheila, and Alfred J. Kahn. 1991b. "Government Expenditures for Children and Their Families in Advanced Industrialized Countries, 1960-1985. Innocenti Occasional Papers: Economic Policy Series No. 20.
Kamerman, Sheila B. 2000. "Early Childhood Education and Care: An Overview Of Developments in the OECD Countries." *International Journal of Educational Research.* 33:7-29.
Katz, Richard S. 2002. "Political Data in 2001". *European Journal of Political Research.* 41(7/8).
Katz, Richard S. 2003. "Political Data in 2002". *European Journal of Political Research.* 42(7/8).
Kenworthy, Lane. 2003. "Quantitative Indicators of Corporatism" *International Journal of Sociology.* 33(3):10-44.
Kreyenfeld, Michaels and Karsten Hank. 2000. "Does the Availability of Childcare Influence the Employment of Mothers? Findings from Western Germany." *Population Research and Policy* Review 19 (4) 317-337.
MZES/Eurodata. 2002. *European Family Policy Database.* Available for Order Online at (http://www.mzes.uni-mannheim.de/fs_daten_e.html)
O'Connor, Julia S., Ann Shola Orloff, and Sheila Shaver. 1999. *States, Markets, Families: Gender, Liberalism, and Social Policy in Australia, Canada, Great Britain, and the United States.* Cambridge: Cambridge University Press.
OECD. 1974. *Educational Statistics Yearbook, Vol. 1: International Tables.* Paris: OECD.
OECD. 1975. *Educational Statistics Yearbook, Vol. 2: Country Tables.* Paris: OECD
OECD. 1981. *Educational Statistics in OECD Countries.* Paris: OECD.
OECD. 1982. *Employment in the Public Sector.* Paris: OECD.
OECD. 1984a. *Tax Expenditures: A Review of the Issues and Country Practices.* Paris: OECD.
OECD. 1984b. "Social Expenditure: Erosion or Evolution" *OECD Observer* 126: 3-6.

OECD. 1989, 1990, 1993a. *Education in OECD Countries: A Compendium of Statistical Information 86-87, 87-88, 88-89 and 89-90.* Paris: OECD.
OECD. 1993b. *Private Pay for Public Work: Performance-related Pay for Public Sector Managers.* Paris: OECD.
OECD. 1994a. *Women and Structural Change: New Perspectives.* Paris: OECD.
OECD. 1994b. *Educational Statistics in OECD Countries.* Social Policy Studies: No. 12 Paris: OECD.
OECD. 1999. *Labour Force Statistics Database: 1978-1999.* Paris: OECD. Available online at: (www.sourceoecd.org)
OECD. 2002. *Economic Outlook Database. Paris: OECD* Available online at: (www.sourceoecd.org)
OECD 2004. *Economic Outlook Database. Paris: OECD* Available online at: (www.sourceoecd.org)
OECD 2009. *Annual Labour Force Statistics Summary Tables.* Available online at: (www.stats.oecd.org).
OECD. 2009. *Employment and Labour Force Statistics Database*. Available online at: (www.stats.oecd.org).
OECD. 2009. *Incidence of Involuntary Part-Time Employment Workers Dataset.* Available online at: (www.stats.oecd.org).
OECD. 2009. *Earnings Database.* Paris: OECD. Available online at: (www.stats.oecd.org).
OECD. 2009. *Family Database*. Paris: OECD. Available online at:
(*www.oecd.org/els/social/family/database)*
OECD. 2009. *Taxation Database.* Paris: OECD. Available online at: (www.stats.oecd.org).
OECD 2009. *Economic Outlook Database. Paris: OECD* Available online at: (www.stats.oecd.org)
Olmsted, Patricia P and David Weikart. 1989. *How Nations Serve Young Children: Profiles of Child Care and Education in 14 Countries.* Michigan: The High/Scope Press
Randall, Vicky. 2000. Childcare Policy in the European States: Limits to Convergence." *Journal of European Public Policy* 7 (3) 346-68.
Ronsen, Marit and Marianne Sundstrom. 2002. "Family Policy and after-Birth Employment Among New Mothers: A Comparison of Finland, Norway and Sweden," *European Journal of Population* 18(2) 121-152.
UN Department of Economic and Social Affairs. 1995-1998. *Demographic Yearbook No's 47-50.* New York: United Nations.
UNESCO. 1960-2008. *Statistical Yearbook*s, Paris.
UNECE Statistical Division Database. *Gender Pay Gap by Level of Education, Country and Year.* New York: United Nations. Available online at: (http://w3.unece.org/pxweb/DATABASE/Stat/30-GE/03-WorkAndeconomy/03-WorkAndeconomy.asp)
U.S. Department of Education. 1999. "Preprimary education enrollment." *Statistics in Brief: National Center for Education Statistics* U.S. Department of Education.
U.S. Department of Education. December 1995. *Project Head Start Statistical Fact Sheet*
Van Biezen, Ingrid and Richard S. Katz. 2004. "Political Data in 2003". *European Journal of Political Research.* 43(7/8).

Van Biezen, Ingrid and Richard S. Katz. 2005. "Political Data in 2004". *European Journal of Political Research.* 44(7/8).
Van Biezen, Ingrid and Richard S. Katz. 2006. "Political Data in 2005". *European Journal of Political Research.* 45(7/8).
Varley, Rita. 1986. "The Government Household Transfer Data Base." *OECD Department of Economics and Statistics Working Papers No. 36.* Paris: OECD
Visser, Jesse. 2009. *ICTWSS: Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts in 34 countries between 1960 and 2008.* Available online at: (http://www.uva-aias.net/208).
Wennemo, Irene. 1994. *Sharing the Costs of Children: Studies on the Development Of Family Support in the OECD Countries.* Swedish Institute for Social Research No. 25.
West, Jerry. 1995. "Child Care and Early Education Program Participation of Infants, Toddlers, and Preschoolers." *Statistics in Brief: National Center for Education Statistics.* U.S. Department of Education.

Appendix 2: Assessing the Lag Structure for Various Family Policy Indexes

	-2 Log Likelihood	# of Parms.	# of Residual Parms.	AIC	BIC	-2 Log Likelihood	# of Parms.	# of Residual Parms.	AIC	BIC	-2 Log Likelihood	# of Parms.	# of Residual Parms.	AIC	BIC	-2 Log Likelihood	# of Parms.	# of Residual Parms.	AIC	BIC
	Panel A: Male-Female Wage Gap																			
Lag	Parental Leave Index					Child Care Ages 0-2 Index					C.C. Ages 3-School Age Index					Family Allowances, Benefits, Credits Index				
No Lag	-1909.61	3	1	3825.23	3838.31	-1662.86	3	1	3331.72	3344.57	-1846.46	3	1	3698.93	3711.89	-1983.08	3	1	3972.17	3985.17
One-Year Lag	-1918.98	3	1	3843.96	3857.06	-1671.87	3	1	3349.74	3362.61	-1852.82	3	1	3711.64	3724.61	-1988.80	3	1	3983.59	3996.61
Two-Year Lag	-1928.93	3	1	3863.86	3876.97	-1680.04	3	1	3366.09	3378.97	-1858.10	3	1	3722.20	3735.20	-1994.51	3	1	3995.03	4008.06
Three-Year Lag	-1935.99	3	1	3877.98	3891.10	-1684.54	3	1	3375.07	3387.97	-1860.27	3	1	3726.53	3739.54	-1997.29	3	1	4000.59	4013.63
Four-Year Lag	-1901.36	3	1	3808.73	3821.80	-1651.93	3	1	3309.86	3322.70	-1823.59	3	1	3653.17	3666.12	-1958.41	3	1	3922.81	3935.81
Five-Year Lag	**-1866.23**	**3**	**1**	**3738.46**	**3751.47**	**-1619.94**	**3**	**1**	**3245.87**	**3258.66**	**-1787.14**	**3**	**1**	**3580.28**	**3593.18**	**-1920.24**	**3**	**1**	**3846.47**	**3859.41**
	Panel B: Size-Standardized Index of Dissimilarity																			
Lag	Parental Leave Index					Child Care Ages 0-2 Index					C.C. Ages 3-School Age Index					Family Allowances, Benefits, Credits Index				
No Lag	-217.02	3	1	440.04	446.87	-209.02	3	1	424.05	430.79	-209.85	3	1	425.70	432.49	**-214.20**	**3**	**1**	**434.40**	**441.19**
One-Year Lag	**-216.15**	**3**	**1**	**438.30**	**445.13**	**-206.42**	**3**	**1**	**418.85**	**425.55**	**-207.20**	**3**	**1**	**420.41**	**427.15**	-214.90	3	1	435.80	442.59
Two-Year Lag	-250.01	3	1	506.02	513.31	-236.17	3	1	478.35	485.50	-241.07	3	1	488.14	495.36	-248.82	3	1	503.64	510.89
Three-Year Lag	-249.79	3	1	505.57	512.86	-233.81	3	1	473.63	480.73	-239.16	3	1	484.33	491.51	-243.67	3	1	493.34	500.52
Four-Year Lag	-249.59	3	1	505.18	512.47	-233.94	3	1	473.87	480.98	-239.63	3	1	485.27	492.45	-243.69	3	1	493.38	500.56
Five-Year Lag	-248.57	3	1	503.14	510.44	-236.44	3	1	478.88	486.03	-242.20	3	1	490.41	497.63	-249.04	3	1	504.07	511.33

Note: Smaller values of AIC and BIC indicate a better fitting model; models in bold are the selected models. Estimation Method is ML.