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ABSTRACT   *We examine the consequences of welfare state strategies on women's economic outcomes in ten countries. These strategies are 1) the primary caregiver strategy, focused on valuing women's care work; 2) the primary earner strategy, focused on encouraging women's employment; 3) the choice strategy, which provides support for women's employment or caregiving for young children; and 4) the earner-carer strategy, focused on helping men and women balance both care and employment. We analyze the effects of motherhood and marital status on employment rates, annual earnings, and poverty rates. Our study suggests that the strategy taken by the earner-carer strategy may be most effective at increasing equality for both married and single mothers.*

The impressive development of work-family reconciliation policies across Europe suggests a substantial shift in how women's roles – as caregivers and employed workers – are conceptualized. Indeed, most mothers have now entered the labor market. Yet women who are mothers continue to face substantial penalties in the workplace in terms of employment and earnings, and significant challenges in

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Michelle J. Budig is an Associate Professor of Sociology and the Associate Director of the Social and Demographic Research Institute at the University of Massachusetts. Her research interests include gender inequality in labor markets, work and family conflict, social inequality, nonstandard employment arrangements, and social policy. Her recent publications investigate gender differences in factors leading to self-employment participation, feminist theory on the family, the relationship between women's employment and fertility histories, and earnings penalties associated with caring labor and motherhood. Her current research examines motherhood wage penalties in a comparative perspective, racial/ethnic discrepancies in the effects of human capital on wages, and racial/ethnic differences in the rising trends of childlessness and one-child families.

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ensuring adequate care for their families. Mothers' poverty rates also vary dramatically cross-nationally.

We focus on welfare state strategies regarding work-family reconciliation policies. Reconciliation policies include parental and family leave, subsidized childcare, and flexible work-time policies (Gornick and Meyers 2003, Hantrais 2000). Theoretically, reconciliation policies should give parents greater economic opportunities, while also ensuring adequate care for families. However, these policies draw upon different assumptions about women's roles in society. For example, long family leaves may weaken mothers' employment continuity and earnings (Morgan and Zippel 2003). On the other hand, childcare policies or policies that create incentives for men to take leave may lead to greater equality (Gornick and Meyers 2003). Placing support for caregiving within the context of other policies – for example, whether high-quality childcare exists alongside family leave – can help make sense of how motherhood affects women's economic opportunities.

We consider how variations in welfare state reconciliation strategies have led to different outcomes regarding employment, earnings, and poverty for mothers relative to women without children in the home. We identify four distinct strategies of care and employment and use data for ten countries from the Luxembourg Income Study (LIS) to examine the associations between these strategies and our outcomes.

Welfare State Regimes, Employment, and Caregiving

Welfare state restructuring reflects not only a response to globalization, increased immigration, and the weakening of labor (Rothstein and Steinmo 2002, Castles 2004) – but also important changes in the "gender order" (Fraser 1994, Gornick and Meyers 2004). Historically, the dominant vision of the Western welfare state during the twentieth century was the "male breadwinner/female caregiver" or "family wage" strategy (Fraser 1994, Sainsbury 1999). Policies presumed families to include a man earning enough to support a family, a woman providing care within the home, and their children. The welfare state intervened to replace the male breadwinner's wage in case of death, unemployment, disability, sickness, or old age, and occasionally to support women's caregiving within the home (Fraser 1994). Yet currently most jobs could not support an entire family, and most women are now employed (Crompton 1999). As families diversify to include more single-parent or non-heterosexual forms, the male breadwinner strategy is inadequate.

What does the "new" welfare state look like? How do states support families with children where both parents are likely to be employed? Recent welfare state scholarship emphasizes how nations cluster in terms of policy creation and outcomes (Esping-Andersen 1990, 1999). Esping-Andersen's (1990) welfare state regime typology is the predominant approach, dividing countries between the market-oriented *Liberal* regime, the status- and family-oriented *Conservative* regimes, and the redistributive *Social Democratic* regime. However, this model neglects gendered modes of caregiving and employment (Lewis and Ostner 1991, Orloff 1993). For example, Orloff (1993) argues that models must attend to women's access to paid employment and capacity to form and maintain autonomous households. Reflecting these critiques, Esping-Andersen's (1999) recent work also examines where caring responsibilities for households are lessened by state or market provision of care and

where policy encourages household responsibility for care, arguing that his regimes remain valid (with a few minor exceptions).[1]

Drawing on Nancy Fraser's (1994) conceptualization of welfare state support for care, as well as Esping-Andersen's regime approach, we identify four major strategies: the Conservative primary caregiver/secondary earner strategy (where women are treated primarily as carers, and secondarily as earners), the Liberal primary earner/secondary carer strategy (where women are treated primarily as earners, and secondarily as carers), the Conservative choice model (where women are treated as choosing whether they are primarily earners or caregivers), and the Social Democratic earner-carer strategy (where women are treated as equally involved in both earning and caring).

The *primary caregiver/secondary earner strategy* (henceforth, primary caregiver) remains closest to the family wage model. This strategy explicitly values and rewards women for providing care, recognizing gender differences in its provision (Sainsbury 1999). Rather than encouraging women's full-time employment, the primary caregiver strategy attempts to compensate women for the time and effort they spend on care. This strategy (exemplified here by Austria, Germany, Luxembourg, and the Netherlands) is characterized by fairly generous caregiver and family allowances, as well as policies that help women provide in-home care, such as parental leave. Part-time employment is viewed as an ideal strategy for women who wish to combine employment and care. This strategy emphasizes women's caregiving within the family as the primary site for the provision of care (Fraser 1994). For example, Germany provides very generous parental leave policies, but less state provision of childcare, particularly for children under three (Gornick and Meyers 2003). Germany also provides care allowances and subsidizes pension contributions for up to three years of care for young children (for part-time workers, for up to ten years of care for children) (Seeleib-Kaiser 2004). Such programs recognize the carework done by women without challenging traditional gender norms.

The *primary earner/secondary carer strategy* (henceforth, primary earner) views both men and women as invested in employment, but provides little support for care (Fraser 1994). State policies work to engage women in the paid labor force, without significant state provision of care. Policies include "employment equality policies and the tax-encouraged market provision of services" (Orloff 2002: 16). Primary earner nations (exemplified here by Canada, the United States, and the United Kingdom), rely heavily on marketized care in addition to women's unpaid care. While this strategy provides women with opportunities for full-time employment and higher earnings, the net benefit to mothers is questionable because it does not ameliorate the privatized and feminized costs of caring. For example, the United States has passed legislation that equalizes women's opportunities in full-time positions in the workplace; however, the state does little to support care, and primarily expects families to rely on market provision of care, such as family daycare or childcare centers, or private provision from neighbors, friends, or grandparents, or from parents who stagger their working shifts to cover childcare.

The *choice strategy* values and rewards women for providing care while encouraging women to engage in employment. Policies provide substantial support for women's full-time employment, such as high-quality childcare, while also providing aid for women's caregiving, for example, through generous parental leave

and caregiver allowances, and support for part-time employment. The countries falling into this mixed regime (France and Belgium) have ambivalent approaches to gender and women's roles, not fully challenging women's traditional roles within the family (Morgan 2002). For example, in principle, French women are given the support to achieve a career and provide care within their families, with more emphasis on care when their children are small (Laufer 1998). In France, high-quality state-provided childcare is widely available, along with generous parental leave and homecare allowances that support parental care for two or more children. These policies encourage women's balancing of employment and caregiving, rather than promoting men's equal role in caring.

Finally, the *earner-carer* strategy suggests a vision in which both women and men balance carework and employment. States encourage men's participation in caregiving and women's participation in employment, and require social institutions to adjust to meet their needs. The earner-carer regime (exemplified here by Sweden) can be characterized by generous support for care both within and outside of the home and shorter working weeks. Both men and women are encouraged to take parental leave, and high-quality childcare outside of the home is available (Gornick and Meyers 2003). Income transfers help families to balance care and employment. The earner-carer strategy attempts to break down gendered norms of care and employment (Fraser 1994, Crompton 1999, Gornick and Meyers 2003). For example, Sweden encourages women's employment through substantial state-provided care support, while also encouraging men's caregiving through paternity leave that only men can take (Gornick and Meyers 2003). Despite these efforts, gendered differences remain (Ellingsaeter 1999, Sainsbury 1999). However, as Sainsbury (1999: 196) notes, "The lack of far-reaching change ... should not blind us to the merits of policy construction which integrates market employment and care work in the home and simultaneously grants equal entitlement to men and women."

Theoretical Expectations

There is substantial variation regarding employment rates, earnings, and poverty rates for mothers as compared to non-mothers cross-nationally, as well as variation in these outcomes by marital status. We examine how different welfare state strategies are related to outcomes for mothers, relative to non-mothers, regarding employment, earnings, and poverty for ten countries. These cross-national differences may result from multiple factors, including cultural differences, women's preferences for employment, or unemployment rates within nations. For example, women in Germany might – regardless of the policy context – have a lower preference for full-time employment than women in Canada. To minimize the effects of contextual variations, we focus on differences between mothers and women without children within each country. The patterns of women without children should indicate baseline preferences and opportunities for employment, and the degree to which mothers differ should capture the impact of institutions and policies on women's ability to balance employment and family responsibilities.

Research suggests that reconciliation policies have positive effects on women's employment overall (Gornick and Meyers 2003, Mandel and Semyonov 2003).

Pettit and Hook (2005) show that high levels of childcare have a positive effect on women's employment, but generous maternity leave (measured as weeks of leave squared) has a negative effect. This outcome suggests that lengthy paid leave reduces the labor force attachment of mothers, while shorter paid leave more effectively helps mothers maintain labor force attachment. Given the variation in the strategies, we expect to see variation in employment outcomes. We should find higher levels of part-time employment for mothers (relative to childless women), and lower levels of full-time employment in the primary caregiver countries. In the primary earner, choice and earner-carer strategies we should see higher levels of full-time employment for mothers, which may be reduced by the lack of employment support in the primary earner model and the emphasis on women's choice in the choice model, particularly for mothers of very young children. We expect the earner-carer regime to be most effective at equalizing differences in full-time employment rates between mothers and non-mothers, by providing the most direct support for employed parents.

Mothers' earnings relative to non-mothers' also vary substantially cross-nationally (Waldfogel 1997, 1998, Harkness and Waldfogel 2003; Sigle-Rushton and Waldfogel 2006), although much research examines differences in earnings by gender (Mandel and Semyonov 2003; Huber *et al.* 2004). Previous research has argued that family policies may shape mothers' earnings relative to non-mothers (Waldfogel 1997, 1998, Budig and England 2001), by increasing mothers' share of earnings (Gornick and Meyers 2003) and decreasing gender wage gaps (Mandel and Semyonov 2003). We expect that the primary caregiver strategy may be least successful at limiting the motherhood earnings penalty. Given generous parental leave options, mothers may spend more time out of the workforce, losing experience and seniority and thus incurring a higher wage penalty for motherhood. We expect the primary earner strategy will be more successful at limiting mothers' wage penalties. However, without adequate care provision, mothers – particularly single mothers – should continue to incur penalties. We expect the choice and earner-carer strategies, with their greater employment supports, to be most effective at equalizing differences in earnings between mothers and women without children.

Previous research also explores cross-national gender gaps in poverty (Casper *et al.* 1994, Huber *et al.* 2004), and differences between mothers and non-mothers (Christopher 2002, Misra and Moller 2004). Scholars show that transfers, employment and earnings play an important role in reducing poverty, particularly for single mothers. We expect poverty rates for mothers relative to non-mothers to be highest in the primary earner countries, since among these liberal countries, transfers to families with children are fairly low, while mothers receive inadequate employment support. We expect poverty rates of single mothers relative to non-mothers to be high in the primary caregiver countries. While these countries provide more generous transfers to families with children, the lack of a second income may hurt these families. Finally, we expect poverty to be relatively low in the choice and earner-carer countries. These nations provide effective tax and transfer programs for families with children, and effective employment support for mothers. However, we expect poverty rates for mothers relative to childless women to be somewhat higher in the choice regime, given lower levels of employment for mothers of young children.

Measuring Equality

We use the Luxembourg Income Study to develop our measures of employment, earnings and poverty rates. The LIS database provides the best cross-national data for comparing income across wealthy countries, harmonizing data from a number of national surveys to ensure comparability. We utilize data from Waves IV and V, which represent the mid-1990s and early 2000s. Given our interests and the data available, we confine our attention to Austria (1997), Belgium (1997), Canada (2000), France (1994), Germany (2000), Luxembourg (2000), the Netherlands (1999), Sweden (1995),[2] the United Kingdom (1999), and the United States (2000).

We confine our sample to working-age adults between 25 and 49 to limit the number of students, pensioners and empty-nesters in the sample. We further limit our sample to female heads of households and to female partners/wives of male heads of households. We do this because the LIS identifies children living in households in relationship to the head. In this way we link children to the woman most likely mothering them while excluding other adult women in households from the analysis. It is possible that some mothers are counted as childless simply because they no longer have children living in the home. This bias is likely to lead to our underestimating the effect of motherhood.

We calculate employment rates separately for full- and part-time employment, defining full-time as more than 30 hours of work per week. We calculate wage rates separately for full- and part-time workers by using annual earnings.[3] In all earnings analyses we top-code annual earnings at ten times the median and bottom code at 1 per cent of mean annual earnings. Like most comparative researchers, we measure poverty rates relatively to capture the extent that families fall below 50 per cent of their countries' median income (Casper *et al.* 1994, Moller *et al.* 2003). We examine only post-tax and transfer poverty rates, and measure them as the percentage of mothers and non-mothers in households with disposable incomes (market income, governmental transfers, taxes) below 50 per cent of median income for all households.[4]

Marital status and parenthood status should play crucial roles in explaining women's employment, earnings, and likelihood of poverty. We are interested in how reconciliation policies affect the experiences of mothers, relative to other women, and how the experiences of single and married mothers differ. We measure marital status as 1 = currently married or cohabiting, and 0 as all others (including single, divorced or never married). Similarly, we measure motherhood = 1 if the respondent has any children under 18 living in the home. We conducted sensitivity analyses for the effects of motherhood on all dependent variables using additional measures of motherhood: two dummy variables to measure motherhood for mothers of young children (less than 6) and mothers with older children (6–17); and a measure of the number of children in the household.[5] This allowed us to examine how the penalties vary by age of child and the number of children in the home. Our findings are robust across these different specifications of motherhood; thus we present findings for the most parsimonious measure of motherhood. To examine whether motherhood affects the outcomes differently for married and single women, we also include interactions between motherhood and marital status.

Models control for age, marital status, educational attainment, and part-time employment status. Age is measured in years. Educational attainment is measured with a set of categorical variables based on the international standard classification of education from UNESCO. LIS has harmonized this variable across countries to create three educational categories: low (no education through lower secondary education), medium (upper secondary education through vocational post-secondary education) and high (university/college education through post-doctoral education).[6] We use low education as the reference category and include dummies for medium and high education in all regression models.

Findings

Employment Rates

Table 1 presents the numbers of observations for each country, as well as the percentages of mothers and non-mothers in each country who are employed full-time, part-time, and not employed. In every nation, mothers are less likely to be employed full-time and more likely to be employed part-time than non-mothers. Part-time employment is a central strategy for mothers in a wide variety of countries, although least so in the United States.

In Figure 1 and Table 2, we look more closely at the effect of motherhood on the odds of women's employment, controlling for age, marital status and education. To predict the effect of motherhood on employment rates, we used multinomial logistic regression.[7] These models predict the likelihood of full-time employment and

Table 1. Women's employment rates, by presence of children at home

	Number of observations	Full-time employment		Part-time employment		Not employed	
		No minor children	1 + minor children	No minor children	1 + minor children	No minor children	1 + minor children
Primary caregiver							
Austria	1,204	68.6%	39.0%	14.0%	28.1%	17.4%	32.9%
Germany	4,822	70.3%	30.5%	15.1%	30.7%	14.6%	38.8%
Luxembourg	1,151	71.9%	30.6%	12.6%	28.7%	15.5%	40.7%
Netherlands	2,491	63.4%	17.1%	21.1%	52.9%	15.5%	30.0%
Primary earner							
Canada	12,745	62.6%	45.7%	11.0%	19.8%	26.4%	34.5%
UK	10,105	70.7%	31.2%	12.4%	33.4%	16.9%	35.4%
US	21,064	79.2%	61.5%	6.1%	14.3%	14.7%	24.2%
Choice							
Belgium	1,959	48.3%	38.1%	14.1%	26.7%	37.6%	35.2%
France	5,286	59.4%	46.1%	18.3%	20.8%	22.3%	33.1%
Earner-carer							
Sweden	5,924	47.9%	37.5%	35.6%	46.0%	16.5%	16.5%

Notes: Person-weights are used in all estimations.

Figure 1. Effect of motherhood (in % change) on the odds of full-time employment relative to part-time and non-employment, controlling for age, education and marital status
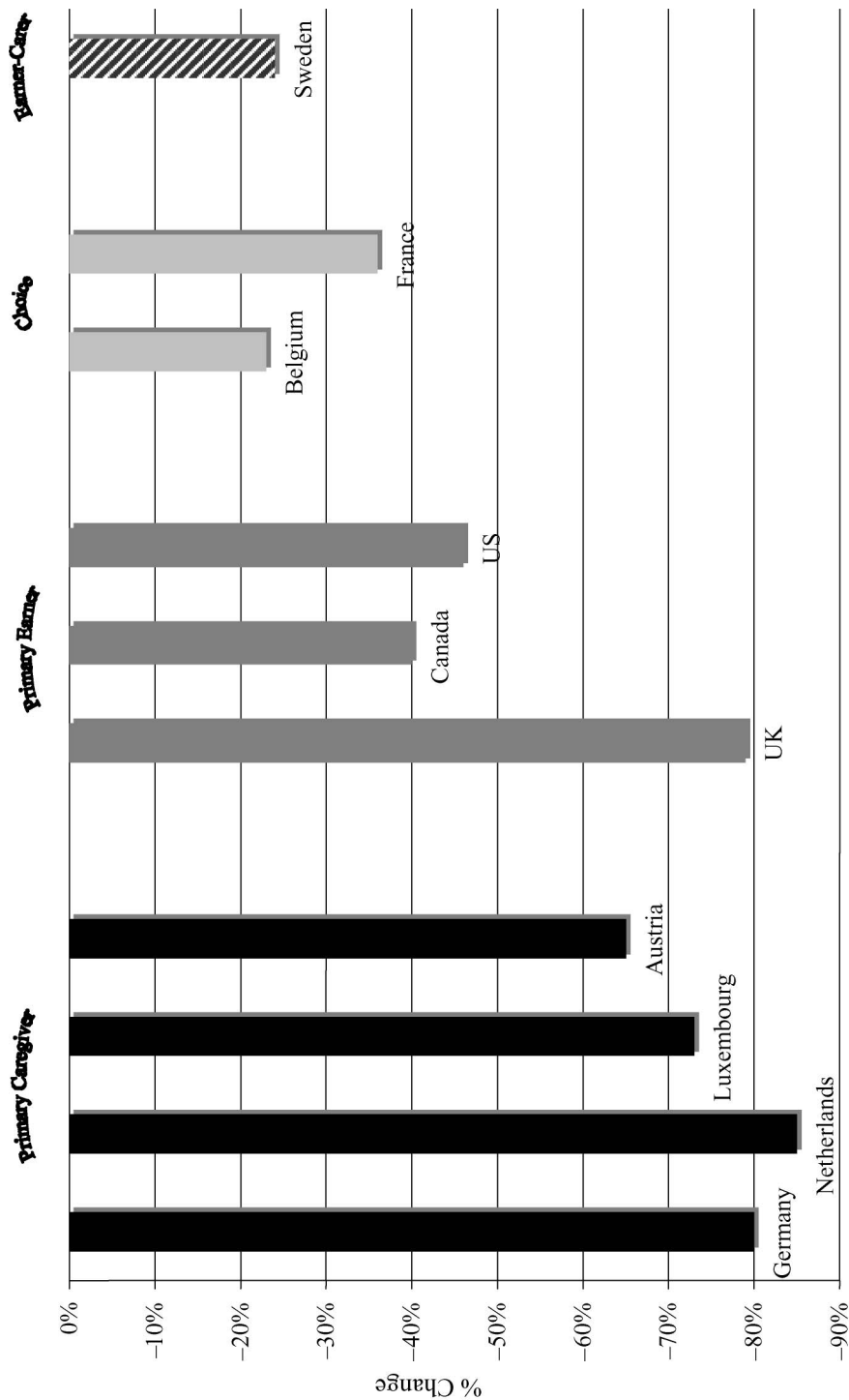
Table 2. Relative risk ratios, robust standard errors, and percentage change in the odds of full-time employment from multinomial logistic regression models predicting the effect of motherhood on the odds of employment, by marital and part-time status

	Employed full-time			Employed part-time
	Main effect of motherhood Relative risk ratio (Std. Err.)	*Effect of motherhood by marital status*		*Main effect of motherhood* Relative risk ratio (Std. Err.)
		Single % change in odds of full-time employment	Married % change in odds of full-time employment	
Primary caregiver				
Germany	0.199			0.841
	(0.022)***	−80.1%***	−80.1%***	(0.111)
Netherlands	0.148			1.171
	(0.023)***	−85.2%***	−85.2%***	(0.175)
Luxembourg	0.273			1.048
	(0.054)***	−72.7%***	−72.7%***	(0.244)
Austria	0.352			1.140
	(0.066)***	−64.8%***	−64.8%***	(0.270)
Primary earner				
UK	0.209			1.287
	(0.012)***	−83.0%***	−78.0%**	(0.095)***
Canada	0.604			1.370
	(0.037)***	−39.6%***	−39.6%***	(0.120)***
US	0.540			1.508
	(0.024)***	−27.2%***	−43%***	(0.110)***
Choice				
Belgium	0.770			1.457
	(0.104)*	−23.0%*	−23.0%*	(0.255)**
France	0.639			0.922
	(0.051)***	−36.1%***	−36.1%***	(0.108)
Earner-carer				
Sweden	0.757			1.419
	(0.076)***	−24.3%***	−24.3%***	(0.169)***

***p < .001, two-tailed test; **p < .01, two-tailed test; *p < .05, two-tailed test.
Note: We test the impact of motherhood on employment. For full-time, we also add an interaction term between married and motherhood status. All models control for age, education, marital status, and work status and utilize sample weights.

part-time employment *relative to non-employment*. We expect motherhood would decrease the likelihood of employment in most countries.[8] However, the earner-carer strategy may provide additional support for working mothers, which might limit the employment-dampening effects of motherhood.

Table 2 presents the relative risk ratios, robust standard errors and percentage change in the odds of full-time employment from the multinomial logistic regressions, while Figure 1 summarizes the effects of motherhood (as percentages) on the odds of full-time employment, relative to non-employment.[9] As Figure 1 indicates, even with controls for age, education and marital status, mothers are less likely to be employed full-time in all countries. Motherhood reduces the odds of full-time employment by 24 per cent in Sweden as compared to 85 per cent in the

Netherlands – a very wide range. As we would expect, motherhood reduces the odds of full-time employment the most in the primary caregiver countries (and in the United Kingdom). As expected, Sweden is most effective in minimizing the negative impact of motherhood on full-time employment participation, although the "choice" model also appears to limit the effect of motherhood. Yet these effects compare the relative odds of full-time employment versus non-employment between mothers and women without children; all women – childless women as well as mothers – in the choice and earner-carer countries are less likely to be employed full-time than women in the primary earner countries, suggesting stronger norms for full-time employment for women in Canada and the United States.

Table 2 also presents the effects of motherhood on employment by marital status. We test for statistical interactions between marital/cohabiting status and motherhood. For ease of interpretation, we have transformed the coefficients for main effects and interactions into the percentage change in the odds of being employed full-time and present these results separately for single and married women. Where the interaction between single and married was not significant, the percentage change columns have the same results for single and married women. Results show that in most countries motherhood has similar effects on employment for single and married women. However, differences appear in two countries: the United States and the United Kingdom. In the United Kingdom, motherhood reduces the odds of employment for single mothers more than for married mothers, perhaps due to the presence of transfer payments directed at single mothers. In the United States, motherhood decreases the odds of full-time employment by 43 per cent, relative to non-employment, for married women, but only by 27 per cent for single women, reflecting the fact that welfare programs directed at single mothers in the United States encourage employment. In results not shown, we examined whether these effects of motherhood on full-time employment varied by the age of the youngest child in the home. In every country, the negative effect of children on women's full-time employment was largest when the youngest child was a preschooler.[10]

Table 2 also shows that motherhood increases the chance of part-time employment, relative to non-employment, particularly in the primary earner countries, but also in Belgium and Sweden. This counterintuitive result must be interpreted cautiously within the context of the model. As the results for full-time employment showed, motherhood pulls women away from full-time employment and thereby increases non-employment in all countries (see also Bardasi and Gornick 2000). Within this context, motherhood also increases the odds of working part-time in some countries: by 29 to 51 per cent in the primary earner countries and by 42 per cent in Sweden. In results not shown, we found that preschool children reduce the odds of part-time employment in France (relative to non-employment), while they increase the odds of part-time employment only in Canada and the US. In contrast, school-aged children increase the odds of part-time employment in the Netherlands, Canada, the UK, the US, Belgium, and Sweden.

Thus, while motherhood depresses employment participation generally, there is some variation across strategies. Given that the primary caregiver strategy does not emphasize women's full-time employment, we are not surprised that motherhood strongly decreases the odds of women's full-time employment in these nations. While the primary earner strategy does emphasize employment, it does not offer the

services to support combining employment and caregiving. Mothers, relative to women without children, do best at full-time employment in the earner-carer and choice strategies, which encourage women's employment through substantial employment supports such as high-quality childcare.

Earnings

Table 3 presents the numbers of observations with valid earnings for each country, as well as a ratio of mothers' wage rates to childless women's wage rates. A value of 1 represents perfect equality, values less than 1 indicate relatively lower rates for mothers, and values greater than 1 indicate relatively higher rates for mothers. In every nation, mothers' full-time average earnings are lower than childless women's average earnings. These ratios are smallest among the choice countries, where wage differences, without controlling for other factors, appear to be fairly small. Possibly due to selectivity issues among women who work part-time, mothers appear to earn slightly more than women without children in Belgium, Canada, and the United States.

Table 4 presents the coefficient and standard errors for Heckman two-stage regressions, that show the partial effect of motherhood on annual earnings, first among all women, then separately by marital status.[11] We regress the natural log of annual earnings on motherhood status, marital status, age, educational attainment and part-time status.[12] Using logged earnings enables us to make comparisons across different currencies, minimize the effect of outliers and interpret coefficients in a straightforward manner: multiplying the coefficient by 100 gives us the percentage change in earnings, given a 1-unit increase in the independent variable. Figure 2 shows this transformation of motherhood coefficients on annual earnings from the main effects model. In showing the effects of motherhood separately by marital

Table 3. Ratio of mothers' annual earnings to annual earnings of women without a minor child at home

	# of observations w/valid earnings	Full-time	Part-time
Primary caregiver			
Germany	3,491	0.816	0.842
Netherlands	1,788	0.920	0.923
Luxembourg	748	0.805	0.774
Austria	648	0.841	0.782
Primary earner			
UK	6,641	0.870	0.943
Canada	10,074	0.902	1.014
US	16,701	0.839	1.174
Choice			
Belgium	1,107	0.981	1.029
France	3,682	0.966	0.959
Earner-carer			
Sweden	5,109	0.811	0.805

Notes: Person-weights are used in all estimations.

Table 4. Effect of motherhood on the natural log of annual earnings

|	Main effect of motherhood	Effect of motherhood by marital status	
	All women Coefficient (Std. Error)	*Single* % change in earnings	*Married* % change in earnings
Primary caregiver			
Germany	−0.276 (0.033)***	n.s.	−25.3%***
Netherlands	−0.238 (0.047)***	−23.8%***	−23.8%***
Luxembourg	−0.188 (0.067)***	n.s.	−27.8%*
Austria	−0.150 (0.057)***	−15.0%***	−15.0%***
Primary earner			
UK	−0.146 (0.022)***	−26.2%***	−11.8%***
Canada	−0.178 (0.023)***	−27.2%***	−39.8%**
US	−0.112 (0.015)***	−24.7%***	−8.5%***
Choice			
Belgium	−0.122 (0.060)*	n.s.	−18.5%**
France	0.019 (0.031)	n.s.	n.s.
Earner-carer			
Sweden	−0.058 (0.077)	n.s.	n.s.

***$p < .001$, two-tailed test; **$p < .01$, two-tailed test; *$p < .05$, two-tailed test.
Note: We test the impact of motherhood on earnings; we then add an interaction term between married and motherhood status. All models control for age, education, marital status, and work status.

status, we make this transformation before presenting the numbers in the table. These models predict the wage penalty for all mothers by marital status, controlling for age, educational attainment and part-time status. We expect that the motherhood penalty should be lowest in the earner-carer and choice strategies, followed by the primary earner strategy.

As Figure 2 and Table 4 indicate, controlling for age, education and part-time employment status, motherhood decreases earnings in every country except France and Sweden. As expected, although there is overlap across strategies, motherhood decreases earnings most strongly in the primary caregiver countries. The negative effects of motherhood on earnings are minimized in the choice and earner-carer strategies, although motherhood negatively impacts married women's earnings in Belgium. In results not shown we examined whether the age of the youngest child affects the size of the motherhood pay penalty. When the youngest child is a preschooler, the wage penalty rises within Austria, Germany, Canada, the US, Belgium and Sweden. Interestingly, it is older children who increase pay penalties in Luxembourg, the Netherlands and the UK.

Figure 2. Effect of motherhood (in % change) on earnings from two-stage Heckman selection regression models, controlling for age, marital status, education and part-time work status
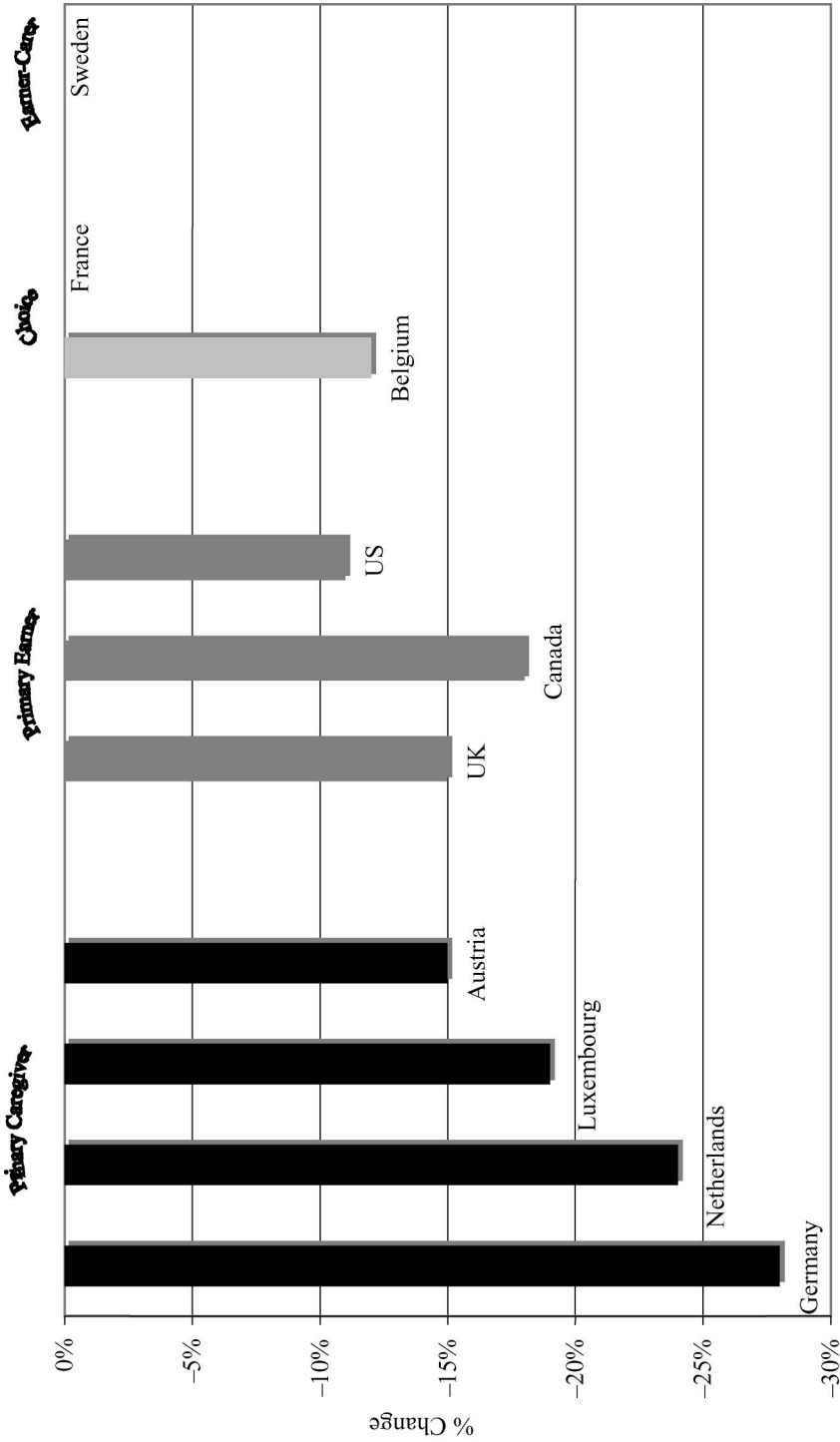
In several countries, the motherhood penalty varies by marital status. In the primary caregiver strategy, wage penalties are higher for married mothers than single mothers, except in Austria. Interestingly, single mothers' earnings are not significantly different from non-mothers' in Germany and Luxembourg, although married mothers suffer a significant penalty. However, in the primary earner strategy, the motherhood wage penalties are higher for single women in the US and the UK, indicating that the lack of work-family reconciliation policies hits single women the hardest. Finally, in the choice and earner-carer countries, we see few differences in earnings by motherhood or marital status, except that married mothers in Belgium pay an 18.5 per cent wage penalty, likely due to a history of employment targeted at single mothers. The care and employment supports provided by the choice and earner-carer strategy address some of the sources of the motherhood wage penalty, particularly for single mothers who particularly require support for their roles as both caregivers and earners.

Poverty

In addition to reconciliation policies, tax and transfer programs also play a major role in limiting poverty, and are highly correlated to the regimes we present. Welfare programs are most generous in the Social Democratic earner-carer countries, somewhat less generous in the Conservative choice and primary caregiver countries, and least generous in the Liberal primary earner countries. Therefore, we expect to see variation across these groups, not only due to the availability of reconciliation policies, but also due to the range of other welfare programs available for families in these nations.

We expect that the likelihood of poverty for mothers should be lowest in the earner-carer and choice strategies, where a combination of employment, support for care within the home, and tax-and-transfer policies should limit poverty for mothers. Poverty may be higher for mothers – particularly single mothers – in the primary caregiver strategy, where employment is a less effective way out of poverty for women, though additional support exists for caregivers and families. Finally, we expect that poverty rates will be particularly high in the primary earner strategy, where there are fewer transfer policies to help mediate the costs of children. Table 5 presents numbers of observations, and poverty rates for women, comparing married mothers, single mothers, married women without children, and single women without children. As Table 5 shows, in most nations mothers are more likely to fall into poverty than women without children. Indeed, married mothers in every nation are more likely to live in poverty than married non-mothers (although these differences are very small for France, Sweden, and the Netherlands), and single mothers in every nation except Sweden and Belgium are more likely to live in poverty than single non-mothers.

In Table 6 and Figure 3, we look more closely at the effect of motherhood on the likelihood of impoverishment among groups of women. Here, we use logistic regression; these models predict the odds of being in poverty for mothers and non-mothers, controlling for age, education and employment status (including two variables for part-time and full-time; not working is the excluded category).[13]

Table 5. Poverty rates by marital and motherhood status

	Number of Observations	Married with 1+ minor child	Single with 1+ minor child	Single with no minor child	Married with no minor child
Primary caregiver					
Germany	4,822	4.5%	26.2%	14.9%	1.7%
Netherlands	2,491	7.1%	26.6%	4.3%	5.7%
Luxembourg	1,042	6.1%	18.2%	5.4%	2.9%
Austria	976	6.6%	26.0%	5.6%	3.9%
Primary earner					
UK	9,029	8.3%	29.4%	9.2%	3.5%
Canada	11,353	9.1%	33.3%	18.2%	5.2%
US	19,316	12.0%	35.1%	15.8%	6.6%
Choice					
Belgium	1,723	5.1%	11.2%	16.5%	3.6%
France	5,286	4.6%	14.0%	8.5%	4.5%
Earner-carer					
Sweden	5,262	1.3%	5.9%	6.1%	1.2%

Notes: Person-weights are used in all estimations.

Table 6 presents the relative risk ratios, the standard errors and percentage change in odds of impoverishment from the logistic regressions.[14] The first column presents the effects of motherhood on the odds of impoverishment, controlling for marriage, age, education and employment status. Figure 3 summarizes these results. The next columns present the results separately by marital status. Here, we report the percentage change in odds of impoverishment for single and married mothers, controlling for age, education and employment status.

The impact of motherhood on poverty is as expected in the primary earner countries, with single mothers particularly hard hit (in the United States, for example, motherhood increases the odds of impoverishment by 111 per cent for single women and 39 per cent for married women). With lower levels of support for care, it is not surprising that motherhood increases the chance of poverty in these nations, particularly for single mothers. Similarly, the impact of motherhood on poverty is as expected in the choice and earner-carer countries. While motherhood does not affect the odds of impoverishment in France or Sweden, controlling for the other factors, it actually reduces these odds in Belgium. Given the generous transfers as well as employment support for single mothers in Belgium, this finding is consistent with our expectations. Clearly, the choice and earner-carer strategies have helped address the family gap in poverty.

However the primary caregiver model is more varied than expected. Motherhood does not have a statistically significant impact on poverty in Germany and Luxembourg (although poverty rates are generally higher in Germany than in Luxembourg; see Table 5). In the Netherlands, motherhood decreases the odds of poverty by 9 per cent for married women, while motherhood increases the odds of poverty 405 per cent for single women. On the other hand, in Austria, motherhood increases the odds of poverty by 463 per cent for single women and 25 per cent for married women. The policy packages in the primary caregiver countries are clearly

Table 6. Relative risk ratios, robust standard errors, and percentage change in the odds of impoverishment from logistic regression models predicting the effect of motherhood on impoverishment, by marital status

| | **Main effect of motherhood** | **Effect of motherhood by marital status** | |
	All women Coefficient (Std. Error)	*Single women* % change in odds of poverty	*Married women* % change in odds of poverty
Primary caregiver			
Germany	1.412		
	(0.261)	n.s.	n.s.
Netherlands	2.775		
	(0.306)**	405.3%***	−9.2%***
Luxembourg	1.944		
	(0.467)	n.s.	n.s.
Austria	2.792		
	(0.472)*	462.9%**	25.0%*
Primary earner			
UK	1.483		
	(0.112)***	80.6%***	19.6%*
Canada	1.556		
	(0.101)***	71.3%***	n.s.
US	1.772		
	(0.065)***	111.3%***	39.3%**
Choice			
Belgium	0.741		
	(0.251)	−57.4%*	n.s.
France	1.052		
	(0.152)	n.s.	n.s.
Earner-carer			
Sweden	0.900		
	(0.250)	n.s.	n.s.

***$p < .001$, two-tailed test; **$p < .01$, two-tailed test; *$p < .05$, two-tailed test.
Note: We test the impact of motherhood on impoverishment; we then add an interaction term between married and motherhood status. All models control for age, education, marital status, and work status, and utilize sample weights.

very varied. In Austria and the Netherlands, there may be contradictory impulses toward encouraging caregiving in traditional families, but lower levels of certainty in addressing the needs of single-parent families. However, this strategy appears too varied to make clear pronouncements about its effects on poverty.

These findings are clarified when considering alternative measures of motherhood (results not shown). We find that single mothers with older children are 87 per cent more likely to live in poverty than single non-mothers in Germany and 358 per cent more likely in Luxembourg. Indeed, we find that single mothers of older children are consistently the most disadvantaged group in the primary caregiver countries, even more so than single mothers of older children in the primary earner countries. Lower levels of attachment to the labor market may then have a continuing impact on poverty rates. Thus, when considering the age of children, the primary caregiver countries show greater homogeneity in terms of the effects of single motherhood on impoverishment. In the primary earner countries, the costs of motherhood are

Figure 3. Effect of motherhood (in % change) on odds of poverty for single (solid column) and married (chequered column) women, controlling for age, education and part-time work status
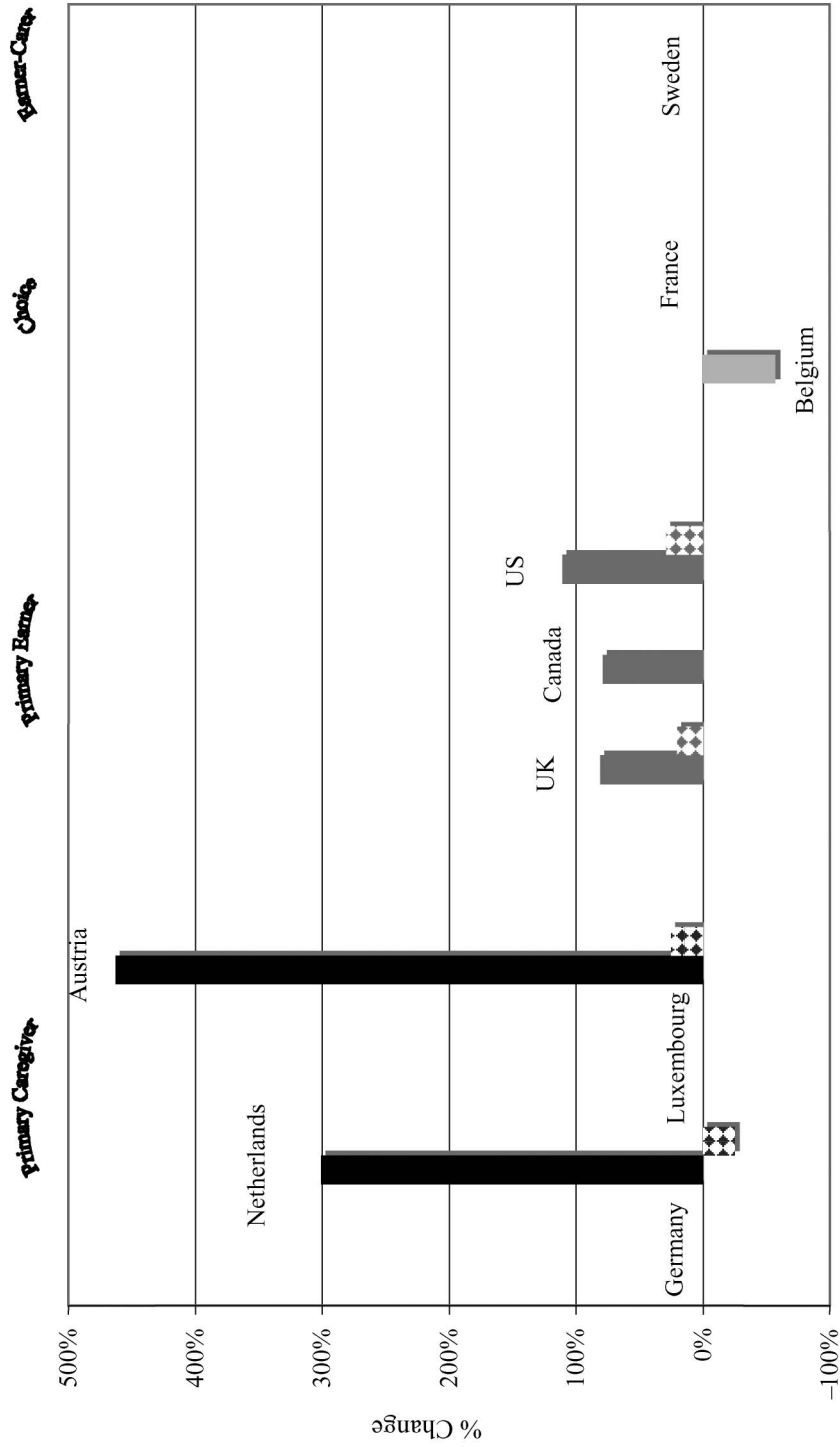
greatest for mothers with preschool children. Motherhood remains non-significant in the choice and earner-carer countries, with the exception of France where mothers of older children have a 54 per cent greater odds of impoverishment.

Conclusions

What combination of welfare state policies and strategies are most likely to lead to equality among women? We began this paper considering strategies that emphasize equalizing women's opportunities in the labor force; strategies that emphasize supporting women's caregiving; strategies that emphasize giving woman a choice between employment and care; and a model meant to equalize women's employment opportunities through support for caring, while also equalizing men's engagement in caring. While our analyses in this paper cannot definitively make the causal link between particular policies and outcomes, they do provide some clues about the effectiveness of these different strategies.

The primary caregiver strategy is associated with the greatest gender inequality in employment, but it does not pretend to emphasize employment. For this reason, it is not surprising that this strategy is associated with larger employment and wage gaps by motherhood. As the results for poverty rates also show, however, this strategy has varied results. The high levels of poverty faced by single mothers in some of these nations suggest that this strategy remains problematic for mothers.

The primary earner strategy also appears to have mixed results. While full-time employment gaps and wage penalties faced by mothers are somewhat lower in these countries, negative effects remain fairly serious – particularly for single mothers. Poverty rates remain high for mothers, particularly so for single mothers. If policies are premised on women mimicking men's employment without increased support for care, married mothers struggle to find balance, while single mothers are simply left out of the equation.

While motherhood decreases the likelihood of full-time employment in the choice countries, earnings are more effectively supported through a variety of employment supports such as high-quality childcare. French mothers do not face wage penalties, and are no more likely to live in poverty. Belgian married mothers continue to face some wage penalty, but single mothers are actually less likely to live in poverty than single childless women. Clearly, in these countries, programs targeted to helping working families with children have helped equalize the situation for mothers.

Across the board, the earner-carer strategy (unfortunately, only represented here by Sweden) is most consistent with the highest levels of equality for all groups, including single mothers. Motherhood is associated with the least negative effects on employment and earnings, while poverty levels are quite low compared to other countries, including for single mothers. By providing substantial care support both outside and inside the home and approaches meant to encourage men's involvement in caregiving, Sweden's policies have begun to address many of the roots of the economic penalties paid by mothers.

Our analysis contributes to larger efforts to understand the effects of work-family policies. However, a range of other policies (tax policies, unemployment, family allowances, child support, single parent allowances, etc.) may be shaping the outcomes we find. Future research should attend to the effects of additional policies

on these outcomes. At the same time, there is significant heterogeneity within each strategy. A more precise approach would more directly examine the effects of specific policies on these different outcomes and is a promising direction for future research.

However, our study suggests that certain policy strategies are more strongly associated with greater equality for mothers as compared to women without children in the home. While all of these strategies continue to be associated with certain inequalities due to motherhood, the earner-carer strategy appears to be most effective at increasing equality, particularly for single mothers. Our findings suggest that true equality among women requires policies that provide better support for both employment and care, and greater incentives for men's caregiving responsibilities.

Acknowledgements

Notes

1. Esping-Andersen (1999) finds differences between continental European countries and southern European countries, and notes that for measures focused on family support France and Belgium may "break ranks" with the other continental countries.
2. The 2000 Swedish data does not offer variables on part-time employment or hours worked.
3. Countries differ in whether gross (before employee tax/social insurance contributions are deducted) or net (post-tax) earnings are available. Both measures are post-employer tax/social insurance contributions, however. In our analyses Canada, Germany, the Netherlands, Sweden, the US and the UK have gross earnings, while Austria, Belgium, France and Luxembourg provide net earnings. If the relative difference in earnings is affected by taxation, comparing results based on net earnings to gross earnings may be problematic. Fortunately, we find our results are robust even when we limit our wage analyses to the six countries providing gross earnings.
4. Disposable income is adjusted for household size based on the square root of the number of persons in the household. In creating post-tax and transfer poverty rates, we excluded households with negative or no disposable income. We also dropped cases that did not report income.
5. The dichotomous measure may be the most accurate specification of motherhood given the available data since the other measures imply a false precision of motherhood. For example, the measure of number of children does include children 18 years or older at the time of the survey.
6. LIS has not harmonized this educational variable for Canada and the UK. We hand-coded educational attainment based on detailed measures available in the data.
7. We did not use an ordered probit model because we cannot assume that these are ordered states for mothers making employment decisions, and because it would not allow us to examine the varying effects of motherhood on full- versus part-time employment.
8. We assume that employment patterns of women without children indicate women's baseline employment preferences, which is feasible provided there is no differential selection into motherhood on factors other than age, education and marital status.
9. Relative risk ratios are calculated by exponentiating the logit coefficients. The percentage change in odds is calculated for models that include an interaction effect between marital status and parenthood. The percentage change for single mothers reflects the direct parenthood effect. It is calculated as $100(\exp(b_{parent}) - 1)$. The percentage change for married mothers reflects the sum of the direct and interactive effects. It is calculated as $100(\exp(b_{parent} + b_{interaction}) - 1)$. When the main effects of

motherhood are significant, but the interactions between motherhood and marital status are non-significant, we present the percentage change based on the main effects, illustrating no variation by marital status.

10. The negative effect increased by a minimum of 8 percentage points (Austria) to a maximum of a 21 percentage points (US). In contrast, where the youngest child in the home was school age or older, the negative effects of motherhood decreased in every country, and school-aged children had no effect on women's odds of full-time employment in Belgium and Sweden.

11. Differences in the motherhood penalty in earnings across countries could be due to differential selection of women into employment across countries. To control for this, we employ a two-stage Heckman sample selection correction estimation procedure where we include transfer income, other family income, and presence of a preschooler as selection criteria.

12. We also ran these analyses with a continuous measure of weekly hours; results did not vary.

13. Since poverty rates are based on household income and multiple women can reside in a single household, we adjust standard errors for the interdependence of individuals within households.

14. See the discussion of Table 2 for a detailed explanation of these statistics.

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