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Gender-Differentiated Effects of Parenthood on Earnings: Understanding Cross-National Variation in the Motherhood Penalty and Fatherhood Bonus

Ian Lundberg

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CROSS-NATIONAL DATA CENTER in Luxembourg

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Gender-differentiated effects of parenthood on earnings: Understanding cross-national variation in the motherhood penalty and fatherhood bonus

Ian Lundberg

Harvard University

Abstract:

Although mothers are increasingly joining the labor force, employers continue to pay mothers less than non-mothers and fathers more than non-fathers. Using data from the Luxembourg Income Study (LIS), this paper investigates the influence of parental status on the incomes of men and women in eight industrialized countries. I demonstrate the existence of an employer bias against mothers in all countries except the Netherlands and a bias toward fathers in all countries except the Netherlands and Luxembourg. I then compare three methods for categorizing countries based on gender equality to see which best explains the cross-national variation in motherhood penalties and fatherhood bonuses.

Background:

The entry of women into the labor force is a relatively recent phenomenon, and many people continue to hold the expectation that mothers are better suited to work in the home. According to neoclassical economic theory, it is in a family's interests for each member to specify in a certain type of labor (Becker 1981). Women bear children, so some argue that they have a comparative advantage in the home (*ibid.*). Meanwhile, fathers have a comparative advantage in the workforce because they can spend all of their time at work without any interruptions. By specializing in certain tasks, the family as a whole becomes more economically efficient (*ibid.*).

However, feminist research has challenged the assumption that women are best placed in the home and men are best placed in the workforce. For instance, Hochschild (1989) finds that couples who share the housework equally tend to be happier. As more and more women enter the workforce, it is important for husbands to take up some of the work at home and for employers to provide policies which allow women to keep their jobs (*ibid.*).

Evidence suggests that mothers who choose to work are paid less than non-mothers, and that a large portion of this penalty persists even when controlling for work experience (Budig & England 2001). Among equally qualified female job applicants, mothers are significantly less likely to be called back for an interview (Correll, Benard, and Paik 2007). Fathers, on the other hand, receive higher pay than non-fathers, controlling for work experience and other factors which should affect pay (Glauber 2008; Lundberg and Rose 2000). The cultural image of the father as a provider who is distant from the family fits perfectly with role of the ideal worker who will sacrifice anything for the company (Townsend 2002).

The first goal of this paper is to determine whether there is an employer bias against mothers and in favor of fathers in eight different countries (Belgium, France, the Netherlands, Luxembourg, Germany, the U.K., Canada, and the U.S.). I refer to the "motherhood penalty" as the negative effect of being a mother of a child under six on earnings, compared with the earnings of childless women and controlling for other factors relevant to pay. Likewise, I use the term "fatherhood bonus" to refer to the positive effect of being a father on pay, relative to childless men. Because I control for labor supply factors such as education and age, motherhood penalties and fatherhood bonuses as I refer to them are the result of employer discrimination in pay. The second task of this paper is to determine how cross-national differences can explain the variation in motherhood penalties and fatherhood bonuses.

Esping-Andersen (1990) classifies countries according to three broad categories of welfare states. He argues that states vary in their level of "social citizenship," or value placed on individual well-being apart from what the market provides. He argues that social democratic states, which offer the most extensive welfare programs, have “decommodified” citizens so that their well-being no longer depends on their value as a commodity in the market. Liberal market economies, on the other hand, provide only a bare standard of living for citizens who cannot earn enough in the market. Conservative-corporatist regimes sit somewhere in the middle; although the state provides a level of well-being for citizens, it serves the upper classes more fully than the lower classes, thus maintaining the class hierarchy. In addition, conservative-corporatist states often share the burden of caring for citizens with other institutions, primarily the church. The family is also an important welfare institution in conservative-corporatist states.

Esping-Andersen (1990) argues that the level of gender equality follows regime types. The social democratic regimes should show the greatest level of gender equality because they actively provide for welfare in the home so that women can work, often providing services such as publicly funded child care. The conservative corporatist states hold back equality by depending on families to provide welfare support for children. Many conservative corporatist welfare policies provide for families through direct cash transfers to fathers. This system provides for family welfare, but it assumes a traditional family structure and thus encourages women to stay in the home. Liberal market economies fall in the middle; although the government does not actively support women’s entry into the workforce, changes in the market structure have led women to enter.

Feminist scholarship challenges these distinctions (Orloff 1993; Gornick 1999). Orloff (1993) argues that Esping-Andersen (1990) does not account for private welfare provided by the family, instead focusing only on welfare provided by the state and the market. Through this omission, Esping-Andersen ignores the role women play in providing welfare within families. Further, Esping-Andersen (1990) focuses on the importance of decommodification but does not distinguish between the impact of decommodification on men and women (Orloff 1993). Women are already less likely to be in the labor force, so it would actually increase gender equality to "commodify" them by providing them with access to paid work (*ibid.*).

Empirical findings also challenge the welfare state distinction. For instance, social-democratic states with a high proportion of women in the workforce also tend to have the greatest occupational sex segregation (Pettit and Hook 2009). Gornick (1993) shows that, although full-time employment varies according to regime type, the gender wage gap shows significant variation that is unexplained by regime type, even when controlling for occupation, hours, age, and education level. Thus, we need a better comparative understanding of why the gender wage gap varies between nations.

Blau and Kahn (1992) argue that overall income inequality is associated with large gender pay gaps. Thus, social-democratic countries show the smallest gender pay gaps while liberal market economies tend to have large gender pay gaps. Blau and Kahn (1992) focus primarily on the U.S., which has unusually large gender inequality in pay. They find that the difference between the U.S. and other states decreases significantly when they control for each country's level of overall inequality.

Gornick and Meyers (2003) propose that specific policies determine mothers' outcomes. They compile several policy indices to rate states in terms of their support for working mothers. These indices correlate strongly with mothers' labor force attachment, but Gornick and Meyers (2003) do not analyze whether their indices explain the variation in wage gaps controlling for other factors which affect wages, such as education and age.

I have presented three paradigms for understanding gender inequality: Esping-Andersen's (1990) regime types, overall income inequality (Blau and Kahn 1992), and policy indices of government support for working mothers (Gornick and Meyers 2003). I compare how well these paradigms predict the overpayment of fathers and the underpayment of mothers across eight countries. I am interested in the factors which influence these employer biases. In particular, I investigate which paradigm for cross-national comparison best explains the variation in the motherhood penalty and fatherhood bonus.

Data and Methods:

To make cross-national comparisons, I use data from the Luxembourg Income Study (LIS), a project which compiles data from many countries into a unified format for comparative research. The data come from the 2000 Panel Study of Belgian Households, the 2000 Household Budget Survey (France), the 1999 Socio-Economic Panel Survey (Netherlands), the 2000 Panel Socio Economique (Luxembourg), the 2000 German Social Economic Panel Study, the 1999 Family Resources Survey (U.K.), the 2000 Survey of Labour and Income Dynamics (Canada), and the 2000 Current Population Survey (U.S.).

I conduct multiple regression analysis to determine the impact of parenthood on wages, holding characteristics of the workers constant. I limit my data to persons ages 18 to 64, following Pettit and Hook (2009). I include only those families with either a child under 6 in the household or no children in the household (excluding families with all children older than 6) because the effect of the motherhood penalty is expected to be strongest for mothers with young children (see Gornick and Meyers, 2003). Because I am interested in the employer bias against mothers rather than the supply-side bias of what proportion of women enter the labor force, I restrict my data to persons employed at the time of the sample.

LIS provides data on 37 countries, but I limit my analysis to OECD countries discussed in previous research (see Esping-Andersen 1990; Blau and Kahn 1992; Gornick and Meyers 2003; Petit and Hook 2009). I use datasets from the year 2000 in most countries, but I use 1999 data for the Netherlands and the United Kingdom because of the lack of 2000 data. Most countries have more recent data up to 2007, but this recent data is not available for all of the countries I study. Because I compare across countries rather than across time and the 2000 data are available for more countries, I use the 2000 data for all countries. I also limit the study to countries with person-level data on age, hours worked per week, education level, area of occupation, whether the individual lives with a partner, the number of earners in the household, and the age of the youngest child in the household.

I conduct a separate OLS regression analysis for each gender within each country. The dependent variable is the log of annual income. I take the log because incomes are skewed toward higher values. The continuous explanatory variables in the model are age, the square of age, hours worked per week, potential work experience, and the square of potential work experience. Because most countries do not provide data on years of work experience, I instead use potential work experience, which I define as years since the completion of education. LIS provides this data for the Netherlands, Germany, and Canada. The dataset for the U.K. provides the age upon completion of education, so I construct potential work experience by subtracting this value from age. For Luxembourg, France, Belgium, and the U.S., I estimate age at graduation based on the typical age at which students graduate from various levels of education in each country. I use this estimate in my approximation of years of potential work experience. Although the work experience variable is imperfect, it is better than leaving work experience out of the model and allows all eight countries to remain in the analysis.

The other explanatory variables are dummy-coded. I generate a variable "Parent" to reflect whether the individual has a child under six in the household. I exclude all persons with a child in the household but no child under six, so "Parent" is compared to the omitted category of childless individuals. I dummy code a variable "Full time" if hours worked per week is greater than 30 (following Pettit and Hook 2009). Education is dummy-coded into two variables, "Secondary education" and "Tertiary education (college)," with primary education as the reference category. The distinction between these three levels of education is already made in the LIS datasets. Occupation is dummy-coded into "Manager/professional" and "Skilled labor," with unskilled labor as the reference category. As in the case of education, LIS data distinguishes between these three occupational categories. I dummy code a variable "Lives with partner" because I expect that single parents might have different earnings than parents who live together. I also dummy-code a variable "Single-earner family" because I expect that employers might justifiably pay single-earners a higher wage than dual-earners for the same number of hours worked in order to provide a family wage. This variable ensures that the fatherhood bonus I find is not a single-wage-earner bonus but rather a bonus entirely based on parenthood and gender. Regression results are presented in Table 1.

I next compare the effect of being a parent between countries. To make the dollar amounts comparable, I divide by the Purchasing Power Parity (PPP) in each country. The PPP values come from the United Nations Millennium Development Goals Indicators and convert various currencies into 2000 U.S. dollars (United Nations Statistics Division 2011). Both PPPs and the effects of parenthood adjusted for PPPs are listed in Table 2.

Table 1. OLS models regressing yearly personal income (ln) on labor market characteristics, separated by country and sex

	Belgium		France		Netherlands	
	Men	Women	Men	Women	Men	Women
Parent	.115** (.039)	-.143** (.041)	.140*** (.021)	-.177*** (.030)	.019 (.033)	.112* (.052)
Age	0.041 (.032)	.047 (.034)	.0527* (.022)	.090*** (.025)	.128*** (.014)	.135*** (.015)
Age squared	0.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	-.001*** (.000)	-.001*** (.000)
Potential work experience	-0.009 (.021)	.002 (.022)	-.026* (.011)	-.044** (.013)	.004 (.004)	-.004 (.005)
Potential work experience squared	-0.001** (.000)	-.001* (.000)	-.001*** (.000)	-.001** (.000)	.000 (.000)	.000 (.000)
Full time	.399*** (.079)	.296*** (.062)	.525*** (.037)	.413*** (.037)	.657*** (.060)	.448*** (.061)
Hours	.009** (.003)	.014*** (.003)	.016*** (.001)	.020*** (.002)	.0185*** (.002)	.029*** (.003)
Secondary education	-.004 (.065)	.031 (.072)	-.007 (.018)	.015 (.022)	.138*** (.039)	.160*** (.044)
Tertiary education (college)	-.103 (.109)	.025 (.116)	(omitted)	(omitted)	.320*** (.040)	.342*** (.046)
Manger/professional	.290*** (.078)	.319*** (.082)	.462*** (.039)	.484*** (.047)	(omitted)	(omitted)
Skilled labor	.121* (.061)	.163* (.068)	.171*** (.031)	.178*** (.039)	(omitted)	(omitted)
Lives with partner	.179* (.071)	.162 (.084)	-.020 (.029)	-.029 (.036)	.203*** (.051)	.197** (.062)
Single-earner family	.105* (.065)	.077 (.083)	-.023 (.023)	-.043 (.034)	.064 (.039)	.072 (.056)
Constant	10.975*** (.546)	10.736*** (.582)	8.540*** (.336)	7.911*** (.387)	6.314*** (.267)	6.015*** (.284)
R-squared	.3178	.3507	0.4625	.4555	.4527	.4752
n	967	932	4180	3862	2470	2301

Source: LIS.
Note: Robust standard errors are given in parentheses. Data include employed persons aged 18-64 with either a child under 6 in the home or no children in the home.
Coefficients predict ln(yearly personal income).
* p<.05, ** p<.01, *** p<.001

Table 1 continued. OLS models regressing yearly personal income (ln) on labor market characteristics, separated by country and sex

	Luxembourg		Germany		United Kingdom	
	Men	Women	Men	Women	Men	Women
Parent	0.029 (.034)	-.313*** (.052)	.162*** (.025)	-.357*** (.051)	0.075** (.025)	-.069* (.029)
Age	.056** (.019)	.066** (.020)	.092*** (.011)	.084*** (.012)	.090*** (.015)	.084*** (.015)
Age squared	.000 (.000)	-.0006* (.000)	-.001*** (.000)	-.001*** (.000)	-.0008*** (.0002)	-.001*** (.000)
Potential work experience	.020 (.010)	.021 (.011)	.027*** (.005)	.034*** (.006)	-.0188* (.007)	-.014 (.008)
Potential work experience squared	-.0006* (.0002)	-.0006* (.0002)	-.0002* (.0001)	-.0004** (.0001)	.000 (.000)	.000 (.000)
Full time	.729*** (.094)	.657*** (.081)	.759*** (.046)	.590*** (.048)	.855*** (.043)	.690*** (.041)
Hours	.007** (.002)	.008** (.003)	.014*** (.001)	.020*** (.002)	.013*** (.001)	.018*** (.001)
Secondary education	.257*** (.038)	.235*** (.049)	.090** (.029)	.107** (.032)	.134*** (.023)	.143*** (.024)
Tertiary education (college)	.445*** (.060)	.493*** (.070)	.316*** (.035)	0.312*** (.039)	.342*** (.036)	.371*** (.037)
Manger/professional	.477*** (.069)	.406*** (.081)	.466*** (.042)	.460*** (.045)	.492*** (.038)	.513*** (.041)
Skilled labor	.159** (.053)	.127* (.064)	.242*** (.035)	.234*** (.036)	.310*** (.033)	.341*** (.035)
Lives with partner	.107* (.049)	.107 (.069)	.086* (.034)	.071 (.042)	.010 (.030)	.028 (.034)
Single-earner family	.066 (.039)	.057 (.069)	.007 (.027)	-.008 (.039)	.018 (.027)	.040 (.033)
Constant	10.872*** (.320)	10.691*** (.344)	6.931*** (.209)	6.982*** (.219)	5.982*** (.232)	5.998*** (.236)
R-squared	.5058	.5351	.4823	.5039	.3156	.3598
n	1326	1169	5741	5148	12416	11735

Source: LIS.
Note: Robust standard errors are given in parentheses. Data include employed persons aged 18-64 with either a child under 6 in the home or no children in the home.
Coefficients predict ln(yearly personal income).
* p<.05, ** p<.01, *** p<.001

Table 1 continued. OLS models regressing yearly personal income (ln) on labor market characteristics, separated by country and sex

	Canada		United States	
	Men	Women	Men	Women
Parent	.190*** (.020)	-.338*** (.024)	.200*** (.015)	-.202*** (.016)
Age	.053*** (.007)	.057*** (.007)	(omitted)	(omitted)
Age squared	-.0008*** (.0001)	-.001*** (.000)	.001*** (.000)	.001*** (.000)
Potential work experience	.032*** (.003)	.034*** (.003)	(omitted)	(omitted)
Potential work experience squared	-.0004*** (.0001)	-.0004*** (.000)	-.002*** (.000)	.002*** (.000)
Full time	.637*** (.032)	.623*** (.031)	.711*** (.026)	.648*** (.025)
Hours	-.007*** (.001)	-.007*** (.001)	.014*** (.001)	.016*** (.000)
Secondary education	.143*** (.024)	.135*** (.026)	.314*** (.016)	.315*** (.017)
Tertiary education (college)	.315*** (.024)	.306*** (.025)	.622*** (.019)	.621*** (.020)
Manger/professional	.157*** (.030)	.164*** (.032)	.497*** (.021)	.510*** (.022)
Skilled labor	-.166*** (.028)	-.205*** (.031)	.223*** (.018)	.239*** (.020)
Lives with partner	-.103*** (.020)	-.131*** (.021)	.154*** (.012)	.150*** (.012)
Single-earner family	-.097*** (.019)	-.134*** (.021)	.115*** (.012)	.105*** (.013)
Constant	8.711*** (.125)	8.668*** (.126)	7.146*** (.033)	7.101*** (.034)
R-squared	.2269	0.2400	0.2690	0.3906
n	11038	10468	26007	32933

Source: LIS.
Note: Robust standard errors are given in parentheses. Data include employed persons aged 18-64 with either a child under 6 in the home or no children in the home.
Coefficients predict ln(yearly personal income).
* *p*<.05, ** *p*<.01, *** *p*<.001

Results:

Are there motherhood penalties and fatherhood bonuses cross-nationally?

Table 1 presents the regression results, with the income variable regressed on all of the explanatory variables. In order to compare between countries and isolate the effects of parenthood, I kept all variables in the models regardless of whether they were significant predictors in each country. Stata automatically drops a few variables because they are completely unneeded in some countries. Table 2 lists the PPP values for each country (United Nations) and the adjusted effects of parenthood on earnings in international dollars. In the rest of the analyses, I use these adjusted effects.

Table 2. PPPs and adjusted effects of parenthood on log yearly income

Country	PPP	Effect of fatherhood on earnings	Effect of motherhood on earnings	Adjusted effect of fatherhood on earnings	Adjusted effect of motherhood on earnings
Belgium	.91	0.115	-.143	.126	-.157
France	.95	.140	-.177	.147	-.186
Netherlands	.91	.019 ns	.112	.021 ns	.123
Luxembourg	.91	.029 ns	-.313	.032 ns	-.344
Germany	.95	.162	-.357	.171	-.376
U.K.	.68	.075	-.069	.110	-.101
Canada	1.27	.190	-.338	.150	-.266
U.S.	1.00	.200	-.202	.200	-.202

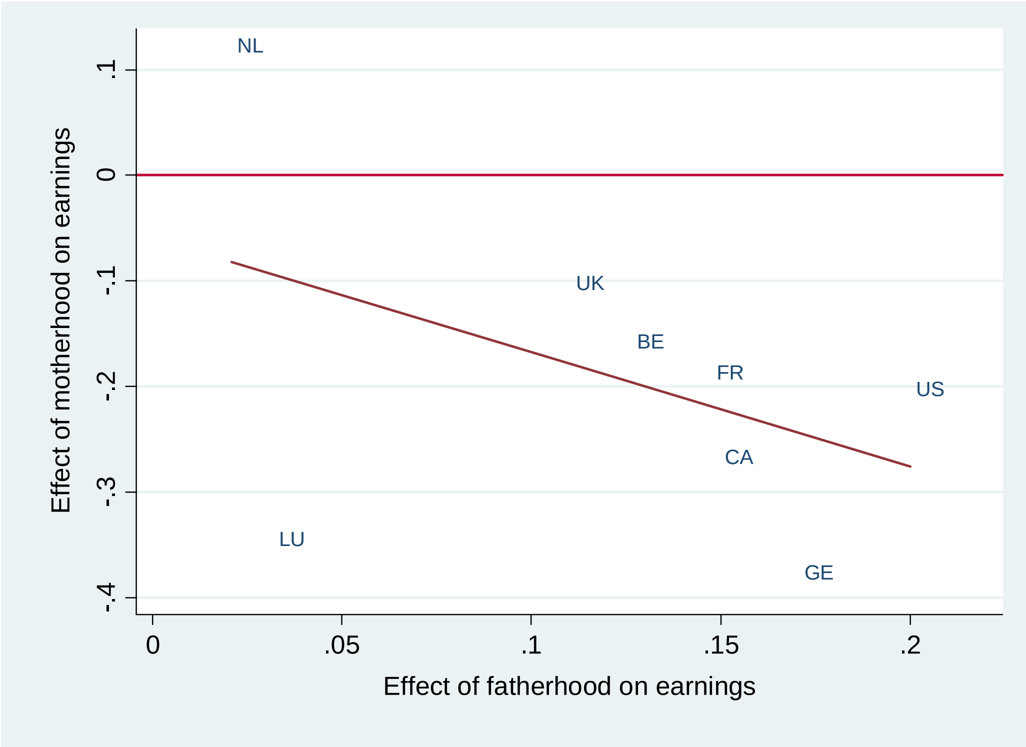
Source: PPPs from United Nations and refer to the year 2000. Data for effects from LIS. PPPs for the U.K. and the Netherlands are from 1999 to match the year of the LIS datasets for these countries.
Note: Adjusted effects are calculated by dividing the effect by the PPP in each country. All effects are significant at the .05 level except for fatherhood in the Netherlands and Luxembourg. Models control for age, age squared, potential work experience, potential work experience squared, working full time, hours worked per week, level of education, area of occupation, living with a partner, and being a member of a single-earner family.

The results indicate that motherhood is a significant predictor of earnings in all eight countries. The effect of having a child is negative in all countries except the Netherlands, where there is a slight positive effect of motherhood on wages. German mothers experience the greatest penalty, followed by mothers in Luxembourg, Canada, and the U.S. Fathers, on the other hand, experience a bonus in all of the countries in the study, although this bonus was not significant in Luxembourg or the Netherlands. The U.S. has the greatest fatherhood bonus, followed by Germany, Canada, and France. Figure 1 visually summarizes the results.

Among the eight countries, there is a weak association (r = -.44) between the motherhood penalty and the fatherhood bonus. Luxembourg is a clear exception to this trend, with a relatively large motherhood penalty but hardly any fatherhood bonus. If we exclude Luxembourg, the relationship becomes much stronger (r = -.87, p = .01). Allegrezza, Heinrich, and Jesuit (2004) demonstrate that Luxembourg is a unique state. It is very small, the people there are unusually rich, and incomes are distributed relatively evenly (*ibid.*). Although Allegrezza, Heinrich, and Jesuit argue that it is critically important in cross-national comparisons, their findings suggest that it is reasonable to expect Luxembourg to yield different data than other countries. Thus, it is reasonable to consider the relationship without Luxembourg because it is an unusual country.

Even with Luxembourg included in the model, there seems to be a negative relationship between the effect of parenthood on mothers' wages and its effect on fathers' wages (r = -.44). As the effect of parenthood becomes more negative for mothers, it becomes more positive for fathers. The overall trend makes sense. In states where policy and cultural values both support the ideal of the father as the breadwinner, the effect of fatherhood on wages is highly positive because working fathers match this ideal. In those same states, working mothers violate expectations and are punished with a wage penalty.

Figure 1. Effect of having a child under 6 on women's yearly earnings (ln) plotted against the effect on men's yearly earnings (ln)



Note: r = -.44. Trend line includes all countries. Countries with large fatherhood bonuses (far right on the graph) also tend to have large motherhood penalties (bottom of the graph). This relationship becomes stronger with Luxembourg excluded (r = -.87, p = .01). The Netherlands is the only country with a slight motherhood bonus, suggesting an overall parenthood bonus.

Potential explanation of the variation: Welfare regimes

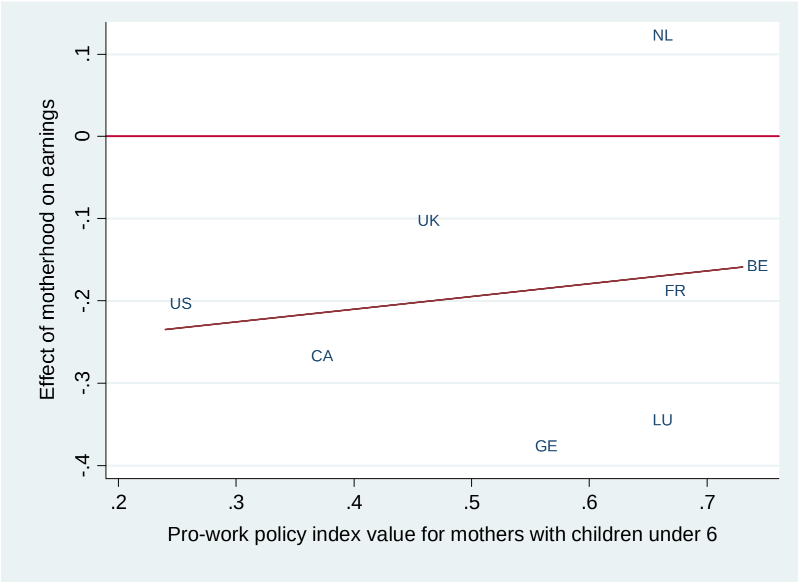
The Netherlands, the only social democratic state in my sample, fits Esping-Andersen's prediction of gender equality, showing a very weak bonus for all parents regardless of gender. However, the welfare state model breaks down in the conservative corporatist and liberal market economies. It predicts the greatest gender inequality in conservative corporatist states where government services tend to go to the male breadwinner of the household in the form of cash transfers (Bussemaker and Van Kersbergen 1999). By depending on the family as a mechanism of welfare, conservative corporatist states actively promote traditional families. Therefore, they would be expected to show the strongest fatherhood bonuses and motherhood penalties. This result is only somewhat supported by the data. Germany has the largest motherhood penalty, as predicted by its conservative corporatist structure. However, Belgium and France show both weaker motherhood penalties and weaker fatherhood bonuses than the US and Canada, two liberal market economies. If Esping-Andersen's typology held, the liberal market economies should all be clustered near the UK while the conservative corporatist states should be near Germany. Instead, the two groups are mixed together with no apparent pattern.

Potential explanation of the variation: Indices of pro-work state policies

Esping-Andersen's welfare states do not sufficiently explain the variation in motherhood penalties and fatherhood bonuses. Gornick and Meyers (2003) argue that cross-national variation in gender inequality can be explained by variation in state policies toward women in the workforce. Their index of policies (see appendix) toward mothers with children under six should be associated with the motherhood penalty and fatherhood bonus, especially since this study focuses on parents with children under six. Figure 2 shows only a weak correlation (r = .17) between policy indices and the effect of motherhood on wages. It suggests that the effect of motherhood on wages is less negative in states with government policies to support working mothers, but this relationship is weak.

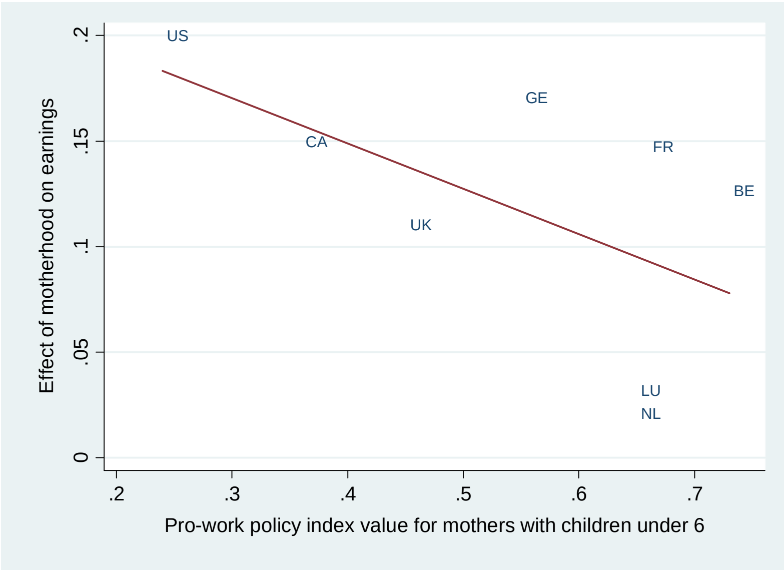
Figure 3 makes the same comparison but for fathers. It shows a connection (r = -.58) between policies toward mothers and the positive impact of fatherhood on wages. The fatherhood bonus is smaller in countries with more policies to support working mothers. Although it may be a result of only studying eight countries, this is an interesting finding. Motherhood penalties and fatherhood bonuses are often thought of in terms of the ideology of

Figure 2. Association between index of policies toward mothers with a child under 6 and the effect of having a child under 6 on women's yearly income (ln)



Source: Policy index values (Gornick and Meyers 2003) indicate the extent to which state policies support the employment of mothers with children under 6. *Note*: *r* = .17. The trendline indicates that the effect of motherhood on earnings is less negative in states with more state support for working mothers.

Figure 3. Association between index of policies toward mothers with a child under 6 and the effect of having a child under 6 on men's yearly income (ln)



Source: Policy index values (Gornick and Meyers 2003) indicate the extent to which state policies support the employment of mothers with children under 6. *Note*: *r* = -.58. The trend line indicates that the positive effect of fatherhood on earnings is smaller in states with more support for working mothers and thus less of an expectation that fathers be the sole breadwinners.

male breadwinners and female homemakers; working fathers meet this expectation while working mothers violate it. Perhaps policies to support working mothers actually serve to tear down the ideology that fathers must be the sole breadwinners of the household without completely removing the ideology that mothers should be in the home. Thus, mothers are encouraged to enter the workforce but are also still expected to keep up the home. If fathers are no longer seen as sole breadwinners, employers are not inclined to pay fathers more than childless men. There is no drive to provide men with a family wage since employers expect that the wives are working too.

These differences in employer attitudes toward fathers might reasonably not apply to mothers. Even in states where there is an expectation that mothers will work, employers remain inclined to pay mothers less because they also expect that mothers should still complete a disproportionate share of the work at home. Pro-work policies might make employers more likely to view dual-earner households as the norm, but they do not sufficiently diminish employers' expectations that mothers will be distracted by the home. Paradoxically, state policies to support *mothers'* employment might actually do more to reduce the bonus *fathers* receive for having children. This line of reasoning matches previous research about women's entry into the labor force and the lack of accompanying home support from fathers (see Hochschild 1989). Although there has been a revolution of policies to provide women with access to paid work, there has not yet been a revolution of men taking over the work in the home (*ibid.*). Thus, pro-work policies do not consistently reduce the employer bias against mothers.

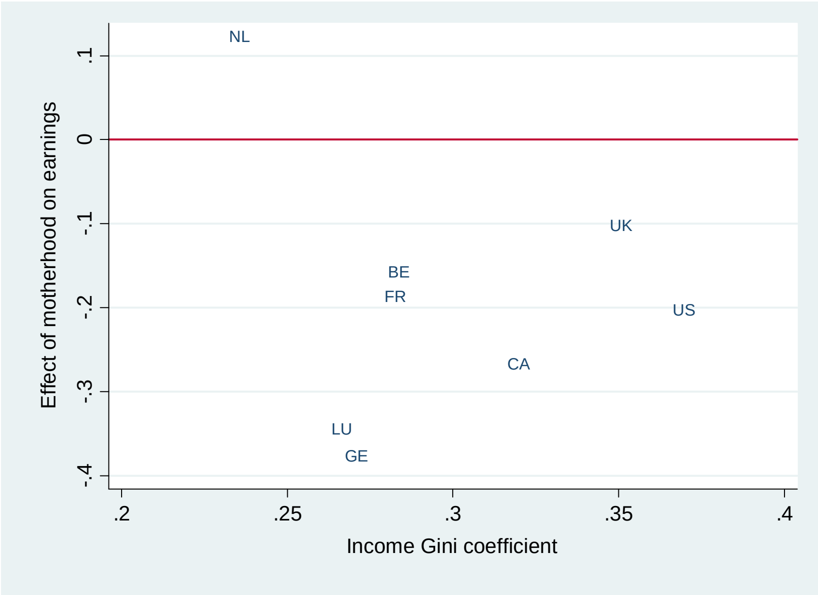
Potential explanation of the variation: Overall income inequality

One final basis of comparison follows from Blau and Kahn (1992), who argue that greater levels of income inequality lead to greater levels of gender inequality. The data in this study only partially support that claim. The income Gini coefficient measures inequality on a scale from 0 to 1, where 0 represents perfect income inequality and 1 represents perfect income equality. I use Gini coefficients calculated by LIS for the datasets in this study (see appendix). Blau and Kahn's (1992) framework predicts a negative relationship such that greater income inequality causes a more negative effect of motherhood on wages. Figure 4 shows little association between Gini coefficients and the motherhood penalty (r = -.16). This association is driven entirely by the Netherlands, which has extremely low inequality and no negative effect of motherhood on wages. In fact, it reverses (r = .57) if the Netherlands is excluded from the analysis. This positive r-value runs counter to the prediction; it suggests that greater income inequality overall actually might yield an effect of motherhood on wages which is less negative.

Blau and Kahn (1992) were motivated to consider income inequality as a source of gender inequality because it explained the unusually large gender inequality in the U.S. However, Figure 4 shows that the U.S. has unusually high income inequality (Gini = .365) but falls closer to the middle of the pack on the motherhood penalty. Overall, income inequality is not a good predictor of the motherhood penalty.

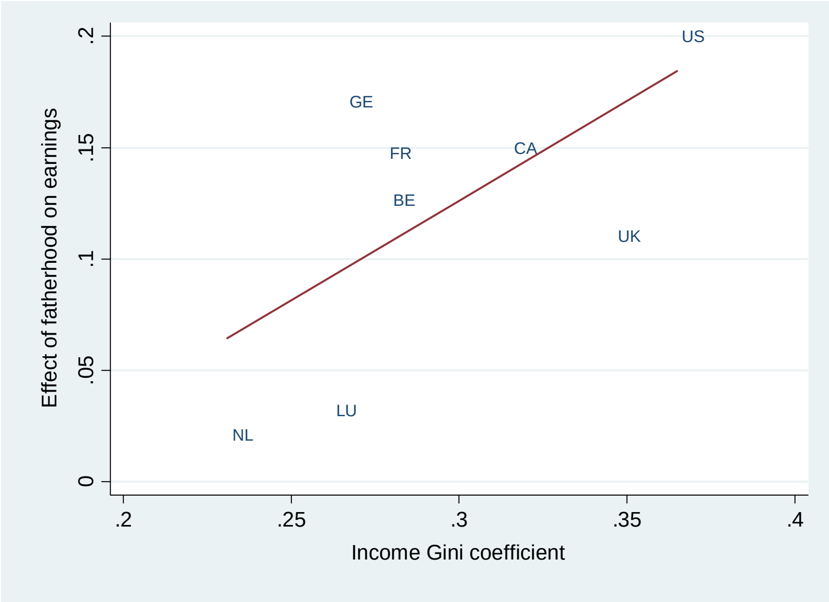
The fatherhood bonus shows a slightly closer connection to income inequality (see Figure 5); countries with greater income inequality have greater fatherhood bonuses (r = .64). Countries with greater income inequality are more likely to pay fathers more than non-fathers. This makes theoretical sense; in an economy with more income variation overall, there is more room for employers to pay fathers considerably more than non-fathers. Just like Gornick and Meyer's (2003) policy indices, inequality seems to predict the fatherhood bonus better than the motherhood penalty.

Figure 4. Association between income Gini coefficient and the effect of having a child under 6 on women's yearly income (ln)



Source: LIS.
Note: r = -.16. Gini coefficients measure the level of income inequality in a country. They range from 0 to 1; a coefficient of 0 would be perfect equality while a coefficient of 1 would be perfect inequality.

Figure 5. Association between income Gini coefficient and the effect of having a child under 6 on men's yearly income (ln)



Source: LIS.
Note: Gini coefficients measure the level of income inequality in a country. They range from 0 to 1; a coefficient of 0 would be perfect equality while a coefficient of 1 would be perfect inequality. The trend line suggests that greater income inequality overall yields greater fatherhood bonuses (r = .64).

Limitations:

Because of the variation in data sources inherent in cross-national research, this study faces several limitations. Work experience was not measured directly, and potential work experience only approximates the effect of work experience on earnings. It is likely that a portion of the motherhood penalties and fatherhood bonuses observed are the result mothers taking time off to care for children. Although the model is not perfect in this respect, the tradeoff is necessary for the use of cross-national comparison.

Another limitation is that the data for the U.K. and the Netherlands comes from 1999 surveys while the other countries' data is from 2000. The data for these countries is converted into 1999 U.S. dollars rather than 2000 U.S. dollars. However, these two values are similar enough that the data remains representative regardless of slight inflation. Further, it is possible that the motherhood penalties and fatherhood bonuses could be changing over time. However, it is unlikely that a major change would occur over the course of only one year. Therefore, these two datasets are sufficiently representative to be included in the study.

One final limitation is that this study only considers parents with children under six in the home. Future research should expand on these findings to investigate cross-national variation in the effect of parenthood on wages for parents with older children. In addition, future work should expand this research to address a wider range of countries.

Discussion:

I find a motherhood earnings penalty in all eight countries in this study except the Netherlands, where mothers receive a slight wage bonus. This penalty remains robust to controls for labor supply factors such as education and hours worked per week. Thus, employers pay equally qualified mothers less than they pay childless women in seven out of the eight countries simply because they have a child under six in the home. In addition, all countries show evidence of a fatherhood bonus in pay, although the bonus is not significant in the Netherlands or Luxembourg. Thus, there is cross-national evidence that employers in many countries consider the presence of children in the home when they decide how much to pay employees. This influence on pay is positive for fathers but negative for mothers.

The cross-national variation in motherhood penalties and fatherhood bonuses is not sufficiently explained by Esping-Andersen’s welfare regime types. The only social democratic state in my sample, the Netherlands, shows very small influences of parenthood on earnings, thus matching Esping-Andersen’s prediction. However, the conservative corporatist states do not consistently have greater fatherhood bonuses and motherhood penalties than liberal market economies. The variation in these nations calls for a new categorization of countries to explain the motherhood penalty and fatherhood bonus.

Neither the policy indices compiled by Gornick and Meyers (2003) nor the level of overall income inequality in each country explain the cross-national variation in the motherhood penalty. Future research should investigate better methods for understanding this cross-national variation in a comparative context.

Both of these measures were able to loosely predict the magnitude of the fatherhood bonus. In states with less state support for working mothers, employers pay fathers a larger bonus. This fits with the theoretical underpinnings of the fatherhood bonus; employers are driven to pay fathers a living wage which can be used to support a family. When the state supports the employment of mothers, employers no longer feel beholden to pay fathers more. However, they do not compensate by paying mothers more, as they still expect mothers to split their time between work and home. Although there is evidence that greater equality and pro-work policies correspond with decreased employer bias in favor of fathers, these measures do not appear to correspond with more equal work opportunities for mothers. Future work must reconsider mainstream comparative findings to produce a better understanding of the state factors which yield greater gender equality for parents of young children.

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Appendix:

Table 3. Pro-work policy indices by country

Country	Policy index
Belgium	.73
France	.66
Netherlands	.65
Luxembourg	.65
Germany	.55
U.K.	.45
Canada	.36
U.S.	.24

Source: Gornick and Meyers (2003).
Note: Policy indices are based on child-rearing costs covered by the government, family leave policies, and working-time regulation such as vacation time (see Gornick and Meyers 2003, pp. 257, 315-320).

Table 4. Income Gini coefficients by country

Country	Gini
Belgium	0.279
Canada	0.315
France	0.278
Germany	0.266
Luxembourg	0.262
Netherlands	0.231
U.K.	0.346
U.S.	0.365

Source: LIS
Note: Gini coefficients measure the level of income inequality in a country. They range from 0 to 1; a coefficient of 0 would be perfect equality while a coefficient of 1 would be perfect inequality.