

Quotas Matter: The Impact of Gender Quota Laws on Work-Family Policies*

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Abstract

Do gender quotas matter to policy outcomes, or are they just ‘window dressing’? This paper is one of the first to examine the relationship between quota laws and policy outcomes across countries. After a quota law, we should expect to see change for issues on which men and women have different preferences, especially if they are orthogonal to the main left-right dimension in politics. Maternal employment and associated work-family policies fit both of these criteria. Using time-series cross-national data for 22 advanced democracies from 1980 to 2011, I examine spending outcomes on work-family policies. In line with women’s preferences, I find that implementing a quota law increases spending on child care, which encourages maternal employment, and decreases spending on family allowances, which tend to discourage maternal employment. No change is found for spending on issues with no gender gap in preferences, or where there is a gender gap but issues align with the main left-right dimension in politics.

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A longstanding debate in the study of political representation is whether the identity of those who represent us matters for policy outcomes. Normative theorists are skeptical of the idea that descriptive representation is necessary for the substantive representation of group interests. Perhaps the most influential scholar of representation, Hanna Pitkin, rejects the notion that there is a link between representatives' identity and actions (Pitkin 1967), and even explicit advocates of group representation concur. Iris Marion Young claims, "Having such a relation of identity or similarity with constituents says nothing about what the representative does" (Young 1997, p. 354). Literature from political economy also tends to ignore politician identity. The assumption is that parties will have incentives to incorporate any electorally salient issues into their platforms (Downs 1957; Aldrich 1995; Kitschelt 2000).

Yet the argument for diversity often relies upon 'the politics of presence', the notion that a group's physical presence in office will lead to better outcomes for that group. While it is not a guarantee, the idea is that women will be more likely to act for women than will men (Phillips 1995). According to this view politicians are not simply responding to incentives; their lived, gendered, raced, classed (etc.) experiences affect their priorities. Even further, identity conditions how people understand what their incentives are in the first place. The political space is thus constructed in some measure from the parochial points of view that make people who they are. Identity, not just incentives, matters for politics.

One of the difficulties of settling this debate is that policy outcomes may arise not from more women in office, but from something else that may cause both women's representation and female-friendly policy change, such as a cultural shift. To make progress on this question, I examine the impact of political gender quota laws, which require all parties to include a certain percentage of women in their party lists. Quota laws cause major transformations of the composition of those elected unmatched by changes in the electorate. Changes in culture and the preferences of the electorate are glacial, but the effect of quotas on representation has been abrupt. There is very little work of this nature, particularly across countries. A notable exception is Chattopadhyay & Duflo (2004), who use a unique institutional setup in India whereby certain seats are required to be randomly reserved for a woman. They find that quotas have altered policymaking in favor of

women’s interests. Findings have yet to be replicated in advanced democracies, where women have a different set of policy preferences and parties and their governments wield significant power. In this setting, can and will women act to pursue their own interests? Can quotas, and increased numbers of women, change the size and shape of the welfare state?

This paper provides the first cross-country evidence that gender quotas affect social policy outcomes in the direction of women’s preferences. I argue that quotas help overcome a political market failure, whereby disadvantaged group interests are not represented in politics if they lie off the main left-right (class-based) dimension in politics. Disadvantaged groups like women face high barriers to entry in politics, and their interests are especially likely to be ignored if they lie off the main left-right dimension. This is because parties have little incentive to represent issues that detract from known positions or cross-cut their constituencies. Work-family policies fit this criteria. Survey data show that perhaps the largest gender gap in preferences exists over the issue of maternal employment, and this gap cuts across party lines.

To test this argument I analyze public spending on work-family policies. Using time-series cross-sectional data for 22 countries from 1980 to 2011, I examine overall work-family policy spending, and spending on family allowances, child care, and parental leave policies. I find that implementing a quota law leads to greater spending on child care, a policy that encourages maternal employment, and less spending on family allowances, which tend to discourage women from returning to paid work. Within countries, quota laws lead to a 0.06 percentage point increase in spending on child care, and a 0.11 percentage point decrease in spending on family allowances. These effects are significant in size given average spending on these policies (0.49% of GDP for child care, and 0.92% of GDP for family allowances). Effects are larger in size in the context of countries with larger average gender gaps in policy preferences (e.g., France as opposed to Portugal). The findings hold up to several robustness checks, including a set of ‘placebo’ regressions which test the research design by examining whether “no effect” is observed when the date of quota implementation is moved back by a number of years. In another set of placebo tests I find no change to spending in areas where men and women tend to have similar policy preferences (old age benefits and education), or areas where there is a gender gap, but issues align with the main left-right dimension

(health and overall social spending).

These findings are important for three main reasons. First, gender quotas are increasingly being introduced in countries across the world. In line with quota supporters, this study confirms that quota laws are an effective tool to increase the substantive representation of women's interests. Second, this research has potential implications beyond gender quotas, adding to the growing evidence that institutions like quotas are not only outcomes in the political process, but also shape attitudes and future policy reforms (Pierson 1993; Campbell 2003; Kittilson 2010). Finally, the framework I propose for determining which policies ought to change – orthogonal issues characterized by a gap in preferences – can be used to expand the scope of this work, identifying other potential outcomes of interest for social groups. The identity of politicians – not only gender, but race, ethnicity, class, religion, and so on – may have significant effects on policy outcomes that warrant further exploration.

The Rise of Quota Laws

Over the past twenty years the use of gender quotas has increased dramatically. Three main types exist: 1) voluntary party provisions (“party quotas”), often included in party statutes; 2) laws that require all political parties to include a minimum percentage of women on their candidate lists (“quota laws”); and finally 3) laws that require women to be elected to certain positions, rather than only nominated (“political reservations”). While common in less democratic countries, political reservations do not exist in Western advanced democracies. This study focuses on quota laws because they oblige all parties in a country to comply and thus have potential for greater policy impact compared to party quotas, although the analysis controls for the use of party quotas as well.

Quota laws now exist in over fifty countries worldwide, and more are being passed every year. These laws are often contentious, and assumptions are frequently made about their impact on a set of ‘women’s issues’. For example, politician Maria de Belém argued that she supported the

Portuguese quota law because, “They [women] can not stay out of setting priorities, defining the content, and defining the scope. Because they have skills that are essential for the improvement of these decisions, because they have knowledge and experience that give a different order to priorities”.¹ This study tests these assumptions.

Quota laws began emerging in the 1990s and were enacted through reforms to electoral laws and sometimes constitutions, for example in the case of France. The focus here is Western advanced democracies because gender gaps in policy preferences are well-established in advanced democracies – e.g., women prefer more spending on social policy – but not elsewhere (gendered policy preferences are discussed in greater detail in the sections to follow). Additionally in low income countries states often have insufficient capacity to provide or implement extensive welfare programs. The political context is thus considerably different.

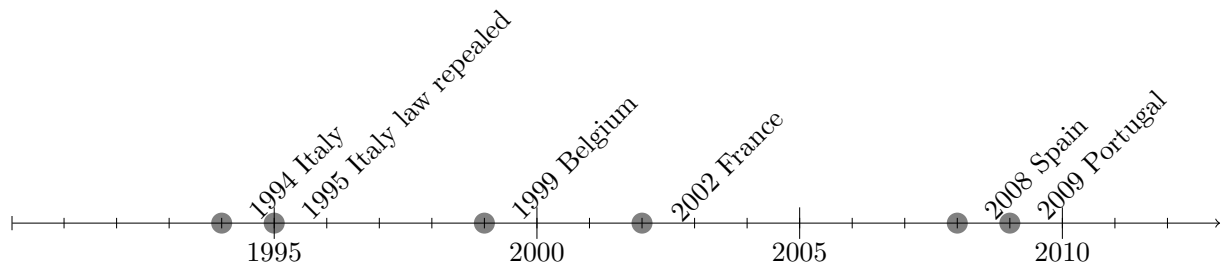


Figure 1: Timeline of Quota Law Implementation in Advanced Democracies
(First Election in Use)

Notes: The figure shows the first year a quota law was used by each country. Regarding adoption of quota laws, Italy passed a quota law in 1993 (repealed by the Constitutional Court in 1995), followed by Belgium in 1994, France in 2000, Portugal in 2006 and Spain in 2007. Italy’s law was in effect only for the years 1994 and 1995.

Figure 1 presents a timeline of quota laws in advanced democracies. The timeline indicates when quota laws were first implemented, i.e. the first election in which a quota was used. In my dataset, five countries have passed a quota law: Italy (since repealed), Belgium, France, Spain, and Portugal.

¹Parliamentary debate, March 30, 2006. DAR I série N. 106/X/1 2006.03.31 (p. 4911-4931). Translation by Google Translate.

Quotas and Policy Change

The literature on gender quotas has thus far focused mainly on the ‘first stage’ of quota adoption and implementation. It shows that when quotas are put in place, they increase the share of women in office (Paxton, Hughes & Painter 2010; Tripp & Kang 2008; Hughes 2011). An emerging body of literature has begun to address the substantive impact of quotas, but until now has been limited to single case studies (Childs 2004; Franceschet & Piscopo 2008; Franceschet, Krook & Piscopo 2012). The best evidence on the causal effect of quotas on policy outcomes comes from the case of India. India’s constitution was amended in 1992 to require that one-third of seats at the local level be randomly reserved for a woman. Research utilizing this natural experiment seems to confirm the theory that quotas alter policy outcomes: female leaders are more likely to adopt laws and invest in resources that women favor – specifically, water and roads (Chattopadhyay & Duflo 2003, 2004; Besley, Pande & Rao 2005; Clots-Figueras 2011). However, this finding has not yet been replicated in advanced democracies, where women have a different set of policy preferences and the behavior of individual representatives tends to be more constrained by their parties.

There are good reasons to believe that the gender of policymakers matters. Literature from gender and politics shows that female legislators are associated with increases in ‘women-friendly’ policy proposals, sponsorship, and debate. For example, women legislators in the United States give greater legislative attention to specific ‘gender-related concerns’ such as abortion or a set of ‘women’s issues’ than do their male colleagues, even controlling for political party (Carey, Niemi & Powell 1998; Thomas 1994; Swers 2002; Dodson 2006; Hogan 2008). Women representatives also claim to think of themselves as representatives of women and to consider women as a constituency group with particular political concerns (Reingold 1992). Similar studies exist for many countries throughout the world (Esaiasson & Heidar 2000; Celis 2007; Catalano 2009). Yet evidence that policy promotion in the legislature translates into outcomes is rare, especially in parliamentary democracies. This is perhaps the ‘most difficult’ institutional setting because scholars have historically assumed that the primary mechanism of representation is the unitary political party (Sartori 1968; Barnes 1977; Dalton 1985; Esaiasson & Heidar 2000). Decision-making is highly institutionalized and party

discipline strong, so individual politicians have less power to influence outcomes. Moreover, if women as a group have significant preferences that are not being represented, existing theory suggests that parties ought to move to capture this space in order to maximize their vote share, or a new party ought to spring up (Downs 1957; Enelow & Hinich 1984; Adams & Grofman 2005; Meguid 2005). According to the spatial theory of party and voter behavior, the identity of politicians ought to be irrelevant.

At the same time, mounting evidence suggests that the median voter theorem doesn't always hold up very well (Romer & Rosenthal 1979; Ansolabehere, Snyder Jr & Stewart III 2001; Gilens 2012). There seems to be significant 'slippage' in the principal-agent contract. One explanation for this is that politicians are biased towards their own interests, as in recent citizen-candidate models of representation (Osborne & Slivinski 1996; Besley & Coate 1997). An emerging empirical literature demonstrates that identities from race (Canon 1999; Whitby 2000) and social class (Carnes 2012) down to learned behaviors like smoking are relevant to policymaking at the highest level. For example, Burden (2007) shows that smokers are more likely to speak and vote against tobacco control measures.

This matters because women, and other minority groups, face high barriers to entry in politics – both higher costs in running for office (comparative lack of time and resources) and discrimination in being selected (Rule 1987; Rule & Zimmerman 1994; Lovenduski & Norris 1993; Verba, Schlozman & Brady 1995; Fox & Lawless 2004; Bird 2005; Lawless & Fox 2005; Anzia & Berry 2011). Discrimination need not be outright; party selectorates could avoid choosing women because they are, statistically speaking, less likely to invest in long, uninterrupted careers (Iversen & Rosenbluth 2010). Male party leaders might unconsciously prefer candidates like themselves, and / or have few women in their professional networks (Niven 1998; Kanter 1977; Sanbonmatsu 2006; Fox & Lawless 2010; Crowder-Meyer 2013). This selection problem means that in most democracies the share of women elected is much less than the share of women in the population, despite evidence showing that voters are not biased against women (Norris, Vallance & Lovenduski 1992; Matland & King 2002; Black & Erickson 2003; Lawless & Pearson 2008; Murray, Krook & Opello 2012).

Gender quotas prevent the political dominance of men, reducing the extent of this selection problem. When women are more equally represented in politics, we should expect to see policy change on the issues that they prioritize. I expect quotas to be especially likely to lead to policy change for issues that are orthogonal to the main left-right (class-based) party dimension. By the main left-right dimension, I mean divergences between the working class and wealthy on economic interests, namely on policies of redistribution and government intervention. Mainstream parties have clear incentives to represent class-based concerns, which have traditionally defined their ideological profiles. Examples of issues that fall off of this dimension include environmentalism (Kitschelt 1988); anti-immigration (Bornschieer 2010); labor market insiders and outsiders (Rueda 2005); and social and cultural professionals (Kriesi 1998). Crucially, gender has also become a relevant cleavage as the male breadwinner model became increasingly out of touch with new social structures and values – notably the rise of women’s employment, decline in marriage, and changing attitudes towards gender roles in society (Esping-Andersen 1999; Edlund & Pande 2002; Iversen & Rosenbluth 2010).

I expect quotas to affect issues that lie off of the traditional left-right dimension for three main reasons. First, when issue demands coincide with existing party preferences, disadvantaged groups are likely to find allies within the political system to represent their interests. For these issues, political parties can be effective vehicles for the representation of new demands: think of women’s realignment from right to left in recent decades and associated increases in overall social spending, in line with their preferences (Huber & Stephens 2000). However orthogonal issues might detract from traditional class-based concerns, and by definition split traditional constituencies, giving parties little incentive to represent them. In this case, prioritizing new issues would likely cause further divisions within the party and electoral prospects may suffer (Ferrara & Weishaupt 2004; Parsons & Weber 2011). Second, parties cannot compete on all issues in every election. They are likely to accentuate those issues on which they have an advantage (‘issue ownership’), and ignore those which are perceived to be difficult or unimportant (Budge, Robertson & Hearl 1987). Finally, it is not clear that male party leaders on either side realize the electoral opportunities of work-family issues (Morgan 2013). In the next section, I show that preferences towards maternal

employment are both characterized by a large gender gap and lie off the main class-based policy dimension in politics.

Which outcomes? Gender gaps in policy preferences

While women are not a monolithic group, there is substantial evidence that women and men have different preferences on at least a subset of issues in advanced democracies. Women are more liberal and favor more government spending overall compared to men across developed countries, even controlling for class and party (Svallfors 1997; Edlund & Pande 2002; Huber & Stephens 2000; Lott & Kenny 1999; Iversen & Soskice 2001). In order to identify policy areas with the largest gender gaps in preferences, I analyzed survey data from three waves of the International Social Survey Programme's (ISSP) Role of Government survey (1990, 1996 and 2006) and four waves of the ISSP's Family and Changing Gender Roles survey (1988, 1994, 2002, 2012). The ISSP offers perhaps the best comparable data available on attitudes towards specific social policies.² Figure 2 shows the average gap in preferences for each issue area across countries and over time. The horizontal bars represent the difference in percentages of women and men who agree with each statement (or disagree, when specified). The column on the right shows the average share of women who agree (disagree).

Across countries, the survey data confirms that women are more supportive of maternal employment and prefer greater spending on many social policies compared to men. The largest differences are in attitudes towards maternal employment, where there is an 8 to 9 percentage point gap between women and men. For example, on average 39% of women disagree that 'a preschool child is likely to suffer if his or her mother works', compared to 30% of men. Similarly, 45% of women disagree that 'a job is alright, but what women really want is home and children', compared to 37% of men. The next-largest differences are in attitudes towards government intervention to control prices and provide jobs (women are more supportive, by 6 to 7 percentage points), and

²The Role of Government survey covers attitudes towards government spending in different areas, as well as attitudes towards the government's broader role in society. The Family and Changing Gender Roles survey covers attitudes towards the employment of women and mothers.

spending on health and old age pensions (5 to 6 percent more women agree compared to men). Chi-square tests find that these differences are all significant at conventional levels for each survey wave included here. Smaller differences exist on, for example, whether it should be the government’s responsibility to provide health care for the sick and a decent standard of living for the elderly, as well as spending on education. These differences are typically not statistically significant.

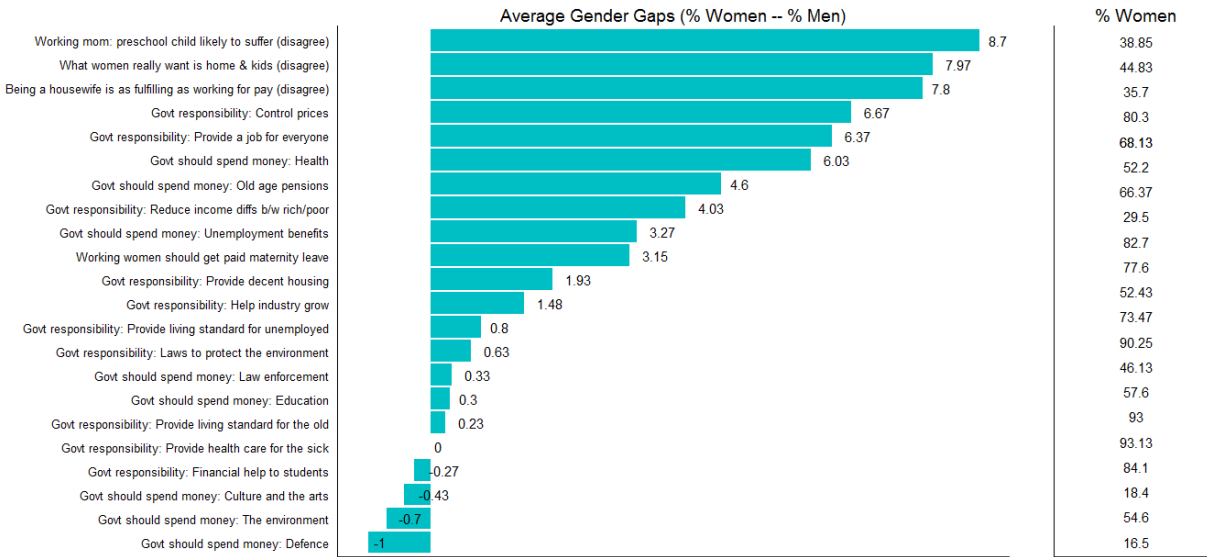


Figure 2: Average Country-Level Gender Gaps in Preferences

Notes: On the left, values are the average share of women who agree (disagree) minus the share of men who agree (disagree) with the statements listed on the lefthand side. On the right, values are the average share of women who agree (disagree) with the same statements. Data come from the ISSP Role of Government survey 1990, 1996, 2006 and the ISSP Changing Gender Roles survey 1994, 2002, and 2012. Average figures were first compiled for each survey wave, including all relevant countries, and then averaged over all available survey waves. Data is not weighted by country. The Role of Government surveys include the following number of countries: 7 (1990), 14 (1996), and 17 (2006). The Changing Gender Role surveys include the following number of countries: 14 (1994), 18 (2002), and 18 (2012).

By far, the largest gender gap in preferences of any documented here is over the issue of maternal employment. Specifically, the statement ‘A pre-school child is likely to suffer if his or her mother works’ is often used to assess attitudes towards maternal employment (e.g., Morgan 2013), which is directly relevant to work-family policies.³ Figure 3 summarizes the gender gap in preferences toward maternal employment by country. The average share of women who disagree with the statement is included in parentheses following the country name.⁴

³Unfortunately, survey data on preferences towards specific work-family policies across all countries of interest and over time do not exist – but see the gender gap in attitudes towards paid maternity leave in Figure 2.

⁴In order to create a cross-national index I compiled the average gender gap for this question by country using eight different surveys from 1988 to 2012. Because not all countries of interest are included in the four waves of ISSP Family and Changing Gender Roles survey, I supplement it with three waves of the European Values Survey (1990,

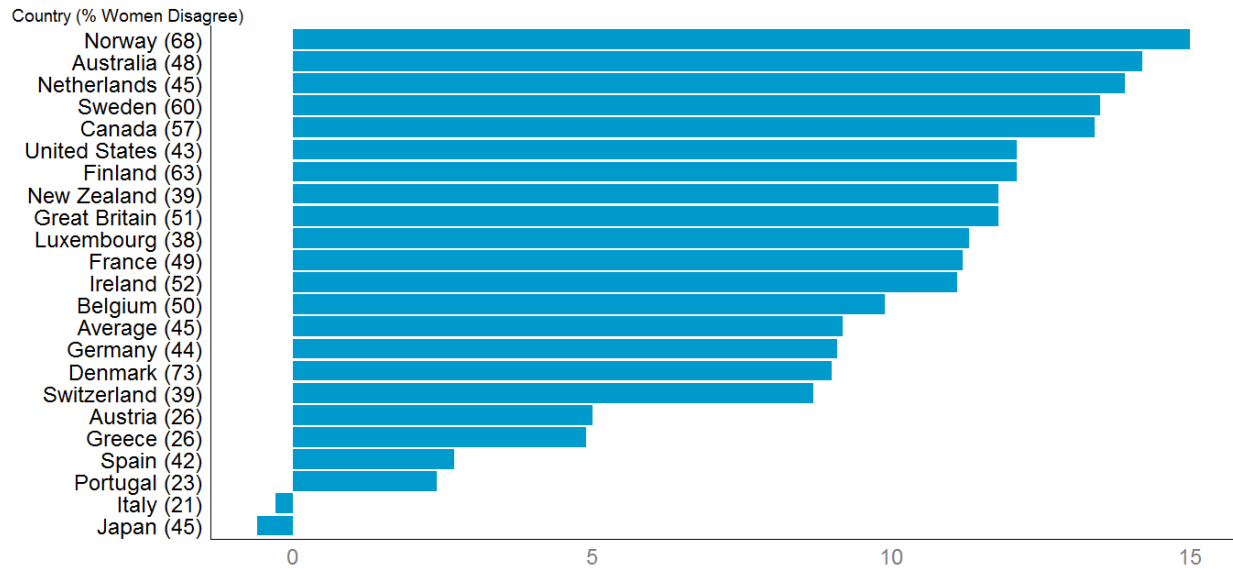


Figure 3: Average Gender Gaps in Preferences towards Maternal Employment

Notes: Values are the average share of women who disagree minus the share of men who disagree with the following statement: ‘A pre-school child is likely to suffer if his or her mother works.’ The figure in parentheses after the country name on the left is the average share of women who disagree with the statement. Data come from the ISSP Changing Gender Roles survey 1988, 1994, 2002, and 2012; the European Values Survey 1990, 1999, 2008; and the Eurobarometer 65.1, from 2006. All available data are averaged for each country.

Looking at between-country variation, there are large gender gaps in Scandinavia and many ‘liberal’ welfare states such as Australia and the US. Continental Europe, including Germany, France, and the Netherlands, is characterized by more moderate gaps. In Southern Europe we see smaller gender gaps, but they have increased over time – a trend which applies to many countries listed here. For example, in the ‘quota country’ of Portugal the gender gap in preferences for maternal employment increased from 3% to 6% from 1990 to 1999 (EVS data). The trend for both men and women is toward more support for maternal employment over time, but women’s views seem to be changing at a faster rate. The gap in preferences also increases with education level, from 9% to 15% among the highly educated (see Appendix A for more). Because women in parliament are likely to be well-educated, this is all the more reason to believe that they will be likely to prioritize these issues in office. Overall, the gap in preferences in maternal employment is larger for the ‘quota countries’ of France and Belgium than for Portugal and Spain. Yet even in

1999, and 2008) and the Eurobarometer 65.1, from 2006. These surveys ask nearly identical questions. The ISSP and EVS both ask whether respondents agree or disagree with the statement: ‘A pre-school child is likely to suffer if his or her mother works.’ The Eurobarometer asks whether respondents agree with the statement: ‘A pre-school child is more likely to suffer if his or her mother works.’

these countries it is still significant, particularly in recent years.

Finally, distinct differences between men and women persist across ideological lines. Figure 4 shows the gender gap in preferences for maternal employment by party affiliation (2002). Respondents were asked which party they voted for in the last parliamentary election, and the figure shows the gender gap within the mainstream left and right parties in each country (for details see figure notes). It illustrates that the gender gap cuts across parties – the average gap within left parties is 11% compared to 9% for right parties.

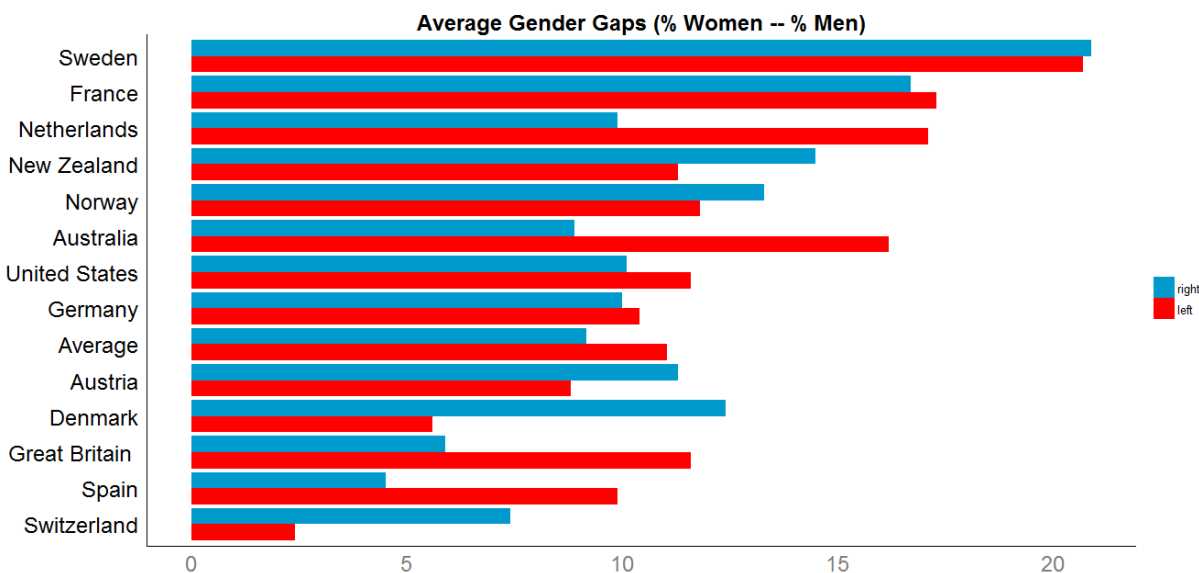


Figure 4: Gender Gaps for Maternal Employment by Party Affiliation

Notes: Gender gaps by country-specific party affiliation (2002 ISSP data). Figures are the share of women minus the share of men who disagree with the statement, 'A pre-school child is likely to suffer if his or her mother works.' Left and right parties: Australia (Labour, Liberal); Austria (SPOE, OEVP); Denmark (Social Democratic Party, Danish People's Party) France (Socialist Party, RPR); Germany (SPD, CDU/CSU); Great Britain (Labour, Conservative); Netherlands (PvdA, VVD); New Zealand (Labour, National); Norway (Labour, Conservative); Spain (PSOE, PP); Sweden (Social Democrats, Moderate); Switzerland (Social Democratic Party, Swiss People's Party); U.S. (Democrats, Republicans). Some countries not included due to missing data.

We might think that left parties are associated with these issues, but in fact family policies are not clearly identifiable with either left or right wing parties. Ideologically the issue seems to be a fear that gender will compete with traditional class concerns, and left parties have been criticized for their indifference to problems facing working mothers (Perrigo 1996; Von Wahl 2006). The right is also not clearly opposed to spending on these policies; in fact, right parties have been influential in changing work-family policies in several cases, such as Germany's recent parental leave reforms

and childcare spending (Morgan 2013). In the United States, both major party candidates in the 2016 presidential campaign competed on child care proposals. In the next section, I conduct empirical tests to confirm that preferences towards maternal employment are a unique underlying dimension, uncorrelated with the traditional left-right dimension.

Tests of maternal employment as an orthogonal issue

So far, the survey data demonstrate that women and men have different preferences on a range of social policies, with women preferring more spending / government support compared to men, and that the gender gap is largest for the issue of maternal employment. The fact that gaps persist across party lines suggests that this issue does not align with the main left-right dimension in politics. I confirm this interpretation in two ways. First, factor analysis tests for the existence of a latent ‘maternal employment’ dimension. Second, regression models assess the relationship between gender, partisanship and policy preferences, all else equal.

To test whether attitudes towards maternal employment are orthogonal to the traditional left-right dimension in politics, we need a dataset with items that tap into both of these issue areas. The European Values Survey (EVS) is a good fit for this purpose, as one of the only surveys that asks about both issues. Unfortunately, none of the ISSP surveys include questions related to both the traditional left-right dimension and maternal employment in the same survey; however I return to the ISSP data in subsequent regression models. The EVS data includes nineteen countries (Austria, Belgium, Denmark, Finland, France, Germany, Great Britain, Greece, Ireland, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United States) over three survey waves: 1990 , 1999, and 2008. The data include three items typically identified with the traditional left-right dimension in politics, and three related to maternal employment.⁵ Table 1 lists these items. For ease of interpretation items are coded such that stronger preferences for maternal employment and government intervention, respectively, receive higher scores.

⁵The same three ‘left-right’ variables have been used to measure attitudes towards government intervention in other studies (e.g., Pitlik & Kouba 2015). Variables related to working women were not included if they did not refer to motherhood or children specifically, e.g., “Having a job is the best way for a woman to be an independent person”.

Following best practice for identifying a latent dimension in pre-existing survey data, I divide the survey sample in two and run separate analysis on each sample. I first perform an exploratory factor analysis (EFA) on one half of the data. The goal with the EFA is to test the plausibility of a two-factor solution by letting survey items freely load on any latent factors (1, 2, or more) in the data. I then perform a confirmatory factor analysis (CFA) on the second half of the data. The CFA returns a more reliable estimate of correlations between latent dimensions (Osborne & Costello 2009; Matsunaga 2015; Cavaillé & Trump 2015).

Table 1: Preference Dimensions in the EVS, 1990 – 2008: Exploratory Factor Analysis

Variable	Survey Item	Factor 1: Maternal Employment	Factor 2: Left – Right
<u>Expected to load on Factor 1:</u>			
Child_suffers	A pre-school child is likely to suffer if his or her mother works	0.78	-0.29
Working_mom_relationship	A working mother can establish just as warm and secure a relationship with her children as a mother who does not work	0.69	-0.24
Job_OK	A job is alright but what most women really want is a home and children	0.64	-0.26
<u>Expected to load on Factor 2:</u>			
State_responsibility	People should take more responsibility to provide for themselves vs. The government should take more responsibility to ensure that everyone is provided for	0.25	0.67
Govt_ownership	Private ownership of business should be increased vs. Government ownership of business should be increased	0.34	0.66
Competition	Competition is good. It stimulates people to work hard and develop new ideas vs. Competition is harmful. It brings out the worst in people	0.25	0.68
	Eigenvalue	1.73	1.58
	Proportion of shared variance explained	28.8	26.4
N = 23,813 (sample 1)			

Note: Cell entries are factor loadings, with loadings greater than 0.5 highlighted in bold. The loadings are obtained from a principal component analysis. The first three items are preceded by the text, "People talk about the changing roles of men and women today. For each of the following statements I read out, can you tell me how much you agree with each. Please use the responses on this card" (range from Agree Strongly to Disagree Strongly). The last three items are preceded by the text, "Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between."

I perform the EFA using a principal-components extraction method which identifies two main dimensions: one where the first three variables have high factor loadings, and one where only the last variable items have high, and about equally large, factor loadings.⁶ These two factors explain 55% of shared variance. The left panel of Figure 5 shows the scree test, and we see that Eigenvalues of subsequent factors drop significantly. The scree test stipulates that the number of

⁶Other extraction methods, e.g. maximum likelihood, yield very similar results. The results are also robust to using a polychoric correlation matrix, adapted to ordinal variables.

factors above (and not including) the natural bend or break point in the data should be retained (Osborne & Costello 2009). The factor loadings conform to expectations. Items that load on Factor 1, which I call 'Maternal Employment', emphasize working mothers, while items that load onto Factor 2, 'Left-Right', emphasize government intervention. The right panel of Figure 5 shows the structural relationship between the variables and these first two factors, using the EFA factor loadings. The figure shows two distinct groupings of variables along a right angle. The results of the initial EFA are thus consistent with the interpretation that preferences towards maternal employment are orthogonal to the standard left-right dimension in politics.

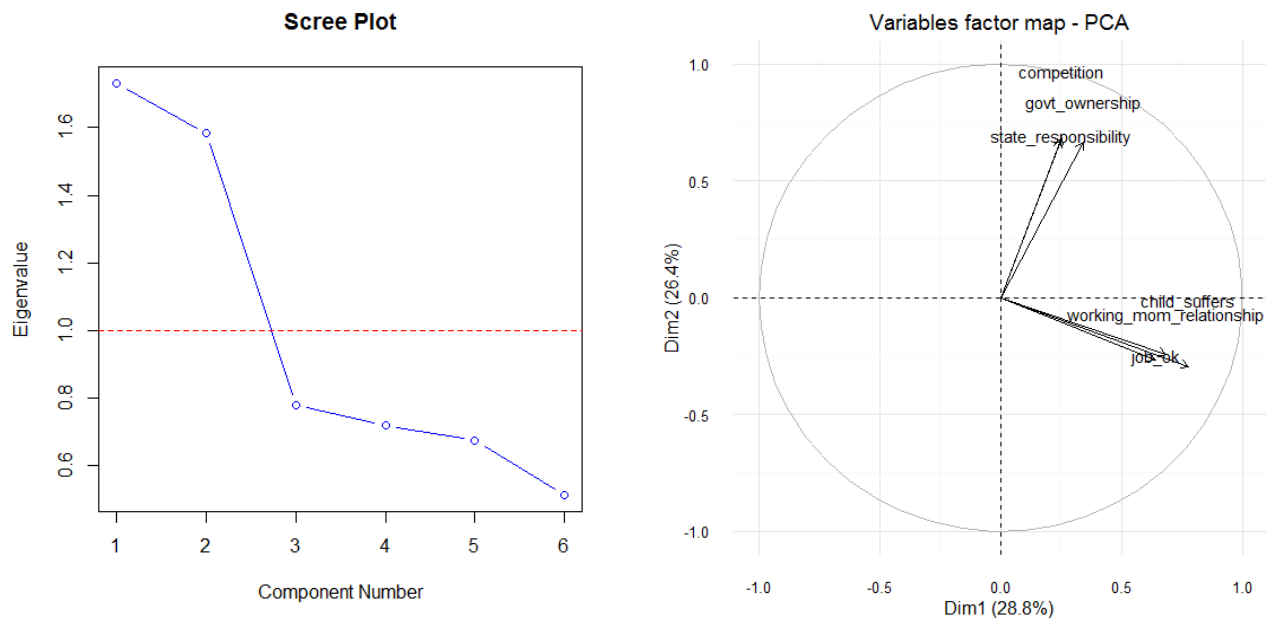


Figure 5: Diagnostics from EFA Analysis

Note: The scree plot on the left displays the Eigenvalues from EFA analysis, showing that the proportion of variance explained declines significantly after the second factor. The plot on the right displays factor loadings from the first two factors of the same EFA analysis, and shows two distinct groupings.

All of the variables load highly on only one component (above 0.6), and so it makes sense to keep them all in the subsequent CFA analysis. Unlike EFA, the CFA imposes a preconceived structure on the data. It is used to test the underlying factor structure identified in EFA. I conduct the CFA analysis on the second half of the survey sample, and results match the two-factor pattern found in EFA. Table 2 reports the factor loadings as well as a set of indicators of the 'goodness

of fit’ of the overall model. All of the factor loadings were significant by conventional standards and load to expected factors. The model returns a factor correlation of 0.07, which supports the expectation that the dimensions are mostly orthogonal. The fit indicators suggest the model does a good job of explaining the covariance among the observed variables.

Table 2: Preference Dimensions in the EVS, 1990 – 2008: Confirmatory Factor Analysis

Variable	Survey Item	Factor 1: Maternal Employment	Factor 2: Left – Right
Child_suffers	A pre-school child is likely to suffer if his or her mother works	0.84	
Working_mom_relationship	A working mother can establish just as warm and secure a relationship with her children as a mother who does not work	0.51	
Job_OK	A job is alright but what most women really want is a home and children	0.46	
State_responsibility	People should take more responsibility to provide for themselves vs. The government should take more responsibility to ensure that everyone is provided for		0.52
Govt_ownership	Private ownership of business should be increased vs. Government ownership of business should be increased		0.61
Competition	Competition is good. It stimulates people to work hard and develop new ideas vs. Competition is harmful. It brings out the worst in people		0.53
	Correlation coefficient between factors	0.07	
	RMSEA	0.02	
	CFI	0.99	
	TLI	0.99	
N = 23,813 (sample 2)			

Note: Cell entries are factor loadings from confirmatory factor analysis, with loadings greater than 0.5 highlighted in bold. The recommended cutoffs are as follows: RMSEA (.06), TLI (.95), and CFI (.95) Hu & Bentler 1999.

As a robustness check, I also ran separate CFA analyses to determine whether the two-dimensional hypothesis holds for each survey wave in the data, and for each individual country. The model holds for each survey wave with no significant variation in factor loadings. The covariance between factors has decreased over time, from 0.12 in 1990 to -0.04 in 2008. The model also holds for every single country in the analysis, although factor loadings and covariance between factors does differ slightly by country. These results are available from the author. Overall, the factor analyses show that a unidimensional view of attitudes towards government intervention and maternal employment does not hold up in the data. Instead, preferences towards maternal employment form a distinct issue dimension.

Another way of investigating this question is to compare the significance of gender and partisan identity as determinants of policy preferences across a range of issues, controlling for other factors. We would expect partisan identity to be the strongest determinant of preferences

for most issues related to social spending, even if gender matters as well. If women’s preferences for maternal employment are orthogonal to the left-right dimension, then gender ought to be a stronger determinant of preferences on this issue than party affiliation.

I estimate probit models of policy preferences based on gender, party affiliation, and a set of controls, using data from the ISSP’s 2006 Role of Government survey and 2002 Family and Changing Gender Roles Survey.⁷ The dependent variable is a binary measure that takes the value 1 if the respondent supports the policy provision, and 0 otherwise. Please see table notes for survey question details. *Female* is also a binary variable equalling 1 if the respondent is female, and 0 for male. Party affiliation is measured as binary variables for *Left*, *Right*, and *Center* where 1 indicates the respondent reports to sympathize with this party, and 0 otherwise (the category left out is ‘Don’t know’ and ‘No party preference’). The analysis includes a battery of individual-level controls that have been shown to influence policy preferences: age, education, social class (self-reported), supervisory position, self-employment, unemployment, part-time employment, public sector employment, not in the labor force, retirement status, rural residence (Svallfors 1997; Cusack, Iversen & Rehm 2006).

Because the coefficients of probit models have little substantive meaning in themselves, I present the marginal effects in Table 3. The coefficients are the estimated marginal effect on the probability of a respondent expressing support for the policy given a unit increase in the value of the predictor variable (e.g., going from male to female gender), while holding all other variables at their sample mean. 95% confidence intervals for the changes in probability are given in parentheses.

The results reveal empirical patterns consistent with the argument that gender preferences for maternal employment are orthogonal to the main left-right dimension in politics. Left and right party identification is a large and statistically significant determinant of preferences on social policy outcomes. In line with conventional understanding of the policy space, left party affiliation is linked to more support for spending and government intervention while right party affiliation

⁷These survey waves best correspond to the years quota laws were implemented. I also analyze data from the 1996 Role of Government and the 1994 Family and Changing Gender Roles surveys (before most quota laws were in place), and my results do not change.

Table 3: Marginal Effects of Gender and Party on Policy Preferences

	(1) Provide a job	(2) More spending: health	(3) Reduce income differences	(4) More spending: education	(5) Pre-K child suffers (disagree)	(6) Housewife fulfilling (disagree)	(7) Pre-K mothers shld work
Female	0.06 (0.04, 0.08)	0.05 (0.04, 0.07)	0.04 (0.02, 0.05)	0.01 (-0.00, 0.03)	0.10 (0.08, 0.11)	0.08 (0.06, 0.09)	0.06 (0.05, 0.07)
Left Party	0.10 (0.08, 0.12)	0.04 (0.02, 0.06)	0.09 (0.07, 0.11)	0.05 (0.03, 0.07)	0.08 (0.07, 0.10)	0.06 (0.04, 0.07)	0.05 (0.03, 0.06)
Right Party	-0.11 (-0.14, -0.09)	-0.07 (-0.09, -0.04)	-0.21 (-0.23, -0.19)	-0.07 (-0.09, -0.04)	0.03 (0.01, 0.04)	-0.01 (-0.02, 0.01)	-0.02 (-0.04, -0.00)
Center Party	0.03 (0.00, 0.05)	-0.01 (-0.02, 0.01)	-0.02 (-0.05, 0.00)	0.01 (-0.01, 0.04)	0.00 (-0.02, 0.02)	0.03 (0.01, 0.05)	0.04 (0.02, 0.06)
Observations	14,584	14,584	14,584	14,584	25,250	25,250	25,250
Countries	16	16	16	16	17	17	17
Year	2006	2006	2006	2006	2002	2002	2002
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Analysis carried out using the `Zelig` package for R v 3.2.1. (Imai, King & Lau 2009). 95% confidence intervals for the changes in probability are given in parentheses.

Survey questions: (1) It should be the government's responsibility to provide a job to everyone that wants one; (2) Government should spend more money: Health; (3) It should be the government's responsibility to reduce income differences between the rich and the poor; (4) Government should spend more money: Education; (5) A pre-school child is likely to suffer if his or her mother works (disagree); (6) Being a housewife is just as fulfilling as working for pay (disagree); (7) Do you think that women should work outside the home when there is a child under school age.

is associated with less support. For example, identifying with the left is associated with a 10% increase in supporting the statement that ‘it should be the government’s responsibility to provide a job for everyone that wants one’, while identifying with the right is associated with an 11% decrease in support (model 1). The first four models, which all deal with social policies, show this relationship of left and right identification linked to strong, opposite preferences. Identifying with the center is not a significant determinant of preferences. In line with the gender gaps shown earlier, female gender is associated with increased support for many social policies, even controlling for other factors correlated with gender. However the size of the ‘effect’ is typically not as large as that of left-right party affiliation. This suggests that partisan identity is a stronger determinant of policy preferences than gender for most social policy issues.

The last three models (5 - 7) address preferences for maternal employment. As expected, female gender is associated with large and significant increases in support for this issue, even controlling for party and other variables correlated with gender. For example, being a woman is associated with a 10% increase in disagreeing with the statement ‘a preschool child is likely to suffer if his or her mother works’ (model 5). Compared to party affiliation, gender is a stronger determinant of preferences for all of the statements related to mothers working. Model 6 measures disagreement to the statement that being a housewife is just as rewarding as paid work, and model 7 asks whether women with children under school age should work outside the home (part- or full-time). Left party identification is also significant, but the size of coefficients is smaller than gender identity. Right and center party identification tend not to be significant determinants of preferences on maternal employment. While the left-right spectrum accurately predicts respondent support for social policy issues (and the direction of preferences), it is less successful at predicting preferences for maternal employment. Women have different preferences on a range of social policy issues, and particularly strong preferences for maternal employment which do not coincide with the main left-right dimension in politics. Because of this, I focus on maternal employment and associated work-family policies in the analysis, although I also test other issues that are well-aligned with the main left-right dimension in politics such as overall social spending.

Hypotheses

Because maternal employment is both orthogonal to traditional party lines and characterized by a large gender gap, I expect changes to policies that either help or hinder women returning to paid work after a quota law is passed. I focus on three main ‘work-family’ policies: 1) public child care provision and 2) maternity and parental leave, both of which facilitate maternal employment, and 3) family allowances / child benefits, which tend to discourage maternal employment. A fourth set of policies of interest are measures that enable part-time work, which is more attractive than full-time work for many mothers of young children (Morgan 2006, p.169). Because comparative data on part-time working policies is not currently available it is not included in analysis here. Below, I discuss the implications of different work-family policies for maternal employment and related hypotheses.

A substantial literature links generous public child care policies to the growth of maternal employment over recent decades (e.g., Lewis 1992; Attanasio, Low & Sanchez-Marcos 2008), and suggests that child care is a key determinant of cross-country differences in female labor force participation (Jaumotte 2003; Del Boca 2002; Del Boca et al. 2005). When the state is able to take on some of the caring responsibilities, mothers have more time to to engage in paid labor. Some examples of public child care programs are municipal-run *crèches collectives* in France (public center-based care, beginning as young as 2 months) and Italy’s *scuole dell’infanzia* for 3 to 6 year-olds.

Maternity and parental leave policies have also been correlated with maternal employment, particularly if they are well-paid and include job protection (Rønsen & Sundström 1996; Bergemann & Riphahn 2011; Baker & Milligan 2008). Leave policies enable women and men to continue employment while temporarily giving priority to care responsibilities. For example, Switzerland offers mothers 14 weeks of maternity leave paid at 80 percent of earnings while in Austria up to 2 years can be taken, paid at various rates. Leave policies can be a double-edged sword; leave that is too short may not provide women with enough incentive to return to paid work, while leave that is too long may break women’s ties to the labor market (Baker & Milligan 2008; Dustmann &

Schönberg 2012). Still, most of the literature considers leave policies to be a positive influence on women's employment overall. Previous research has found that women in parliament are associated with longer leave periods, and the assumption is that longer leaves enhance women's work-family balance (Kittilson 2008). In line with this I assume that leave policies will facilitate women's transition back to paid work. I expect:

Hypothesis 1: *Quota laws will lead to more spending on family policies that help mothers return to paid work; namely, child care and leave policies.*

Conversely, quota laws ought to lead to less spending on family policies that discourage women from returning to paid work, or do not prioritize it. Child benefits and family allowances enable mothers to stay at home as full-time caregivers, rather than supporting involvement in paid work. These programs were often designed to encourage women to have children in the face of declining fertility rates, and to protect the earnings of a single male breadwinner (Gornick, Meyers & Ross 1997; Gottfried & O'Reilly 2002). An example is the *allocations familiales* in Belgium, which provide monthly payments to the primary caregiver (typically mothers) up until the child is 18. In some cases child benefits and family allowances are targeted at low-income families and means-tested – e.g., the *assegni familiari* in Italy. Some scholars suggest that this fosters 'single-earner' family patterns, continuing to support the male breadwinner model (Naldini 2004). Unlike child care services, family allowances create incentives for mothers to be at home with young children. Thus I expect:

Hypothesis 2: *Quota laws will lead to less spending on family policies that do not encourage mothers to return to paid work; namely, child benefits and family allowances.*

Finally, the size of the gender gap on maternal employment varies across countries. As previously discussed, women in countries such as Italy and Portugal continue to hold more traditional views on maternal employment. Accordingly, I would expect the impact of quota laws to be smaller in cases where gender differences in preferences are also relatively small.

Hypothesis 3: *The size of the effect of quota laws will be greater in countries where the gender gap in policy preferences is relatively large.*

Data & Methods

To test these hypotheses, I analyze government spending on work-family policies for 22 countries from 1980 to 2011, using data from the OECD Social Expenditures Database.⁸ The main independent variable is Quota Law, a binary variable that equals 1 when a country has implemented a gender quota law and 0 otherwise. Ideally, in order to make causal inferences about the effect of a quota law on policy outcomes, a quota law would be randomly assigned to countries. Given that this is not possible, a major concern is that the effect is not causal and that something else such as culture or attitudes towards women is determining both adoption of a quota law and policy outcomes.

I cannot fully resolve this problem, but I take several steps to alleviate concerns. First, I estimate models that include country and year fixed effects. Country fixed effects control for any country-specific omitted variables (observable and unobservable) that are constant over time, a potentially large source of omitted variable bias. Year fixed effects deal with group-invariant trends over time, e.g., global economic conditions. The two-way fixed effects design is a generalization of the difference-in-differences approach, where countries implementing a quota law are the ‘treated’, and those that do not are the ‘controls’. The specification compares average policy outcomes post-quota minus policy outcomes pre-quota in the treated countries to the change in policy outcomes in the control countries over the same period. Results should be interpreted as within-unit changes, i.e., the link between quotas and policy change within quota countries.

The critical identifying assumption in this approach is that there are no potential time-varying confounders that have not been accounted for in the analysis. To deal with this concern I carefully identify and control for potential confounding variables, factors which could affect both the probability of quota adoption and policy outcomes. Conditioning on these observed characteristics helps ensure that the groups being compared are really comparable, and strengthens support for a

⁸These are the years covered by the OECD Social Expenditures Database as of April 2015. The countries included are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Great Britain, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, and the United States.

causal interpretation of results.

The baseline model with country and year fixed effects can be written as:

$$Y_{it} = \beta_1 Quota Law_{it} + \beta_2 Z_{it} + \alpha_i + \eta_t + \mu_{it}$$

where Y_{it} is the outcome of interest and measures work-family policy spending in country i in the year t ; *Quota Law* is a dummy variable equal to 1 after the implementation of a quota law and 0 otherwise, and β_1 is the coefficient for this main independent variable; Z_{it} represents a vector of covariates, and β_2 the coefficients for these covariates; α_i and η_t are country and year fixed effects, respectively; and μ_{it} is the error term. *Quota Law* is lagged by one year to acknowledge the time it takes to influence spending outcomes, and the other right-hand side variables are lagged by 2 years because they can be affected by the treatment and may induce post-treatment bias (King & Zeng 2006).

I take several steps to check that findings are not the result of model misspecification. A well-known problem with using panel data with fixed effects is serially correlated errors. Tests suggested by Wooldridge (2010) show AR(1) serial correlation is present in the data used here. To deal with this I follow Beck and Katz (1995) and correct for AR(1) serial correlation in the residuals by estimating Prais-Winsten regressions with panel-corrected standard errors. Another concern with fixed effects models is that they tend to produce “false-positive” results at high rates (Bertrand, Duflo & Mullainathan 2004). In order to alleviate this concern I estimate a set of placebo regressions, which test the research design by examining whether “no effect” is observed when the date of quota implementation is moved back a number of years. In the following section I describe the data and relevant covariates.

Data

The OECD Social Expenditures Database measures overall government expenditures on family services, and it can be further divided to measure spending on: 1) family allowances; 2) child care

and early childhood education systems, and; 3) maternity, paternity, and parental leave policies. Spending on family allowances refers to child-related cash transfers to families with children, with payment levels that in some countries vary with the age of the child, and sometimes are income tested.⁹ Spending on child care and early childhood education refers to public financial support for families with children participating in formal daycare services (e.g., creches and daycare centers for children under 3) and pre-school institutions (including kindergartens and daycare centers which usually provide an educational content for children ages 3 to 5).¹⁰

Lastly, spending on maternity, paternity, and parental leave refers to public income support payments during periods of maternity, paternity, and parental leave. Maternity and paternity leave are defined as employment-protected leave of absence for employed mothers and fathers, respectively, at or around the time of childbirth or adoption in some countries. Parental leave is employment-protected leave of absence for employed parents, which is often supplementary to specific maternity and paternity leave periods.¹¹ Data are measured as percent of GDP.¹² The mean percent of GDP devoted to family policies in the sample overall is 1.96. Family allowances constitute most of this spending (mean = 0.92), followed by child care and early childhood education (mean = 0.49) and leave policies (mean = 0.24).

The key independent variable is *Quota Law*, a binary variable coded 1 for the five countries which have implemented a quota law (including and after the first election in which the quota was in operation) and 0 otherwise. Appendix B shows summary statistics for all parameters used in the analysis, and provides details about data sources. To specify the covariates to be used as controls, I consider how the adoption of quotas is related to established determinants of work-family policies. The key issue is whether adopting a quota causes parties and governments to change their policy priorities, or there is something else that both contributes to a quota being adopted and also causes a shift in spending outcomes, e.g. an underlying cultural norm shift in favor of women. I focus

⁹“PF1.3: Family cash benefits.” OECD Family Database. 1 Last updated 14/07/2014.

¹⁰“PF3.1: Public spending on child care and early education.” OECD Family Database. Last updated 29/07/2013.

¹¹“PF2.1: Key characteristics of parental leave systems.” OECD Family Database. Last updated 01/05/2014.

¹²Spending-to-GDP ratios are calculated by the OECD using their *National Accounts* data (where GDP is recorded for the calendar year). The recording period for social expenditure data is typically the calendar year; in cases where the financial year recorded differs from the calendar year special adjustments for GDP are made. For full details see Adema, Fron & Ladaique 2011 p. 100.

only on time-varying confounders here, because all models include fixed effects which account for any (observable or unobservable) time-invariant confounders.

I control for five variables potentially linked to both adopting quotas and family policy outcomes: *% Women in Parliament*, *Female Labor Force Participation*, *GDP per capita*, *Left Cabinet*, and *Party Quota*. First, I control for *% Women in Parliament* because it is the best proxy available for attitudes towards women in politics (Norris 1985), a very difficult variable to measure over time.¹³ If there were different trends in attitudes towards women in politics in quota- and non-quota countries before the introduction of quotas, this would pose serious problems to the identifying assumptions here. Because including trends in attitudes directly is not possible, I use the share of women in parliament to control for the concern that attitudes towards women in politics, and policies that women prefer, were already changing before the quota law was passed. The share of women in parliament has also been linked to increases in spending on child care and parental leave (Bonoli & Reber 2010; Kittilson 2008).

Economic development (measured as *GDP per capita*) and associated increases in *Female Labor Force Participation* could be associated with quota adoption through their link to increases in women's representation (Matland 1998; McAllister & Studlar 2002; Iversen & Rosenbluth 2008; Tripp & Kang 2008). According to Inglehart and Norris (2000), economic development goes hand in hand with the transformation of sex roles and attitudes towards women, the break-up of traditional family units, and female participation in the workforce. As the service sector grows and education for women improves, women are better able to compete with men for jobs. And as women gain entry into previously male-dominated labor markets, they gain the experience necessary to run for political office, and voters become more receptive to female candidates. Both variables are also related to policy outcomes; for example, as incomes and government revenues increase, demand for public expenditure should also rise (Wagner's Law). Workforce participation entitles some women to benefits that they would otherwise not be eligible for and increases their need for services to help balance work and family.

¹³The best survey question would probably be the following, from the World Values Survey: "On the whole, men make better political leaders than women do." This question is not available for most quota countries before 2010. I find similar problems with other survey questions.

The variable *Left Cabinet* controls for the possibility that left-wing parties and governments push through both quota laws and women’s policy agendas. Left parties were typically the ones to introduce and support national quota legislation (e.g., recently in Spain and Portugal). Commitment to sexual equality has been a longstanding element of socialist (and many other left parties’) ideology (Duverger 1955), while conservative parties tend to favor laissez-faire policies over concrete affirmative action measures. Left parties have also been linked to a range of feminist policy outcomes (Huber & Stephens 2000; Mazur 2002; O’Connor 1999). Left power is operationalized as the share of left cabinet seats rather than parliament seats because previous research identifies government partisanship as particularly important for social policy outcomes (e.g., Huber & Stephens 2000).

I include the share of relevant parties with voluntary gender quotas (*Party Quota*) to control for concerns that internal party quotas are driving change both to national quota legislation and policy outcomes for women. Previous research posits a ‘contagion effect’ between party and national level quotas whereby existence of party-level legislation paves the way for the law (Meier 2004). Parties also gain experience implementing the law and are able to see that it is effective, which increases their support.¹⁴ I expect that voluntary party quotas could be linked to policy outcomes mainly through the indirect mechanism of increased women’s representation.

I considered controlling for several other variables correlated with quota adoption. First, research has highlighted the importance of strong women’s movements advocating for change, especially women’s sections in the party (Kittilson 2006; Dahlerup 2006). Unfortunately it is very difficult to measure the presence or strength of women’s movements or party sections across countries over time. The best data available come from Htun and Weldon (2012), who compile measures of the strength and autonomy of feminist women’s movements over time in 70 countries. Because data are coded as “snapshots” in time every 10 years, including it in analysis would result in losing valuable intertemporal variance. However, the data show that there was no change in the strength or autonomy of women’s movements in Belgium, France, and Portugal before a quota law was passed. In the remaining two ‘quota countries’, Italy and Spain, the strength of feminist

¹⁴ Author interviews in Belgium and Portugal, September – December 2013.

women's movements declined before the quota law passed (autonomy remained the same). In summary, no evidence suggests that a trend towards strong, autonomous women's movements is present before quota laws are passed.

Secondly, the literature suggests that (typically male) elites might support quota laws for strategic reasons, such as gaining more control over their opponents within or outside the party (Panday 2008; Fréchette, Maniquet & Morelli 2008; Krook 2009), or as a way to demonstrate commitment to women without really intending to change the existing status quo (Htun & Jones 2002; Bird 2003). For example Baldez (2004) finds that in the context of electoral uncertainty party leaders will support gender quotas as a way of boosting support among women while also consolidating control over the nomination process. This kind of variable would be very difficult to define and measure across countries. Fortunately there is little reason to believe it is a confounder of the relationship between quotas and policy outcomes, precisely because male elites who support quotas for strategic reasons would be uninterested in making real changes towards gender equality.

Additionally I control for a set of standard covariates from the literature on determinants of social policy spending which are not known to affect quota laws. These are included to increase the accuracy of model estimates. I control for *Union Density* because traditionally male-dominated unions have often been hostile to feminist demands (Gelb 1989), and unions might support the interests of (male) low wage workers over gender equality in the labor market when the two are competing (Huber & Stephens 2001; Gelb 1989; Kittilson 2008). I control for *Wage Bargaining Level* because centralized wage bargaining is strongly associated with generous welfare states (Hicks 1999; Swank 2002) and has been linked to gender egalitarian employment policies (O'Connor 1999). *Fertility Rate* is included because many family policies are only granted in connection with the birth of a child. Higher fertility rates suggest a greater need for work-family policy spending. *EU Membership* may lead to convergence on higher family policy spending levels. The EU has issued directives on maternity and parental leave and advocates targets for child care provision, which continue to be monitored by the European Commission.¹⁵ Finally I include a measure of overall

¹⁵See Council Directive 92/85/EEC of 19 October 1992 on maternity leave; Council Directive 2010/18/EU on parental leave; and Barcelona Council (2002) targets for child care in the EU.

Social Expenditures as a percentage of GDP, because countries that spend more on social policies might also spend more on family policies as part of this general commitment.

Results

Table 4 reports the results showing the effects of quota laws on work-family spending. All models include country and year fixed effects and (observable) time-varying potential confounders. As discussed, a fixed effects regression of this form estimates the effect of changes *within* countries over time in quota implementation on spending outcomes, while also partialing out any time-based shocks and trends common to all countries. Model 1 addresses overall spending on work-family policies, while Models 2, 3, and 4 address spending on family allowances, child care, and parental leave respectively. Model 3 (child care) includes a dummy variable which equals one for years 1998 and greater, because pre-primary education data from the OECD Education Database is included for the first time in this year.

Providing support for Hypotheses 1 and 2, the estimates suggest that after a quota is adopted governments spend more on child care and devote a smaller percentage of the budget to family allowances. No significant association is found between quotas and overall family spending, or (contrary to Hypothesis 1) spending on parental leave policies. Models including five-year period dummies (not included to save space) returned similar results, with quota laws associated with significant decreases in spending on family allowances and increases in spending on child care.

Model 1 addresses overall spending on family policies. It shows that quota laws are associated with a decrease in family policy spending, but the link is not statistically significant. Model 2 examines spending on family allowances, and the coefficient for quota law is negative and statistically significant. Within countries, adopting a quota law leads to a 0.11 percentage point decrease in spending on family allowances. For example, a country that spent 1 percent of its GDP on family allowances before a quota law would be expected to spend 0.89 percent of its GDP on family allowances after a quota law is implemented. Model 3 shows that the opposite is true of

Table 4: Determinants of Family Policy Spending

	(1)	(2)	(3)	(4)	(5)	(6)
	Overall family policy spending	Family allowances	Child care	Parental leave	Family allowances	Child care
Quota Law _(t-1)	-0.037 (0.059)	-0.114*** (0.038)	0.059* (0.032)	-0.004 (0.012)	0.0035 (0.037)	-0.009 (0.029)
Quota Law _(t-1) * Preference Gap					-0.024** (0.009)	0.015* (0.007)
% Women in Parliament _(t-2)	0.002 (0.004)	0.003 (0.002)	0.002 (0.001)	0.001 (0.001)	0.004 (0.003)	0.002 (0.002)
GDP per capita _(t-2)	0.004*** (0.001)	0.002*** (0.001)	-0.001 (0.000)	0.000** (0.000)	0.002*** (0.001)	-0.000 (0.000)
Female Labor Force Part. _(t-2)	0.020 (0.012)	-0.008 (0.008)	0.010 (0.006)	-0.005 (0.003)	-0.008 (0.008)	0.010 (0.006)
Left Cabinet _(t-2)	-0.000 (0.000)	-0.000 (0.002)	0.000 (0.000)	0.000 (0.000)	-0.000* (0.000)	0.000 (0.000)
Party Quota _(t-2)	-0.001 (0.001)	0.001 (0.001)	0.000 (0.000)	-0.000 (0.000)	0.001 (0.001)	0.000 (0.000)
Union Density _(t-2)	-0.013*** (0.000)	-0.007** (0.003)	-0.004** (0.001)	-0.001 (0.001)	-0.007** (0.003)	-0.004** (0.002)
Wage Bargaining Level _(t-2)	-0.003 (0.016)	-0.008 (0.011)	-0.001 (0.052)	0.001 (0.006)	-0.009 (0.010)	-0.001 (0.006)
Fertility Rate _(t-2)	0.086 (0.117)	-0.055 (0.079)	0.256*** (0.048)	0.091*** (0.032)	-0.039 (0.078)	0.248*** (0.047)
EU Membership _(t-2)	-0.209** (0.093)	-0.031 (0.051)	-0.124** (0.052)	-0.098** (0.036)	-0.035 (0.050)	-0.124** (0.052)
Social Expenditures _(t-2)	0.042*** (0.009)	0.029*** (0.006)	0.003 (0.004)	0.007** (0.003)	0.028*** (0.006)	0.003 (0.003)
Post-1997			0.426*** (0.093)			0.411*** (0.093)
Constant	0.365 (0.591)	1.365*** (0.447)	-0.759*** (0.272)	-0.207 (0.158)	1.307*** (0.441)	-0.744*** (0.271)
N	603	639	593	596	639	593
R-squared	0.81	0.66	0.78	0.72	0.67	0.79
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Analysis carried out using the `panelAR` package for R version 3.2.1. Prais-Winsten regressions, with panel corrected standard errors in parentheses.

Signif. codes: *** 0.01 ** 0.05 * 0.10

child care spending: adopting a quota law is associated with a .06 percentage point increase in spending on child care policies.

The size of these predicted changes may not seem large, but it is significant. Table 5 shows real spending changes from before versus after a quota law in all five countries. Spending decreases are in *italics*. For a larger welfare state like France, the quota law translates into the equivalent of \$497 more on child care per child per year, and \$307 less on family allowances. In a Mediterranean welfare state like Portugal the size of effects is smaller, at \$26 more per child per year on child care and \$131 less on family allowances. However it is worth keeping in mind that Portugal has a lower baseline of overall spending and a smaller share of that devoted to family policies. For example, in 2006 Portugal devoted 0.3% of GDP to child care to France's 1.1%.

Quotas shift the composition, but not the overall size, of work-family policy spending. This suggests that insofar as the budget is fixed, relative spending priorities favor investing in child care over family allowances after a quota law. It can be very unpopular and difficult to take away benefits once they are established (e.g., Pierson 2000). So why would women politicians want to decrease funding for family allowances? One explanation is that it's more about prioritizing child care than reducing allowances. When faced with limited funding or spending cuts, female politicians might push for child care expansion even if it means cuts to family allowances, which compose the majority of the work-family policy budget for most countries. For example, in 2013 France announced cuts to its generous system of family allowances along with a goal of 100,000 new public child care places for children under three by 2017. The socialist Minister for Social Affairs Marisol Touraine spearheaded the policy changes, which were often discussed together as a tradeoff. She said in an interview, "A strong family policy today is one that creates child care places. It can not be limited only to benefits."¹⁶ I come back to this point in the case study.

Model 4 shows a small negative association between quota laws and spending on leave policies, but it is not statistically significant. One potential concern with spending data on maternity and parental leave is that it is difficult to discern what type of leave policy governments

¹⁶ "Touraine : 'Une politique familiale ne peut se limiter qu'à des allocations'," *Le JDD*, 28 October 2014, translated by Google Translate.

Table 5: Real Spending Changes in Quota Countries, After – Before Quota Law

	Italy	Belgium	France	Spain	Portugal
△ Child Care					
% GDP	<i>-0.02</i>	+0.20	+0.37	+0.10	+0.02
\$ per child	<i>-\$19</i>	+\$303	+\$497	+\$167	+\$26
△ Allowances					
% GDP	<i>-0.03</i>	<i>-0.24</i>	<i>-0.23</i>	+0.04	<i>-0.10</i>
\$ per child	<i>-\$29</i>	<i>-\$364</i>	<i>-\$307</i>	+\$68	<i>-\$131</i>

Notes: Spending decreases in *italics*. Change in share of GDP was calculated by subtracting the share of GDP spent on each policy in the first year before the quota law from the share spent in the most recent year for which data is available after a quota law was passed (2011). This was converted to real spending changes per child using GDP, current PPPs (USD) data from OECD National Accounts, and World Bank population data.

are funding using aggregate spending data. It could be longer periods of low-paid leave, which are arguably bad for women’s employment, or shorter periods of high-paid leave, which are considered to be positive. As a check on this problem, I used the same baseline model to estimate the effect of a quota law on the total number of weeks and the wage replacement levels of maternity and parental leave, as measured by Gauthier and Bortnik’s Comparative Maternity, Parental and Child Care Leave and Benefits Database (models not included to save space) (Gauthier & Bortnik 2011). High wage replacement levels in particular are easy to interpret as beneficial for maternal employment. As in Model 4, no significant effects were found.¹⁷

Why do quotas lead to more child care spending but not leave policy spending? One interpretation might be that, again, it’s about relative priorities given limited budgets. Child care is a bigger problem for many countries. While most countries have established paid leave policies (of various lengths), there are still large cross-country differences in the provision of public child care, especially for children under three (Commission 2013). If the budget, or women’s political power, is limited they might choose to support child care over other policies.

Several control variables emerge as statistically significant. Higher GDP per capita and the overall level of social expenditures are both associated with more spending on all work-family

¹⁷I also ran models including a control variable for Christian Democrat party power (share of cabinet seats Christian Democrat, lagged by 2 years), because previous research suggests that religious parties are particularly likely to influence work-family policies (e.g., Wennemo 1994; Morgan 2006). The main findings do not change.

policies except for child care. The higher the birth rate, the greater the spending on child care and parental leave. Higher levels of unionization are associated with less overall spending on family policies. Contrary to expectations, membership in the EU seems to hinder overall work-family policy spending, and spending on child care and parental leave.¹⁸

One concern might be that the lagged percentage of women in parliament is not significant, a result that also appeared in the analysis of party positions in Chapter 5. As previously discussed this could be a legacy of the fact that quotas are often passed in countries with low levels of women's representation. However, women's representation is also a mechanism in the causal story linking quotas to outcomes. I further investigate the indirect effect of women's representation on policy outcomes in Appendix C. The Appendix presents evidence suggesting that, in line with theory, the effect of a quota law is at least partially mediated by increased numbers of women in office.

Hypothesis 3 suggests that the size of the preference gap between men and women conditions the effect of a quota law, and that we should expect larger changes to policy outcomes in settings where the preference gap is relatively high. To test this I include the average *Preference Gap* as an interaction term with *Quota Law*. The *Preference Gap* variable is the same index of average country-level gender gaps in preferences for maternal employment shown in Figure 3. The interaction term tells us whether a quota law is accommodated or hindered in the context of different attitudes towards maternal employment. Models 5 and 6 (Table 4) shows that the attitudinal context does matter in this sense. The change in spending in response to a quota law is higher in countries with higher gender gaps. For example, in the regression on family allowances (Model 5), the coefficient on quota law decreases from -0.07 in a country with a small (3%) average gender gap in preferences to -0.24 in a country where the gap is much larger (10%). Similarly in the regression on child care spending (Model 6) the coefficient on quota rises from 0.03 in a country with a 3% average gender gap in preferences (e.g., Portugal) to 0.13 in a country with a 10% preference gap (e.g., Belgium).¹⁹

¹⁸I also ran models including a control variable for Christian Democrat party power (share of cabinet seats Christian Democrat, lagged by 2 years), because previous research suggests that religious parties are particularly likely to influence work-family policies (e.g., Wennemo 1994; Morgan 2006). My main findings do not change.

¹⁹Tests of an interaction between quota law and preference gap in the regressions on overall spending (Model 1) and leave policies (Model 4) were not significant.

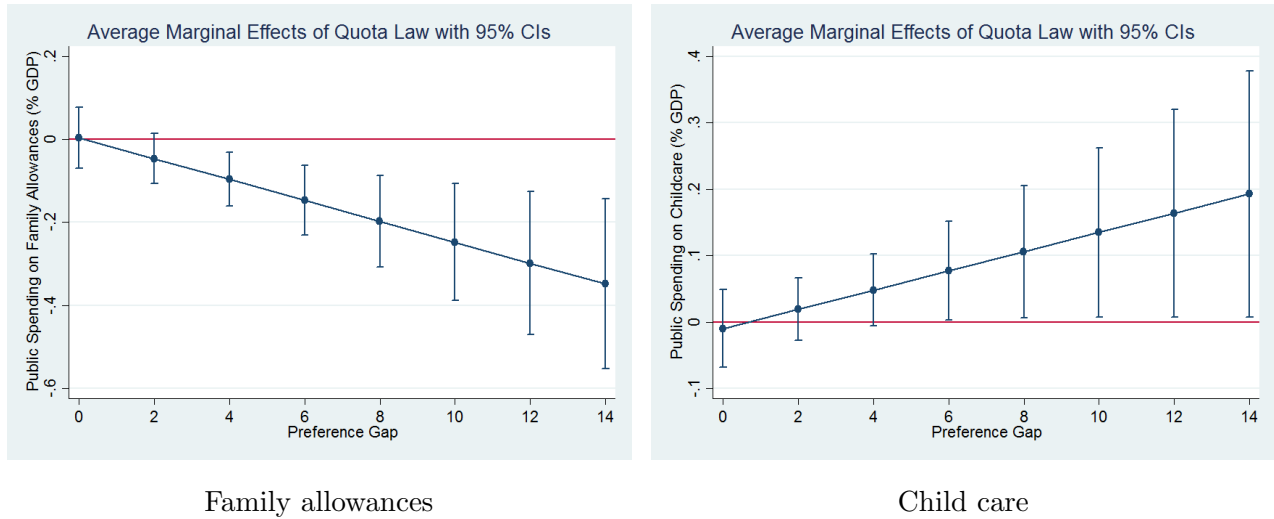


Figure 5: Predicted Change in Spending Outcomes as a Function of Quota Law and Preference Gap
 Notes: Predicted values are based on regression results shown in Models 5 and 6 of Table 4. The units on the x-axis represent the average size of the gender gap in preferences towards maternal employment (all positive values showing that women are more in favor), and the units on the y-axis represent percentage point change in spending.

Figure 5 shows predicted spending on family allowances (on the left) and child care (right) as a function of quota law implementation and average preference gaps between men and women. At low levels of preference gaps, quota laws make only a small difference to spending outcomes. In both cases the predicted level of spending is not statistically different from zero when the preference gap is also zero. Consistent with Hypothesis 3, as the gap in preferences increases the variance in spending outcomes across countries also rises.

Finally, do the specific rules of quota laws – enforcement mechanisms, thresholds, and placement mandates – affect the relationship between quotas and policy change? Quotas with larger thresholds, placement mandates, and stricter enforcement mechanisms are likely to be more successful at increasing the numbers of women in office (Schwindt-Bayer 2009). I explore the influence of the strength of quota laws empirically in Appendix D. The Appendix suggests no consistent evidence that stronger quota rules make a difference to national level policy outcomes. However, I note that the relatively small sample size of national-level data available – particularly when we split quota laws into different types – could impede statistical significance, especially if effects are not very large or occur over time. Future research using more observations over longer

periods of time after a quota law has been in place could shed more light on this question.

Robustness Checks

To show that results are not purely driven by the functional form of the fixed effects model, I provide estimates with leads – what we can think of as a fake quota law, implemented some years prior to the date of the actual quota law. If the quota law is indeed causing the effects on work-family policies, then the leads should not be significant (otherwise they will capture anticipatory effects or pre-existing trends). Specifically, I include indicator variables for 10 years before adoption, equal to 1 only in those years, and 0 otherwise. For example, a quota law was implemented in France from 2002 to 2011, so the fake quota indicator will equal 1 from 1992 to 2001, and 0 otherwise.²⁰

I run these placebo test regressions for significant results, spending on family allowances and child care. Table 6 displays the results, which show small and statistically insignificant relationships between the fake quota law and policy outcomes in both models. The fake quota law is very close to zero in both cases, providing no evidence of anticipatory effects within countries about to adopt a quota. I also ran similar regressions where the date of the quota law was moved back by five and three years, respectively, and obtained the same null results (not shown to save space). The results suggest no evidence that estimated effects are an artifact of the fixed effects design, or that effects are driven by pre-trends idiosyncratic to this particular set of countries. Instead, effects are only observed after the quota law has been implemented. The lack of a systematic association between the fake quota law and policy outcomes is consistent with the causal interpretation of the main results.

According to my argument, quota laws should only affect spending on issues over which women and men disagree. To test this theory I run another set of placebo regressions on spending in areas not characterized by a significant gender gap in preferences. The issues with the smallest gender gaps in preferences are education spending and the government’s responsibility to provide a living standard for the elderly, financial help to university students, and health care for the sick (see

²⁰Autor (2003) uses a similar strategy. While I would like to also add lags to explore the long-run effects of quota adoption, many of the countries in my sample have only recently implemented a quota law.

Table 6: Placebo Test of Significant Results

	(1) Family allowances	(2) Child care
Fake Quota Law (Quota Law _(t+10))	-0.013 (0.029)	0.021 (0.026)
% Women in Parliament _(t-2)	0.002 (0.001)	0.002 (0.001)
GDP per capita _(t-2)	0.002*** (0.001)	-0.000 (0.000)
Female Labor Force Part. _(t-2)	-0.007 (0.009)	0.009 (0.006)
Left Cabinet _(t-2)	-0.000 (0.000)	0.000 (0.000)
Party Quota _(t-2)	0.001 (0.000)	0.000 (0.000)
Union Density _(t-2)	-0.008** (0.003)	-0.003* (0.001)
Wage Bargaining Level _(t-2)	-0.009 (0.010)	-0.001 (0.006)
Fertility Rate _(t-2)	-0.053 (0.079)	0.254*** (0.047)
EU Membership _(t-2)	-0.033 (0.051)	-0.118** (0.052)
Social Expenditures _(t-2)	0.027*** (0.006)	0.003 (0.004)
Post-1997		0.444*** (0.092)
Constant	1.362*** (0.455)	-0.748*** (0.272)
N	639	593
R-squared	0.64	0.77
Country fixed effects	Yes	Yes
Year fixed effects	Yes	Yes

Notes: Analysis carried out using the `panelAR` package for R version 3.2.1. Prais-Winsten regressions, with panel corrected standard errors in parentheses.

Signif. codes: *** 0.01 ** 0.05 * 0.10

Figure 2). The majority of both men and women support spending / intervention on these issues, and differences are typically not statistically significant. However, the last of these (health care for the sick) is difficult to interpret given the large gender gap that exists on whether the government should spend more money on healthcare. Because of this, I focus on public expenditure on *Old Age Benefits* and *Education* here.²¹

Models 1 and 2 of Table 7 report the results from models regressing public spending on old age benefits and education on quota laws. *EU Membership* is not included in Model 2 (Education) because there is not enough variation in the time period covered (1998 to 2010). Model 1 (Old Age Benefits) includes data from 1980 to 2011, like the main models shown in Table 4. Providing additional support for my argument, estimates show no significant association between quotas and spending in these areas. When male and female political preferences are virtually indistinguishable, as in old age benefits or spending on education, quota laws do not matter to spending outcomes.

The theory also suggests that quota laws should be especially important for shifting orthogonal policies, those not aligned with the main left-right dimension in politics. To test this, I run a set of regressions on spending in areas that are characterized by a gender gap in preferences, but also fall within the main left-right policy dimension. The dependent variables are public spending on *Overall Social Policies* and *Health Care*.²² These represent the policy areas with the next-largest gender gap in preferences, after maternal employment (see Figure 2).

Models 3 and 4 of Table 7 report the results from models regressing public spending on social policies and health care on quota laws. The estimates show no significant link between quotas and spending in these areas, providing additional evidence to support the credibility of the theoretical framework proposed. Quotas seem to be most effective at shifting orthogonal issues, on which parties have not yet staked a claim.

²¹Both variables measure public expenditure as a percentage of GDP. *Old Age Benefits* includes standard and early retirement pensions, and in-kind benefits including residential care and home-help services, while *Education* includes public expenditure on all levels except for pre-primary education. Data come from the OECD via the Comparative Welfare States Dataset 2014 (Brady, Huber & Stephens 2014).

²²Both variables measure public expenditure as a percentage of GDP. *Overall Social Policies* measures total public social expenditure, while *Health Care* includes public expenditure on health care, both cash and in-kind benefits. Data come from the OECD via the Comparative Welfare States Dataset 2014 (Brady, Huber & Stephens 2014).

Table 7: Placebo Tests for Other Issue Areas

	(1) Old Age Benefits	(2) Education	(3) Overall Social Policies	(4) Health Care
Quota Law _(t-1)	-0.081 (0.154)	-0.051 (0.076)	-0.231 (0.274)	-0.097 (0.105)
% Women in Parliament _(t-2)	-0.025** (0.010)	0.011 (0.009)	-0.018 (0.021)	-0.015** (0.007)
GDP per capita _(t-2)	-0.003 (0.002)	0.005*** (0.002)	-0.003 (0.003)	0.001 (0.001)
Female Labor Force Part. _(t-2)	-0.093*** (0.033)	0.116** (0.047)	-0.051 (0.069)	-0.027 (0.021)
Left Cabinet _(t-2)	0.001* (0.001)	0.000 (0.001)	0.002* (0.001)	0.001* (0.000)
Party Quota _(t-2)	0.001 (0.002)	-0.002 (0.001)	-0.001 (0.003)	-0.002* (0.001)
Union Density _(t-2)	0.005 (0.009)	-0.019 (0.015)	-0.001 (0.019)	-0.025*** (0.006)
Wage Bargaining Level _(t-2)	-0.016 (0.035)	-0.053 (0.032)	-0.003 (0.068)	-0.038 (0.028)
Fertility Rate _(t-2)	-0.577* (0.296)	-0.024 (0.393)	-0.159 (0.685)	0.324 (0.213)
EU Membership _(t-2)	0.097 (0.176)		-0.159 (0.439)	-0.161 (0.139)
Social Expenditures _(t-2)	0.135*** (0.026)	0.080*** (0.026)		0.045** (0.018)
Constant	6.736* (1.753)	-2.348 (2.010)	13.838 (3.257)	4.898 (1.044)
N	603	224	651	601
R-squared	0.79	0.95	0.82	0.76
Country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes

Notes: Analysis carried out using the `panelAR` package for R version 3.2.1. Prais-Winsten regressions, with panel corrected standard errors in parentheses.

Signif. codes: *** 0.01 ** 0.05 * 0.10

Taken together, the models strongly support the importance of a quota law as one way of facilitating congruence between women's policy preferences and outcomes. The implementation of a quota law is a statistically significant determinant of greater spending on child care, and less spending on family allowances. The fact that effects are different for different types of family policies is strong evidence that results are not driven by some broader process that increases both spending and adopting quotas simultaneously. Indeed, Table 7 shows that there were no significant changes to education, health, or overall social spending in these countries, which we might expect if some broad underlying trend was driving this move towards gender equality in politics. The regression analysis also shows that the strength of a quota law is influenced by the specific cultural context. Greater rates of policy change are found in countries where the gap between women and men's preferences on maternal employment is larger.

Conclusion

This paper has examined the impact of newly popular quota laws on work-family policies in advanced democracies. It finds that quota laws are an effective tool for increasing the substantive representation of women's interests. Quota laws lead to more spending on child care and less on family allowances, changes that are in line with women's greater preferences for maternal employment. The size of these effects is larger in countries with larger gaps in preferences (e.g., France), but still significant even for countries with relatively small gaps (e.g., Portugal). These policy changes are important in their own right, but also have implications for broader social welfare outcomes. There is much room for future research looking at related micro-level outcomes, where we may see trade-offs emerging. For example, are lower-income women better off, given quotas reduce spending on family allowances and child care provision is likely to still be limited? Could quotas lead to a trade-off where educated, professional women benefit at the expense of lower-income women? What about children? Maternal employment has been shown to be one of the main safeguards against child poverty (Lichter & Eggebeen 1994), but this assumes a high quality care results from public investment.

Quota laws are often viewed with derision, as artificial and even undemocratic mechanisms of altering the composition of policymaking bodies. The results presented here suggest that quotas cannot be dismissed so easily. Even in the ‘most difficult’ institutional context of parliamentary democracies, quota laws lead to change in the direction of women’s aggregate preferences – and thus increase democratic responsiveness. However, the story is not as simple as a direct link between women’s descriptive and substantive representation, at least not in the short term. Instead, case studies suggest that quota laws are effective mainly because the law, and associated increase in public awareness, leads parties to prioritize women’s concerns. The findings add evidence suggesting that gender-related public policies could have their own effects on public attitudes, political elites, and the subsequent policy-making process (Pierson 1993; Campbell 2003). While the focus here has been gender, quotas also exist for other dimensions of identity such as ethnicity. There is much room for further studies along these lines.

The findings also point to fruitful new directions for models of the policy process and welfare state development. The theory presented here suggests that mechanisms aimed at more equal representation like quotas are especially likely to shift outcomes on issues which are: 1) characterized by a gap in preferences, and 2) orthogonal to the main left-right party dimension. This framework can be used to identify and test other potential outcomes of interest – not only for women but for other identity groups as well. One promising issue area is violence against women, which is both relatively new to the political agenda and characterized by a gender gap in preferences, with women preferring to see tougher laws.²³

The analysis presented here suggests that quotas lead to change in the composition of work-family policy spending in the direction of women’s preferences, but it cannot tell us why. An interesting topic for future research would be to explore the causal mechanisms that link quotas to social policy change. Do increased numbers of women following a quota law shore up support and pressure parties to change policy priorities? Do ‘quota women’ feel a particular obligation or mandate to do so, or might this be a more straightforward ‘critical mass’ effect? Or, as an

²³Eurobarometer 73.2: Humanitarian Aid, Domestic Violence Against Women, and Mental Well-Being, February-March 2010.

alternative possibility, do party leaders shift their attention to women's preferences in response to changing public opinion after a quota law passes? In-depth case studies of countries that are otherwise similar but differ on passing a quota law (my next project) could shed light on this important question.

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Appendix

A: Gender Gap in Preferences for Maternal Employment, Highly Educated

Figure A1 shows that the gender gap in preferences for maternal employment tends to increase at higher education levels. This signals that educated women, who are more likely to be in the workforce, even more strongly support maternal employment. Note that for the quota countries of Spain and Portugal, the gap increases significantly. Because women in parliament are likely to be higher status, well-educated individuals this is all the more reason to think that they will be likely to prioritize these issues in office – even in more conservative countries like Spain and Portugal.

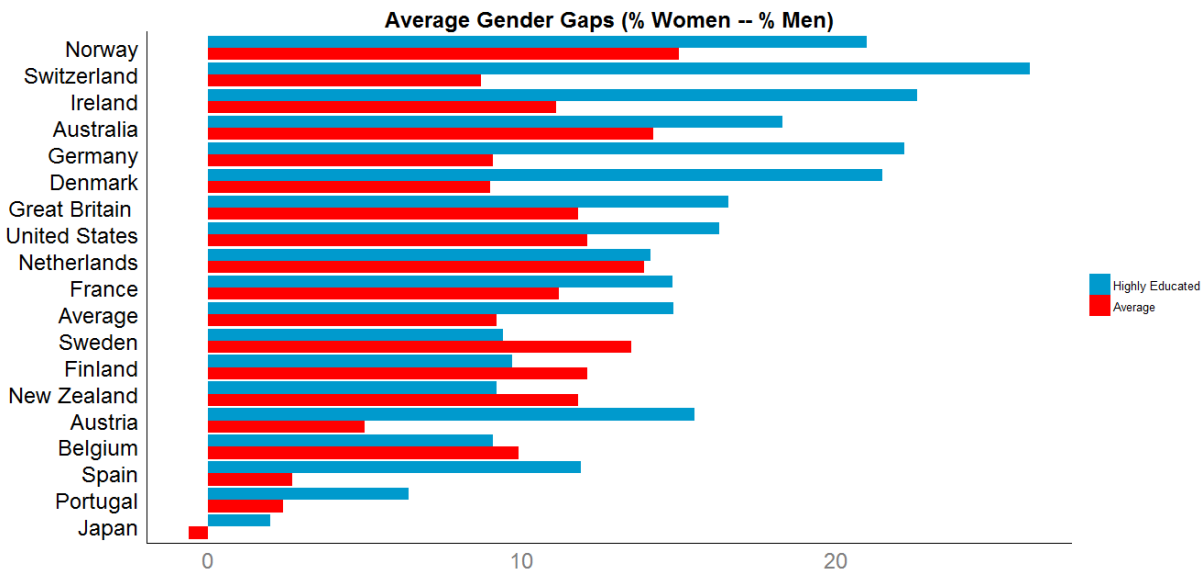


Figure A1: Average v Highly Educated Gender Gaps for Maternal Employment

Notes: Average (see Figure 3) compared to gender gaps in highly educated subgroup (2002 ISSP data). Figures are the share of women minus the share of men who disagree with the statement, 'A pre-school child is likely to suffer if his or her mother works.' High education level is defined as some post-secondary education and above.

B: Sources and Summary Statistics for Data Used in Analysis

Table B1: Summary Statistics, 22 Countries

Variable	M	SD	Min	Max	N	Data source
Overall Family Policy Spending	1.96	1.07	0.15	4.85	651	OECD SOCX
Family Allowances	0.92	0.56	0.82	2.82	690	OECD SOCX
Child care	0.49	0.51	0	2.01	638	OECD SOCX
Parental Leave	0.24	0.25	0	1.42	643	OECD SOCX
Old Age Benefits	6.76	2.23	2.56	12.98	651	CWS 2014
Education	5.23	1.02	3.34	7.75	224	CWS 2014
Health Care	5.76	1.21	0	8.97	648	CWS 2014
Overall Social Policies	20.97	5.14	9.90	35.60	651	CWS 2014
Quota Law _(t-1)	0.02	0.16	0	1	704	Own data
% Women in Parliament _(t-2)	13.76	11.39	0	47.3	704	CWS 2014
GDP per capita _(t-2)	213	101	36	816	704	CWS 2014
Female Labor Force Part. _(t-2)	39.74	5.92	17.86	48.70	704	CWS 2014
Left Cabinet _(t-2)	34.14	39.31	0	100	704	CWS 2014
Party Quota _(t-2)	12.08	22.69	0	99	704	Own data
Union Density _(t-2)	40.69	18.41	7.57	87.44	702	CWS 2014
Wage Bargaining Level _(t-2)	3.12	1.34	1	5	704	CWS 2014
Fertility Rate _(t-2)	1.97	0.57	1.15	4.12	704	CFP 2011
EU Membership _(t-2)	0.51	0.50	0	1	704	EU 2015
Social Expenditures _(t-2)	20.96	5.15	9.90	35.68	645	OECD SOCX
Preference Gap	9.19	4.62	-0.56	14.96	704	Own data

Notes:

OECD SOCX is the OECD Social Expenditures Database, accessed in December 2014.

CWS 2014 is the Comparative Welfare States Data Set, February 2014 version (Brady, Huber & Stephens 2014).

CFP 2011 is the Comparative Family Policy Database, 2011 (3.0) version (Gauthier & Bortnik 2011).

EU 2015 is the list of EU member states available from the European Union on europa.eu (2015).

Original data on party quotas were compiled using secondary literature, party documents, and correspondence with political party representatives (For further details, see Weeks 2013).

C: Mediation Analysis: Women’s Representation as a Mechanism

The baseline specifications in Table 4 present the overall effect of a quota law, controlling for potential confounders including the share of women in parliament. Women in parliament is included as a control because it is a good proxy for general taste or attitudes towards women in politics, a potentially important confounder. The results show that quota laws lead to change in spending priorities even controlling for trends in the share of women in parliament. However, as previously discussed there is good reason to believe that the share of women in parliament is also part of the causal chain linking quotas to policy outcomes. To investigate the indirect effect of increased women’s representation due to a quota law, I follow Kenny and colleagues’ four steps for showing mediation effects (Baron & Kenny 1986; Judd & Kenny 1981, 2010). These can be summarized as: 1) Show that the causal variable is correlated with the outcome; 2) Show that the causal variable is correlated with the mediator; 3) Show that the mediator affects the outcome variable; and 4) For complete mediation, show that the effect of the causal variable on the outcome while controlling for the mediator is zero.

Recall that in the baseline specifications *Quota Law* is lagged by one year and all other covariates, including women’s representation, are lagged by two years, in order to alleviate concerns about post-treatment bias. In the following analysis of women’s representation as a mechanism I use a measure of women in parliament that is contemporaneous with quota law implementation, i.e. lagged by only one year. Table C.1 presents the results, which are based on Model 3 of Table 4 (where the dependent variable is child care spending). All models include the full set of controls shown in Table 6.1 specifications (not shown to save space).

Model 1 shows that *Quota Law* has an overall effect on child care spending. Without women’s representation in the model, the size of the coefficient on *Quota Law* is 0.08, and is significant at conventional levels ($p=0.04$). Second, Model 2 shows that the causal variable of interest is correlated with the mediator: *Quota Law* is associated with 4.4 percentage point increase in women in parliament. Third, Model 3 shows that the mediator is associated with the outcome. Women’s representation is associated with a statistically significant increase in child care spending.

Table C.1: Mediation Analysis of Women’s Representation

	(1) Child Care	(2) % Women in Parliament	(3) Child Care	(4) Child Care	(5) Child Care	(6) Child Care
Quota Law _(t-1)	0.08** (0.04)	4.4*** (0.84)		0.05 (0.04)	-0.01 (0.04)	
% Women in Parliament _(t-1)			0.01*** (0.00)	0.01*** (0.00)		0.00 (0.00)
Quota Law _(t-1) * Preference Gap					0.02** (0.01)	
% Women in Parliament _(t-1) * Preference Gap						0.00** (0.00)
Constant	-1.24*** (0.32)	-28.32*** (5.76)	-1.07*** (0.31)	-1.08*** (0.31)	-1.19*** (0.32)	-1.07*** (0.32)
N	893	624	593	593	593	593
R-squared	0.75	0.86	0.73	0.74	0.76	0.73
Rho	0.74	0.63	0.76	0.75	0.74	0.75
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Prais-Winsten regressions, with panel corrected standard errors in parentheses. All models include the full set of controls shown in Table 6.1 specifications (not shown to save space).
Signif. codes: *** 0.01 ** 0.05 * 0.10

For every 10% increase in women’s representation, there is a 0.10 percentage point increase in child care spending. Finally, to establish total mediation step 4 assesses the relationship between the causal variable and outcome when the mediator is included in the model. Model 4 shows that the effect of a quota law is significantly reduced when women’s representation is included in the model. Including women’s representation, the coefficient on *Quota Law* decreases to 0.05 and is not significant (p=0.18). This suggests that the effect of a quota law is at least partially mediated by increased numbers of women in office.

As in the baseline results, Table C.1 shows that the effect of *Quota Law* is conditional on the size of the gender preference gap. The interaction between *Quota Law* and *Preference Gap* is now significant at the 0.05 level (Model 5). Model 6 shows that the same is true of the interaction between *Preference Gap* and the mediator *% Women in Parliament*. This is consistent with the logic of the argument about the size of the gender gap in preferences, i.e., greater numbers of women in parliament should lead to policy change only on issues on which women and men have different preferences. The key take-aways here are that quotas work at least partially through

the mechanism of women's representation, and the positive result for child care spending is even stronger when models take this into account.

D: Quota Rules and Spending Outcomes

Table D.1 addresses questions about whether the specific rules of the quota provision matter for spending outcomes. These models use the same previously described fixed effects specifications shown in Models 2 and 3 of Table 4. All models include the full set of controls shown in Table 4 specifications (not shown to save space).

Table D.1: Provisions of Quota Law and Spending Change

	(1) Family Allowances	(2) Child Care	(3) Family allowances	(4) Child Care	(5) Family Allowances	(6) Child Care
Quota, strict sanctions	-0.15*** (0.05)	0.04 (0.03)				
Quota, weak sanctions	-0.07 (0.04)	0.05 (0.04)				
Quota, 50% threshold			-0.17* (0.09)	0.11 (0.08)		
Quota, < 50% threshold			-0.08** (0.03)	0.03 (0.02)		
Quota, placement mandates					-0.12** (0.05)	0.03 (0.03)
Quota, no placement mandates					-0.11* (0.06)	0.10* (0.05)
Constant	1.29*** (0.44)	-0.75*** (0.27)	1.31*** (0.44)	-0.71*** (0.27)	1.39*** (0.43)	-0.78*** (0.27)
N	639	593	639	593	639	593
R-squared	0.66	0.78	0.67	0.77	0.68	0.79
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Analysis carried out using the `panelAR` package for R version 3.2.1. Prais-Winsten regressions, with panel corrected standard errors in parentheses.

Signif. codes: *** 0.01 ** 0.05 * 0.10

Models 1 and 2 of Table D.1 separate the quota variable into laws that require parties to comply with the law for the list to be accepted (*Quota, strict sanctions*, representing Spain and Belgium after a quota law was passed) and those that do not (*Quota, weak sanctions*). The results suggest that quotas with strict enforcement rules have larger effects on family allowances spending than quotas without, but a Wald test finds that the difference between these coefficients is not statistically significant. Looking at child care (Model 2), the results suggest no difference between the outcomes for quotas with and without strict enforcement mechanisms.

Models 3 and 4 separate the quota variable into laws that require women to make up a high threshold, 50% of the list (*Quota, 50% threshold*, representing France after it passed a quota law and Belgium from 2007), versus those that do not (*Quota, < 50% threshold*). Again for the dependent variable of family allowances (Model 3) we see a larger effect for the stricter provision (50% threshold), but the difference between coefficients on different thresholds is not significant. For child care (Model 4), the results suggest a larger effect for quotas with a threshold under 50%, although again a Wald test of coefficients finds no statistically significant difference.

Models 5 and 6 test the impact of placement mandates (when the law includes specific rules about the rank-ordering of candidates, represented by *Quota, placement mandates*). The coefficients on placement rules are very similar for family allowances, suggesting that this provision does not condition spending in this area. In the area of child care spending larger effects are seen for quotas without placement mandates. However a Wald test of the difference between quotas with and without placement mandates finds that the difference between these two coefficients is not statistically significant.

In summary, the results here suggest no strong or consistent evidence that stronger quota laws lead to larger changes in spending on work-family policies. This finding is not very surprising given that results from Chapter 5 find little evidence of a relationship between quota provisions and party position change, with the exception of enforcement mechanisms. However, it is worth noting the smaller sample size of national-level data used here, compared to party-level data used in Chapter 5. It could be that the small sample size – particularly once we start dividing quota rules into different types – precludes statistical significance, especially if effects are not very large or occur over time. More observations over longer periods of time after a quota law has been in place would be helpful in making progress on this question in the future.

