

THE RELATIONSHIP BETWEEN FEMALE PARLIAMENTARY REPRESENTATION AND
THE LENGTH OF PARENTAL LEAVE IN EUROPE

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By

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ABSTRACT

Existing scholarship suggests that the extent of female representation in government at the national and subnational levels is positively correlated with the existence of equal pay laws, spending on welfare benefits and public health, and the generosity of policies - including parental leave - that help individuals to reconcile work and family life. I use country-level panel data on 14 European Union countries to examine the relationship between female parliamentary representation and the length of two forms of parental leave available to new mothers: paid parental leave, which entitles recipients to financial benefits during a period of extended parental leave; and protected parental leave, which entitles recipients to comparable employment upon return from a period of extended parental leave. My results suggest that female parliamentary representation has a positive and statistically significant relationship with the length of paid parental leave, but is unrelated to protected parental leave. This study makes a novel contribution to the literature on this topic by differentiating between these two types of parental leave, and my findings add to existing evidence suggesting that greater female representation in government is associated with policy outcomes that advance women's interests.

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INTRODUCTION

Between 1995 and 2015, the average proportion of parliamentarians who were women among countries tracked by the Inter-Parliamentary Union (IPU) increased nearly twofold, from just over 11% to about 22% (IPU, 2015).¹ This increase belies even larger gains made in some regions and countries. The Nordic countries of Sweden, Finland, Denmark, Norway, and Iceland had an average of 42% female members of parliament (MPs) in 2015, while Rwanda and Bolivia crossed the 50% threshold in 2008 and 2014, respectively (IPU, 2015). As the proportion of women holding seats in national legislative bodies around the world increases, and in some cases approaches parity with men, it is important to consider the relationship between gender and policy preferences, as well as the ways in which such preferences may influence the direction of public policy.

Research from multiple countries suggests that women are more likely than men to prioritize policies that increase redistributive spending on social welfare and public health, and that seek to promote gender equality and the general wellbeing of women, children, and families (Shapiro & Mahajan, 1986; Thomas, 1994; Wangnerud, 2000; Poggione, 2004; Funk & Gathmann, 2015; Behabib et al., 2011). There is also international evidence that, once elected, female officeholders are more likely than their male colleagues to support policies that directly affect women, including measures to expand reproductive rights, improve women's access to health services, protect victims of domestic and sexual violence, and promote gender equality (Swers, 1998; Schwindt-Bayer, 2006; Osborn & Mendez, 2010; Schulze, 2013).

¹ More specifically, the proportion of women holding seats in national parliaments in the 193 countries tracked by the Inter-Parliamentary Union increased from 11.3% in 1995 to 22.1% in 2015 (Inter-Parliamentary Union, 2015).

Furthermore, research shows that increases in female representation are correlated with certain concrete policy outcomes. For example, subnational-level research has identified positive relationships between the extent to which local government positions are held by women and the provision of childcare coverage (Norway); levels of municipal welfare spending (United States); and investments in public infrastructure that primarily benefit women (India) (Bratton & Ray, 2002; Holman, 2013; Chattopadhyay, 2004).² Cross-national research has also identified relationships between the representation of women in national governments and the existence of national equal pay laws, the proportion of state spending on public health, and the generosity of policies such as parental leave that help individuals to reconcile work and family life (O'Regan, 2000; Mavisakalyan, 2014; Kittilson, 2008; Atchison & Down, 2009; Atchison, 2015).

Within this field of research, parental leave policies are of particular interest because of their importance to women.³ Several comparative analyses of democratic countries examine the generosity and scope of parental leave policies over time as a function of female representation in government (Schwindt-Bayer & Mishler, 2005; Kittilson, 2008; Atchison & Down, 2009; Atchison, 2015). Using data on parliamentary representation from the IPU and parental leave data from the OECD Family Database, this paper builds on existing literature by examining the relationship between the proportion of female representatives in national parliaments and the

² For more information about these studies, see the subsection entitled “Women in Government: Associated Policy Outcomes” in the Literature Review.

³ Parental leave policies tend to affect women more directly than men. Research from Europe suggests that the uptake of childcare-related leave among fathers is relatively low: while about 40% of EU women reported taking leave related to care for a new child in the 2010 European Union Labour Force Survey, only around 2% of EU men reported doing so (Miani & Hoorens, 2014). It is important to note that there is variation among countries in terms of the proportion of fathers who take parental leave and the length of the leave taken by fathers. Moss (2015) finds that countries that utilize certain policy levers (e.g., nontransferable, individual leave entitlements as opposed to shared family leave entitlements and relatively high replacement rates) tend to have higher rates of take-up (regardless of length) and longer durations of parental leave used by fathers. However, even in Iceland, Norway, and Sweden, where these conditions are met, the majority of the overall days of parental leave available to parents are, on average, still taken by women (Moss, 2015).

generosity of parental leave policies in 14 European Union countries from 1970 to 2014 (inclusive).⁴ Relative to other studies of this topic, mine analyzes the relationship in question over a significantly longer time-period and focuses exclusively on European Union member state countries, which have been exposed to the same European Council directives on maternity and parental leave.⁵ My paper is also the first of which I am aware to differentiate between two fundamentally different types of parental leave – paid and protected – which will be discussed in greater detail in the section following. I find evidence of a positive, significant relationship between the proportion of parliamentarians who are women and the length of paid parental leave, although my results are statistically insignificant for the relationship between female parliamentary representation and protected parental leave.

⁴ The 14 countries included in this analysis are: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom. Supranational research organizations including Eurostat and the OECD refer to these 14 countries and Luxembourg – which constituted the entirety of the European Union’s membership from January of 1995 to April of 2004 – as the “EU-15”. Due to missing data for Luxembourg for several of my key control variables, I exclude this country from my analysis. For more detailed information about the history of European integration and European Union enlargements, see Appendix 1. For years prior to 1990, I use data for the Federal Republic of Germany (West Germany) only. Also, I include only democratic periods of governance for each of the countries in my sample. Therefore, data begin in 1974 for Greece, in 1976 for Portugal, and in 1977 for Spain.

⁵ For more information about the 1992 Pregnant Workers Directive (92/85/EEC) and the 1996 Parental Leave Directive (96/34/EC), since superseded by Directive 2010/18/EU, see the subsequent section.

BACKGROUND

Three types of parental leave policies are relevant to my analysis: maternity leave, paid parental leave, and employment-protected parental leave. Maternity leave policies enable, or in some cases require, women to take leave shortly before or after giving birth (OECD, 2016a). In 1992, the European Council adopted legislation that requires member-state countries to guarantee new mothers a minimum of 14 weeks of paid, employment-protected maternity leave (European Commission, 2016).⁶ The employment-protected nature of European maternity leave means that the law includes a prohibition against dismissing employees who are pregnant or new mothers, including during periods of maternity leave. Although there is some variation in payment amounts, most EU countries guarantee wage replacement rates of between 70% and 100% (Jurviste et al., 2014). The average length of paid maternity leave among EU countries in 2014 was just over 21 weeks, although the length ranged from the legislated minimum of 14 weeks in Sweden and Germany to a maximum of 58 weeks in Bulgaria (Jurviste et al., 2014).

In contrast, parental leave refers to a leave entitlement available to both mothers and fathers for the care of a new child, typically following the period of maternity leave (OECD, 2016a). Directives approved by the European Council in 1996 and 2010 provide new mothers and fathers with an individual entitlement to 16 weeks of employment-protected parental leave, after which time he or she is guaranteed the same or a comparable position upon returning to work (European Commission, 2016).⁷ Although the law does not require that the leave be paid,

⁶ The 1992 Pregnant Workers Directive (92/85/EEC) protects pregnant women from discrimination and guarantees new mothers a minimum of 14 weeks of paid, job-protected maternity leave from work shortly before and following the birth of a child. At a minimum, maternity leave payment rates must be at a rate equivalent to the rate of national sick leave pay (European Commission, 2016).

⁷ The 1996 Parental Leave Directive (96/34/EC) provided an individual, job-protected parental leave entitlement of 12 weeks available to both male and female parents in addition to maternity leave following the birth or adoption of a child (Hall, 1998). Directive 96/34/EC has since been superseded by Directive 2010/18/EU, which increased the

as of 2014, most of the EU-15 provided some form of pay or allowance during at least a portion of the employment-protected parental leave period, with the exception of Greece, Ireland, Spain, and the United Kingdom (OECD, 2016d).⁸ On average, the length of employment-protected parental leave among the EU-15 was just over one year (OECD, 2016d). The following section provides a brief historical overview of the development of maternity and parental leave policies in Europe, followed by an explanation of the terminology used in this paper.

Historical Overview of Parental Leave

Not only was Europe the birthplace of maternity leave, but European countries continue to be at the vanguard of providing generous maternity leave schemes in terms of both length and replacement rates (Kamerman & Moss, 2009). The first country to implement a comprehensive maternity leave policy was Germany in 1883 (Kamerman & Moss, 2009). Over the following 30 years, another 20 countries around the world joined Germany in providing mothers with some form of maternal leave entitlement, often motivated by workplace health and safety concerns (Ruhm, 1998; Kamerman & Moss, 2009). Increases in female labor force participation, coupled with second-wave feminist activism and national political shifts, contributed to further expansions of maternity leave policies in the late 1960s and early 1970s in a number of European countries (Hoskyns, 1996; Gauthier, 1996).

Throughout the 1970s and 1980s, the length of and replacement rates for maternity leave policies in Europe generally increased. Sweden consistently maintained the most generous maternity leave policy among the countries in my sample, whereas the United Kingdom, Greece,

individual leave benefit from 12 weeks to 16 weeks per person and made one month non-transferable (meaning that one month of leave cannot be transferred to the other parent) (European Commission, 2016).

⁸ For a description of the “EU-15,” including the countries that this group includes, see footnote in prior section.

and Ireland consistently had the least generous (Gauthier, 1996).⁹ In 1992, the European Council adopted 92/85/EEC, a binding directive to protect pregnant women from discrimination and guarantee new mothers 14 weeks of paid, protected maternity leave (European Commission, 2016).¹⁰ As of 2014, all EU countries met this standard, and as previously discussed, many provide longer leave than is required by EU legislation (European Parliament, 2014).

In the 1950s, Italy and Austria implemented an additional type of long-term, unpaid maternity leave for women referred to as “childcare leave” (Gauthier, 1996). Some argue that these early childcare leave policies were designed to move women from the labor force back into the home following the end of World War II (Ruhm, 1998). However, the development of childcare leave policies in the 1970s and 1980s in a dozen other European countries was likely motivated more by a desire to provide employed women with the ability to balance the demands of work and family life (Roth, 2008).¹¹

Sweden was the first country to implement a gender-neutral parental leave scheme in 1974, which was structured to align with and promote the Swedish cultural idea of gender equality, *jämställdhet* (Haas, 1992).¹² In 1983, the European Commission advanced a parental leave proposal that would have required EU member states to guarantee new mothers and fathers

⁹ By 1985, Finland and Denmark had increased the length and replacement rate of their maternity leave and joined Sweden in providing the most generous maternity leave among the countries in my sample (Gauthier, 1996).

¹⁰ The standard of a 14-week maternity leave period was originally set by the International Labour Organization (ILO), a specialized United Nations agency that facilitates dialogue between labor organizations, employers, and national governments (European Parliament, 2014; ILO, 2016a). The ILO published its first maternity leave standards in 1921, at that time recommending a minimum benefit period of six weeks of paid, protected leave for new mothers (ILO, 2016b). As of 2000, the ILO recommended increasing the length of maternity leave to a minimum of 18 weeks (ILO, 2016c).

¹¹ EU countries that implemented childcare leave schemes between 1970 and 1990 include: Sweden, the United Kingdom, Germany, France, Finland, Belgium, Luxembourg, Spain, Portugal, Greece, the Netherlands, and Ireland. Non-EU countries that implemented childcare leave schemes between 1970 and 1990 include Canada, Norway, and Australia (Gauthier, 1996).

¹² Haas (1992) translates the term as meaning: “that women and men have the same rights, obligations and opportunities to have a job which gives them economic independence, to care for home and children, and to participate in political, union and other activities in society (pp. 13).”

each three months of non-transferable parental leave, thereby providing a strong incentive for take-up by fathers (Rutherford, 1989; Treib & Falkner, 2006). Although this proposal was never adopted, over ten years later in 1996 the European Council adopted its Parental Leave Directive (96/34/EC), which required EU member states to provide new mothers and fathers with 12 weeks of transferable leave (Hall, 1998). In 2010, this directive was superseded by Directive 2010/18/EU, which increased the minimum length of leave to 16 weeks and requires that at least one month be non-transferable between parents (European Commission, 2016).

There is evidence that the 1996 Parental Leave Directive contributed to changes to the national parental leave policies in most of the EU-15 countries, many of which were forced to implement new binding parental leave laws (Ireland, Luxembourg, the United Kingdom, and Belgium), extend eligibility to fathers or to fathers whose female partner was not employed (Austria, Italy, Germany, Greece, and Portugal), or make other adjustments to expand coverage to more employees under a wider variety of circumstances (Greece, the Netherlands, Denmark, Ireland, Luxembourg, the United Kingdom, France, Finland, Greece, Spain, and Sweden) (Treib & Falkner, 2006; European Parliament, 2014).¹³ Despite this convergence, there is still significant country-to-country variation in the extent of parental leave provided, presenting an ideal laboratory for empirical analysis.

Parental Leave Terminology

This paper uses the term *paid parental leave* to refer to the total number of weeks of paid maternity leave plus paid parental leave available to new mothers, and the term *protected parental leave* to refer to the total number of weeks of employment-protected maternity plus

¹³ As discussed in a previous footnote, I exclude Luxembourg from this analysis due to missing data.

employment-protected parental leave available to new mothers.¹⁴ The general term *parental leave* is used throughout this paper to refer to government policies that provide a statutory right to maternity leave, paid parental leave, protected parental leave, or any combination thereof.¹⁵

¹⁴ As is discussed further in a subsequent footnote, not all paid parental leave in Europe is protected, and not all protected parental leave in Europe is paid (OECD, 2016e). Therefore, I have chosen to include both measures of parental leave in my model as separate dependent variables to ensure that I capture the relationship between the proportion of parliamentarians who are women and the length of parental leave among the countries included in my study as holistically as possible.

¹⁵ This paper excludes leave for the exclusive use of fathers (paternity leave) because research suggests that the uptake of childcare-related leave among fathers is relatively low. As discussed in my Introduction, only around 2% of men in the EU reported taking leave related to the care of a new child in 2010, as compared with about 40% of women in the EU who reported doing so (Miani & Hoorens, 2014).

LITERATURE REVIEW

The present study builds on existing research in the fields of sociology, government, and gender politics. A number of empirical studies show that women tend to have different policy preferences than men and are more likely to support policies that increase gender equality, protect women's health and safety, and redistribute societal resources, although there is also some evidence that political ideology can be a stronger determinant of policy preferences than gender (Shapiro & Mahajan, 1986; Carroll, 1994; Norris & Lovenduski, 1995; Wangnerud, 2000; Poggione, 2004; Funk & Gathmann, 2015). Research focusing on women in government suggests that female officeholders tend to pursue these priorities through speeches, earmark requests, and the introduction of legislation (Osborn & Mendez, 2010; Pearson & Dancey, 2011; Swers, 1998; Thomas, 1994; Tremblay, 1998; Schwindt-Bayer, 2006; Schulze, 2013). Furthermore, researchers have found positive correlations between the degree of female representation in government and the prevalence of policy outcomes that reflect women's policy preferences (O'Regan, 2000; Mavisakalyan, 2014; Holman, 2013; Bratton & Ray, 2002; Chattopadhyay & Duflo, 2004). As noted above, one "women's issue" policy of growing interest in the literature is the length of parental leave, which multiple national and cross-country analyses find to be positively correlated with female representation in government (Schwindt-Bayer & Mishler, 2005; Kittilson, 2008; Atchison & Down, 2009; Williamson & Carnes, 2013; Atchison, 2015).

Women's Policy Preferences

A great deal of evidence supports the notion that women and men sometimes have differing policy preferences. In one of the first comprehensive analyses of opinion polls in the

U.S., Shapiro and Mahajan (1986) find evidence that women tend to express support for “compassion issues” – such as spending on education, health, poverty alleviation, and unemployment programs – at higher rates than men.¹⁶ Similarly, the results of Poggione’s (2004) study of U.S. state legislators suggest that female policymakers are more likely than male policymakers to express support for the protection and expansion of welfare policies, although the gender gap in preferences tends to be larger between ideologically conservative female and male legislators than between ideologically liberal female and male legislators. Relatedly, Carroll’s (1994) study of state- and national-level female candidates running for office in 1976 primaries and general elections provides some evidence that a substantial majority of candidates who are women support reproductive rights protections and the Equal Rights Amendment. It is important to note, however, that Shapiro and Mahajan (1986) find female survey respondents to generally hold more conservative opinions on abortion and women’s rights legislation as compared with men, although they find the gender gap regarding these issues to decrease over time. This suggests that American women in elected office may have somewhat different policy preferences than American women who are not.

Research from outside of the U.S. has identified similar differences between male and female policy preferences. A review of responses to the World Values Survey of numerous countries around the world between 1981 and 2004 shows that women tend to view redistributive policies more favorably than men, even after controlling for factors such as religion, age, income, and political ideology (Behabib et al., 2011). In Switzerland, a country where many

¹⁶ The authors’ study analyzes surveys spanning the period 1952 to 1983 and includes survey data from: NORC General Social Surveys 1972-1983, Gallup 1964-1983, Louis Harris and Associates 1970-1973, the Opinion Research Corporation 1973-1982, and Survey Research Center/Center for Political Studies 1952-1978 (Shapiro & Mahajan, 1986).

federal policy decisions are made directly by voters, Funk and Gathmann (2015) find that female voters are more likely than male voters to support policies that promote equal rights between women and men, increase benefits and protections for the elderly and the disabled, and increase the length of maternity leave. Norris and Lovenduski's (1995) analysis of the British Candidate Study of "party elites" also suggests that women tend to express support for redistribution and welfare programs, equal opportunity legislation, and reproductive rights at higher rates than men.¹⁷ Similarly, Wangnerud's (2000) study of Swedish members of parliament provides evidence that female MPs are more likely than male MPs to rank policy areas such as gender equality, elder care, healthcare, and family policy as areas of personal interest, although the size of the gender gap depends on party affiliation. Together, this research suggests that women, particularly those in elected office, tend to support and prioritize redistributive welfare policies, policies that seek to increase gender equality, and programs that benefit vulnerable populations.

Women in Government: Descriptive vs. Substantive Representation

In the relevant literature, a distinction is made between "descriptive" representation and "substantive" representation. The concept of descriptive representation relates to a representative's observable characteristics (e.g., race and gender), while substantive representation relates to a representative's efforts to advocate on behalf of the interests of a given group (Pitkin, 1967; Amundsen, 1971). There is evidence to support the idea that female officeholders act as substantive representatives of the policy preferences of women as outlined above. First, research suggests that women in public office see themselves as representatives of

¹⁷ Norris and Lovenduski (1995) use the umbrella term "party elites" to cover all British Parliamentary applicants and candidates, including incumbent MPs.

women's interests and consider it their duty to represent those interests (Reingold, 2000; Wangnerud, 2000; Carroll, 2002; Schwindt-Bayer, 2006).

Second, a number of empirical studies indicate that, relative to male legislators, female legislators are more likely to speak on behalf of women's issues, to vote for legislation that tends to advance women's interests, and to introduce bills that support women's policy priorities, although party membership and ideology can be stronger determinants (Osborn & Mendez, 2010; Pearson & Dancey, 2011; Swers, 1998; Thomas, 1994; Tremblay, 1998; Schwindt-Bayer, 2006; Schulze, 2013). Research on women in the U.S. Congress shows that congresswomen tend to mention women and women's issues in floor speeches and to vote in support of bills that reflect women's preferences more often than do congressmen (Pearson & Dancey, 2011; Osborn & Mendez, 2010; Swers, 1998). For example, in their analysis of one-minute floor speeches in the U.S. House of Representatives between 1993 and 2008, Pearson and Dancey (2011) find that both Democratic and Republican congresswomen are significantly more likely to mention women and girls in their speeches than are congressmen. Similarly, Osborn and Mendez's (2010) evaluation of floor speeches in the U.S. Senate between 1999 and 2000 suggests that female senators tend to talk more about women's healthcare, crimes against women, and family issues than male senators. Swers' (1998) work on voting records also provides evidence that congresswomen vote in support of bills that advance women's interests, e.g., women's healthcare and safety, at a much higher rate than do congressmen, although she finds ideology to overwhelm gender as a predictor of voting in support of initiatives less specifically directed at women's interests, such as policies related to education and families.

Although most research on substantive representation by women in legislatures is from the U.S., Tremblay's (1998) study of MPs in Canada also finds that female MPs are more likely

than male MPs to draw attention to women's issues via legislative tools such as legislative bills and policy statements. Similar to Swers' (1998) work in the U.S., Tremblay's study does not show that female legislators introduce proposals related to children and families more often than male legislators. However, Schwindt-Bayer's (2006) analysis of female legislators in the three Latin American countries of Argentina, Colombia, and Costa Rica suggests that women are more likely than their male counterparts to sponsor bills related to women's issues, family and children's issues, education, and health. Overall, then, there is evidence that women in public office do act as substantive representatives of women, particularly on women's issues, and in some cases also in areas that are likely to be of disproportionate interest to women, such as policies that seek to promote the wellbeing of children and families.

Women in Government: Associated Policy Outcomes

Do increases in the substantive representation of women affect the implementation of their preferred policy outcomes? Many studies posit the existence of a threshold level of representation at which the "token" group's preferences become more likely to result in substantive outcomes, although the validity of this "critical mass" theory has been widely contested (Kanter, 1977; Dahlerup, 1988; Grey, 2006; Dahlerup, 2006). Researchers who use this theoretical framework suggest that critical mass is reached at levels of representation of between 15% and 40%, with 30% adopted as a target number by the United Nations (Dahlerup, 2006). However, the lack of consistency in the results of empirical studies in terms of whether such a threshold exists (and where it lies) casts doubt on the theory's practical applications (Crowley, 2004; Childs, 2006; Dahlerup, 2006).

Regardless of the validity of this particular theory, a great deal of evidence suggests that higher levels of female representation in public office are associated with the enactment of more female-friendly labor policies and with increased levels of spending on public health, welfare, childcare, and infrastructure relevant to women (O'Regan 2000, Mavisakalyan 2014, Holman 2013, Bratton & Ray 2002, Chattopadhyay & Duflo 2004, Svaleryd 2009). O'Regan's (2000) analysis of panel data on 22 industrialized democratic countries over a 35-year period indicates that there is a positive correlation between the proportion of female policymakers and the existence of equal wage, parental leave, and childcare policies. Similarly, Mavisakalyan's (2014) study of 125 countries reveals a strong positive relationship between the proportion of cabinet-level positions held by women and public health spending as a percentage of GDP.

Additional research on subnational governments also suggests that there are associations between female representation in government and certain policy outcomes. For example, the results of a recent study of U.S. municipalities provides evidence that cities with female mayors tend to have higher levels of welfare spending than cities with male mayors, while research from Norway suggests that the proportion of local council seats held by women is positively associated with rates of childcare coverage (Holman, 2013; Bratton & Ray, 2002). Results from a natural experiment in India, where a portion of local council seats in some locales are reserved for women, also finds evidence that Village Councils with greater female representation tend to allocate more public funding to infrastructure projects deemed to be of greater importance to female community members (Chattopadhyay & Duflo, 2004).¹⁸ In sum, there is research to

¹⁸ Chattopadhyay and Duflo (2004) find evidence of a positive relationship between women's level of representation as Village Council leaders in two states in India (West Bengal and Rajasthan) and investments in local infrastructure projects considered to be particularly relevant to women's interests based on formal records of complaints, disaggregated by gender, filed to Village Councils (more specifically, women in West Bengal were more likely than men to file complaints related to drinking water and roads, while women in Rajasthan were more likely than men to

support the idea that increases in the descriptive and substantive representation of women in government are associated with policy outcomes aligned with women's policy preferences.

The Relationship between Female Representation and the Generosity of Parental Leave Policies

A growing body of national and cross-national research examines the relationship between female representation and the generosity of parental leave benefits (Schwindt-Bayer & Mishler, 2005; Kittilson, 2008; Atchison & Down, 2009; Williamson & Carnes, 2013; Atchison, 2015). In their cross-sectional analysis of U.S. states, Williamson and Carnes (2013) find that states with greater female representation in state legislatures tend to provide more generous parental leave policies. Other analyses adopt a cross-national approach, as I do for this study. For example, Kittilson's (2008) analysis of 19 Western democratic countries between 1970 and 2000 provides evidence that the percentage of parliamentarians who are women has a significant and positive relationship with the generosity of parental leave policies, even when controlling for the ideology of the dominant party.¹⁹ However, in their similar study of 18 Western democracies between 1980 and 2003, Atchison and Down (2009) find no relationship between female parliamentary representation and parental leave after controlling for the proportion of cabinet-level ministers who are women.²⁰ However, the authors do find evidence of a positive relationship between female cabinet-level representation and the length of parental leave among the countries in their sample (Atchison & Down, 2009).

file complaints related to drinking water; and local investments in these kinds of infrastructure projects were positively correlated with the proportion of leaders who were female).

¹⁹ Kittilson's (2008) study includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

²⁰ Atchison and Down's (2009) study includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, and the United Kingdom.

Similarly, Atchison's (2015) recent study shows female cabinet-level representation, but not female parliamentary representation, to be related to her composite measure of labor market policies that benefit women in her analysis of 19 Western democracies between 1970 and 2005.²¹ Taken as a whole, this research indicates that the level of women's representation may influence the generosity of parental leave benefits, although it is unclear whether parliamentary representation, in particular, is a significant factor – particularly after one accounts for the share of cabinet-level positions held by women.

The Present Study

The present study builds upon the prior literature on this topic by examining the relationship between the proportion of parliamentarians who are female and the length of parental leave, measured in weeks, among 14 EU countries between 1970 and 2014 (inclusive).²² I seek to enhance the field's understanding of this topic by evaluating this relationship over a significantly longer time-period than do previous studies. In addition, I focus exclusively on EU countries, as they have all been exposed to the same EU-wide European Commission directives on pregnancy protection and parental leave and thus are more easily comparable than other assortments of Western democracies. In light of the meaningful differences in the results of Kittilson's (2008) and Atchison and Down's (2009) studies, I also control for female cabinet-level representation. Finally, while previous work has relied on a composite measure of parental leave, my paper differentiates between paid and protected parental leave because it is possible that my relationship of interest may differ for these distinct types of parental leave.

²¹ Atchison's (2015) study includes the 18 countries included in the previous footnote and Japan.

²² As previously noted, my study includes the European Union countries of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

CONCEPTUAL FRAMEWORK

As previously discussed, parental leave policies are widely perceived to be directly related to women's interests because the parental leave take-up rate is typically higher, and the period of leave taken is typically longer, for mothers than for fathers (Miani & Hoorens, 2014; Moss, 2015). Based on the research reviewed in the previous section, I hypothesize that there is a positive relationship between the percentage of parliamentarians who are women and the length of parental leave in the Western European countries included in my study (Atchison, 2015; Atchison & Down, 2009; Kittilson, 2008).

Below, I describe a range of factors that are likely related to the generosity of parental leave and are potentially also related to the percentage of parliamentarians who are women. A comprehensive examination of the literature suggests that there are several broad categories of country-level factors that should be incorporated into my analyses, including national political characteristics, demographic characteristics, and economic characteristics. Each category is discussed in greater detail below.

Political Characteristics

A range of factors related to a country's political system are likely to play an important role in the development of policies related to parental leave. As cabinet ministers in parliamentary democracies tend to play a larger role in policy agenda-setting and prioritization than do parliamentarians, it is important to control for female representation at the cabinet level (O'Regan, 2000; Atchison & Down, 2009; Atchison, 2015). In addition, I follow the practice of

O'Regan (2000) by controlling for the gender of the head of government.²³ It is plausible that a female head of government would choose cabinet ministers who have policy priorities in line with her own; as theorized in the present study, this would include policies that advance women's interests such as those that expand parental leave.

Ideology is also an important factor. Some past research, although not all, shows leftist political party ideology to be a significant predictor of voting for and prioritizing policies that seek to expand reproductive rights, improve women's access to health services, increase gender equality, and increase spending on social programs (Norris & Lovenduski, 1995; Swers, 1998; Wangnerud, 2000). Therefore, I control for leftist party ideology among parliamentarians using the percentage of parliamentary seats held by leftist parties. Finally, I control for the degree of federalism in the country's government, which Kittilson (2008) finds to constrain the development of national social policies.²⁴

Demographic Characteristics

A number of demographic factors may be related to changes in the generosity of a country's parental leave scheme. First, I control for the national fertility rate, which Kittilson (2008) finds to be negatively associated with the length of parental leave in her study of 19 OECD democracies. Second, I include the share of the female population that is of childbearing age, which O'Regan (2000) finds to have a significant positive correlation with her composite

²³ In nearly all countries included in my analyses, the head of government is the prime minister, with the exception of Austria (federal chancellor), Germany (chancellor), and Ireland (Taoiseach).

²⁴ I follow the practice of Armingeon et al. (2016) and Brady et al. (2014) in measuring federalism using a series of indicators representing the degree of federalism in the national political system with 0 = no federalism, 1 = weak federalism, and 2 = strong federalism. These indicators were based on an index developed by Lijphart (2012), which categorized countries based on their placement along the continua between federal versus unitary and centralized versus decentralized government systems.

measure of employment protection policy.²⁵ O'Regan (2000) also controls for the percentage of the population that identified as Catholic and finds it to have a small, positive correlation with her employment protection policy measure. Therefore, I control for the Catholic share of the population.

In addition, I follow Svaleryd (2009) in including demographic factors that may be associated with the provision of social welfare benefits more broadly, such as population size (because of economies of scale, larger countries may be able to more efficiently provide benefits) and the percentage of the population that is female (countries with more female voters may be more likely to elect government representatives who have their policy preferences). In line with Williamson and Carnes (2013), I also include a measure of education, as they find a significant positive relationship between the percentage of the population that holds a college degree and the generosity of parental leave among U.S. states. Finally, to account for broad demographic pressures that could affect the length of parental leave, I include the age dependency ratio, defined by the World Bank as the share of dependents (those below the age of 15 and above the age of 64) relative to the working-age population.

Economic Characteristics

Finally, I control for a variety of economic characteristics that may be correlated with the generosity of a country's parental leave benefits. Most studies in this area include a measure of country wealth, such as per capita GDP, as an indicator of the resources available for the financing of public benefits (O'Regan, 2000; Kittilson, 2008; Williamson & Carnes, 2013;

²⁵ O'Regan's (2000) measure of employment protection policy includes whether or not a country has equal pay protections, employment protections against gender discrimination, and the generosity of maternity and parental leave and childcare policies.

Atchison & Down, 2009; Atchison, 2015). Relatedly, I control for a country's spending on social transfers as a percentage of GDP (Kittilson, 2008). Also, because the level of women's participation in the labor market could affect the need for and support of parental leave policies, much of the literature controls for the female labor force participation rate (Kittilson, 2008; Atchison & Down, 2009; Svaleryd, 2009). In addition to controlling for female labor force participation, I follow the approach of Williamson and Carnes (2013) by also controlling for the national female unemployment rate. Finally, because O'Regan (2000) and Williamson and Carnes (2013) find union membership to be related to the presence of equal pay laws among 22 industrialized democracies and to the generosity of parental leave across U.S. states, respectively, I control for union density, defined as net union membership as a proportion of all employees.

DATA & METHODS

To construct my database, I use country-level data from several different sources. My empirical analyses span the forty-five-year period from 1970 to 2014 (inclusive).²⁶ In keeping with similar research, I measure my dependent variable, the generosity of parental leave benefits, in number of weeks (Kittilson 2008, Atchison & Down 2009). My data for both paid parental leave and protected parental leave are from the Organization for Economic Cooperation and Development (OECD)'s Family Database (OECD, 2016d).²⁷ Data for my key independent variable, the percentage of parliamentarians who are female, were graciously provided by Valeria Sistek at the Inter-Parliamentary Union (IPU), an international organization that collects data on women in national parliaments for 193 countries (IPU, 2016).²⁸ In keeping with the

²⁶ I selected this time period because 1970 is the first year for which the OECD Family Database has data on parental leave length and 2014 is the most recent year for which I have complete data available for several of my control variables.

²⁷ The "Trends in Leave Entitlements around Childbirth" data from the OECD Family Database contain information on 30 OECD countries from 1970 through 2015. Because of possible policy convergence stemming from binding directives – i.e., 1992 Pregnant Workers Directive (92/85/EEC), 1996 Parental Leave Directive (96/34/EC), and Parental Leave Directive as amended in 2010 (2010/18/EU) – and due to the possible effects of non-binding recommendations/resolutions, I have chosen to include only EU member state countries in my sample to ensure that all observations in my sample were subject to the same overriding policy imperatives. Of the 19 EU countries for which the OECD had parental leave data, I chose to exclude the Czech Republic, Slovakia, Poland, and Hungary owing to their more recent accession to the EU (2004) and their later transition to democratic governance (Czech Republic: 1990, Slovakia: 1990, Hungary: 1990, Poland: 1991). Therefore, my sample is restricted to 14 of the EU-15 countries, which includes the founding members of the European Union in 1993 with the exception of Luxembourg (Belgium, France, Italy, the Netherlands, Germany, Denmark, Greece, Ireland, Portugal, Spain, and the United Kingdom) and those countries that joined the European Union in its first wave of accessions in 1995 (Austria, Finland, and Sweden).

I would also note that the generosity of parental leave benefits in France depends on the number of children that a woman has. I measure the generosity of family leave in France according to the number of weeks of leave available to women after the birth of the first child.

²⁸ Because all of my measures for Germany prior to 1990 reflect the characteristics of West Germany in particular, the percentage of female parliamentarians in Germany before 1990 corresponds to West Germany. The reader should also note that I chose to include country-year observations in my sample only for periods in which the relevant countries were democratic. Therefore, data for Greece start in 1974, data for Portugal start in 1976, and data for Spain start in 1977. Finally, Greece and the United Kingdom had two elections in 1989 and 1974, respectively. To combine the results of these elections into a single value, I calculated a weighted average as follows:

- % of female parliamentarians for 1989 in Greece (first election in June 1989 and second election in November 1989): $(6/12)*\%female1988 + (5/12)*\%female_firstelection1989 + (1/12)*\%female_secondelection1989$

literature, I use the percentage of parliamentarians who are women in the lower house of parliament in countries that have a bicameral system and the overall percentage of parliamentarians who are women in countries with a single legislative body (Kittilson, 2008).

The control variables identified in the previous section are taken from a number of sources. Data on the proportion of cabinet-level ministers who are women for years 1970 through 2011 come from Amy Atchison at Valparaiso University. I supplement Atchison's database with data for more recent years using her original source, the annual print editions of the Europa World Year Book (Europa Publications Limited, 2013; 2014; 2015).²⁹ Data on female heads of state are drawn from Christensen (2016) and the additional political control variables for the share of parliamentary seats held by leftist parties, degree of federalism, and spending on social transfers are from the Comparative Political Data Set out of the University of Berne (Armingeon et al., 2016). All data measuring demographic characteristics were taken from the World Databank with the exception of two: the percentage of the population that identifies as Catholic and GDP per capita. My data on the former come from the University of Gothenburg's Quality of Governance Database. These data were collected by Zeev Maoz at the University of California, Davis and Errol Henderson at The Pennsylvania State University, and were originally published in the World Religion Dataset (Teorell et al., 2016; Maoz & Henderson, 2013). Data for the latter control, GDP per capita, come from the OECD Productivity Database (OECD,

- % of female parliamentarians 1974 in the United Kingdom (first election in February of 1974 and second election in October of 1974): $(2/12)*\%female1973 + (8/12)*\%female_firstelection1974 + (2/12)*\%female_secondelection1974$

Other researchers appear to have used a comparable approach, as my resulting estimates are very similar to the corresponding estimates for country-years in the Comparative Welfare States data set (Brady et al., 2014).

²⁹ Given that cabinet-level appointments do not always correspond neatly to calendar-years and that there is likely to be a time lag between the data-collection for and publication of Europa World Year Books, annual data on the proportion of cabinet-level ministers who are women come from the following year's print edition of the Europa World Year Book. As an example, data for the proportion of ministers who are female for the year 2014 come from the 2015 edition of the Europa World Year Book.

2016c). The measures of the female labor force participation rate and the female unemployment rate are from the OECD Employment and Labour Market Database (OECD, 2000; OECD, 2011; OECD, 2016b).³⁰ Finally, my measure of union density, defined as union membership as a proportion of employees, come from the ICTWSS Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts, which is housed at the University of Amsterdam's Institute for Advanced Labour Studies (Visser, 2016).

To estimate the relationship between the percentage of parliamentarians who are female and the length of parental leave, I estimate a multivariate regression model with country and year fixed effects. The inclusion of country fixed effects allows me to control for all country-level, time-invariant characteristics that are related to parental leave policies, such as geographic characteristics, lasting cultural differences between countries, and country-specific welfare-state characteristics.³¹ The inclusion of time fixed effects allows me to control for changes over time that are common to all countries, such as continent-wide economic conditions, broad changes in the status of women, and the implementation of supranational-level parental leave legislation.³² The use of country and year fixed effects along with the time-varying control variables described in the previous section substantially reduces the extent of omitted variables bias in my estimates. My regression model, which uses the country-year as the unit of analysis, is as follows:

³⁰ This database was missing data for Sweden for all years and data for Belgium for several years. Therefore, I supplemented data from the online OECD Employment and Labour Market Database with data published in the 1999 and 2010 OECD Labour Force Statistics publications (OECD, 2000; OECD, 2011).

³¹ Esping-Anderson's (1990) pivotal work provides a typology of welfare-state regimes in Western capitalist democracies, distinguishing between liberal, corporatist, and social democratic welfare states. According to Esping-Anderson, liberal welfare regimes provide more moderate means-tested benefits that incentivize work, corporatist welfare regimes provide broader social benefits (but often in ways that maintain status inequality and traditional family roles), and social democratic regimes provide more universal and redistributive benefits. While no country is a pure example of any type, a country's welfare state characteristics are likely to influence its parental leave policies.

³² Of the countries included in my sample, 12 were immediately exposed to the 1992 Pregnant Workers Directive, while Austria, Finland, and Sweden were not exposed to this policy until their accession to the European Union three years later in 1995 (for a timeline of the development of the European Union, see Appendix 1). However, all fifteen countries were exposed to the 1996 and 2010 Parental Leave Directives at the time of their adoption.

$$\begin{aligned}
Leave_{it} = & \beta_0 + \beta_1 PercentFemaleMPs_{it} + \beta_2 PercentFemaleCab_{it} + \beta_3 FemaleHeadofGov_{it} + \\
& \beta_4 LeftGov_{it} + \beta_5 Federalism_{it} + \beta_6 SocialTransfers_{it} + \beta_7 FertRate_{it} + \beta_8 DependRatio_{it} + \\
& \beta_9 PopSize_{it} + \beta_{10} Pop_Female_{it} + \beta_{11} Pop_Childbearing_{it} + \beta_{12} Pop_Cath_{it} + \\
& \beta_{13} Pop_HighEduc_{it} + \beta_{14} GDPPerCap_{it} + \beta_{15} FemaleLaborPart_{it} + \beta_{16} FemaleUnemp_{it} + \\
& \beta_{17} UnionDensity_{it} + \alpha_i + \lambda_t + \mu_{it}
\end{aligned}$$

where i is a country index, t is a time index, the generosity of paid parental leave and protected parental leave in weeks are my two dependent variables, the proportion of parliamentarians who are female is my key independent variable, α_i is a vector of country-level dummy variables that capture time invariant country-level characteristics, λ_t represents dummy variables for each year, and μ_{it} is the error term. Table 1 below shows the definitions and data sources for all variables included in my model.

Table 1: Variable Definitions and Data Sources

Variable	Definition	Data Source
Dependent and Key Independent Variables		
<i>Leave_Paid</i>	A continuous variable measuring the number of weeks of paid parental leave available to mothers, including maternity leave and parental leave.	OECD Family Database
<i>Leave_Protected</i>	A continuous variable measuring the number of weeks of job-protected parental leave available to mothers, including maternity leave and parental leave (regardless of income support).	OECD Family Database
<i>PercentFemaleMPs</i>	A continuous variable measuring the percentage of parliamentarians who are women in the lower house of parliament in countries with a bicameral parliament and the overall percentage of parliamentarians who are women in countries with a single-house parliament.	Data provided by Valeria Sistek at the Inter-Parliamentary Union
Political Characteristics		
<i>PercentFemaleCab</i>	A continuous variable measuring the percentage of cabinet-level ministers who are women.	Data provided by Amy Atchison for 1970-2011. Data for 2012-2014 from Europa World Year Book 2013, 2014, 2015
<i>FemaleHeadofGov</i>	A dichotomous variable indicating whether a country had a female head of government during that year.	Christensen (2016)
<i>LeftGov</i>	A continuous variable measuring the share of parliamentary seats held by parties classified as leftist.	Comparative Political Data Set
<i>Federalism</i>	A series of indicators representing the degree of federalism in the national political system with 0 = no federalism, 1 = weak federalism, and 2 = strong federalism.	Comparative Political Data Set, taken from Huber et al. (2004)
<i>SocialTransfers</i>	A continuous variable measuring the share of public expenditures devoted to social transfers as a percentage of GDP.	Comparative Political Data Set, taken from the OECD (2015)

Table 1. (cont.)

Variable	Definition	Data Source
Demographic Characteristics		
<i>FertRate</i>	A continuous variable measuring the average number of births per woman.	World Databank World Development Indicators Database
<i>DependRatio</i>	A continuous variable measuring the share of dependents (those below the age of 15 and above the age of 64) relative to the working-age population.	World Databank World Development Indicators Database
<i>PopSize</i>	A continuous variable measuring the total population size, in millions of people.	World Databank World Development Indicators Database
<i>Pop_Female</i>	A continuous variable measuring the percentage of the population that is female.	World Databank World Development Indicators Database
<i>Pop_Childbearing</i>	A continuous variable measuring the percentage of the total population that is female and of childbearing age, defined as between the ages of 16 and 44.	World Databank World Development Indicators Database
<i>Pop_Cath</i>	A continuous variable measuring the percentage of the population that identifies as Catholic.	Quality of Governance Database, taken from Maoz & Henderson (2013)
<i>Pop_HighEduc</i>	A continuous variable measuring the percentage of the population over the age of 15 that has a tertiary degree.	World Databank World Development Indicators Database
<i>GDPPERcap</i>	A continuous variable measuring GDP per capita in Purchasing Power Parity (PPP) constant prices adjusted to 2010 U.S. dollars.	OECD Productivity Database
Economic Characteristics		
<i>FemaleLaborPart</i>	A continuous variable measuring the size of the female labor force as a percentage of the population between the ages of 15 and 64.	OECD Employment and Labour Market Statistics Database
<i>FemaleUnemp</i>	A continuous variable measuring the female unemployment rate as a percentage of the female civilian labor force.	OECD Employment and Labour Market Statistics Database
<i>UnionDensity</i>	A continuous variable measuring the number of union members as a proportion of wage and salary earners.	ICTWSS: Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention & Social Pacts

DESCRIPTIVE STATISTICS

Descriptive statistics for the dependent, key independent, and control variables in my model are shown in Table 2 below.³³ All of my estimates are weighted by the average population size of each country over my period of analysis. Across the country-year observations included in my analyses, the average length of paid parental leave available to new mothers is 35.4 weeks, or about nine months. The average length of protected parental leave available to new mothers across the countries evaluated over the 45-year period is nearly 11 months longer, with a mean value of 78.8 weeks. However, both variables show substantial variation across countries and over time – especially the measure of total protected parental leave, for which there is a minimum value of zero weeks (Ireland from 1970 through 1980) and a maximum value of over

³³ The follow variables had missing data: union density (2014 for all countries; Greece: 1974-76, 1978-79, 1981-82, 1984, 1986-89, 1991,1993-94, 1996-97, 1999-00, 2002-03, 2007, 2009-10, 2012; Portugal: 1976-77, 2013; Sweden: 2013), female labor force participation (Austria: 1970-73, 2014; Belgium: 1970-75, 2008-14; Denmark: 1980, 2012-14; France: 2014; Greece: 1970, 1972-76, 2013-14; Netherlands: 1970-74, 2011-14; Portugal: 1970-73, 14; Sweden: 1970-77, 2010-14), the female unemployment rate (Denmark: 1980, 2014; Greece: 1974, 1976; Netherlands: 1970-74, 2014; Sweden: 1970-74, 2010-14). For my union density measure, I first used simple interpolation to fill in the intervening (missing) values wherever possible, and then used extrapolation based on five-year trends to fill in the missing 2013 and 2014 values. I used a four-year trend to estimate values for Greece between 1974-1976 in order to avoid extrapolation using an interpolated value. For both the female labor force participation rate and female unemployment variables, I dealt with missing values in three steps: First, I used simple interpolation to fill in the intervening (missing) values in-between existing values; second, I used extrapolation based on five-year trends to estimate missing values for which there was no starting existing value and for which there was no final existing value prior to 2008; and third, I calculated average annual trends for all countries for which there were data available for 2008-2014 in order to assign country-specific values in countries that were missing data during this period. I took the latter step because the global financial crisis likely affected these two measures during the time in question. In addition, data for several variables were only available in five-year increments, including the percent of the population that is Catholic, the percent of the population that has a tertiary degree, and some of the data that I used to calculate the percent of the female population that is of childbearing age. I used simple interpolation to fill in the intervening (missing) values under the assumption of constant linear trends for each variable. Data on the proportion of the population that is Catholic and the proportion of the population that has a tertiary degree were not available for 2015, which would be the next five-year increment for which data will eventually be available. I therefore assumed a continued linear time trend for both variables from 2010 to 2014. Aside from these observations, there were no other missing data in the dataset. My dataset contains a total of 19 variables with 613 country-year observations (11 countries*45 years + Greece*41 years + Portugal*39 years + Spain*38 years), which corresponds to 11,647 data points. The total number of missing values comes to 1,314 (population of childbearing age = 212; percent of population that is Catholic = 492; percent of population that has tertiary degree = 492; female labor force participation = 51; union density = 43; and female unemployment = 24). As a result, approximately 11% of the data points in my dataset were missing and were filled in using linear interpolation, extrapolation, and average trend estimation techniques.

three years (Spain from 1989 through 2014). The percentage of parliamentarians who are women also varies considerably, from a low of under 3% in Belgium, France, Greece, Ireland, Italy, and the United Kingdom in the 1970s and early 1980s to a high of over 45% in Finland, the Netherlands, and Sweden in the 1990s and 2000s. Across all country-years, women hold, on average, just about 16% of parliamentary seats and 17% of cabinet minister positions. In comparison, women make up only about 10% of female heads of state in my sample.

The descriptive statistics for my political, demographic, and economic control variables reveal additional variation in characteristics of sample states. Although leftist parties hold an average of over 40% of the parliamentary seats across the country-years in my sample, their seat share ranges from 0% to 100% over the time period covered by my analysis. In addition, the mean fertility rate of 1.7 confirms that the birthrate in a number of western European countries is lower than the replacement rate of 2.1 required for a population to sustain constant levels (United Nations, 2015). However, the maximum fertility rate was over twice this average (Ireland between 1970 and 1980), while the minimum was just over one birth per woman (Italy and Spain in the 1990s). Also important are country-level economic characteristics, which show considerable variation as well. Most relevant to this study is the mean female labor force participation rate of 56.5%. Again, however, there is a wide range from a low of just under 30% in the Netherlands in the 1970s to a high of over 80% in Sweden in the late 1980s. The values for union density, measured as the percentage of employees covered by unions, and the female unemployment rate show similarly high levels of variation between countries, and within countries over time.

Table 2: Descriptive Statistics for Dependent, Key Independent, and Control Variables

Variable	Mean	Min.	Max.	S.D.
Length of Paid Parental Leave (in weeks)	35.4	9.0	161.0	27.0
Length of Protected Parental Leave (in weeks)	78.8	0	166.0	58.9
Percent Female MPs	15.9	2.0	47.3	11.1
Political Characteristics				
Percent Female Ministers	17.0	0	60.0	13.7
Female Head of Government	10.3	0	100	30.4
Percent Leftist MPs	40.6	0	100	41.6
Degree of Federalism (scale 0-2)	.5	0	2.0	.9
Social Transfers (percent GDP)	15.3	7.0	23.4	2.5
Demographic Characteristics				
Fertility Rate	1.7	1.2	3.9	.3
Dependency Ratio	52.0	43.3	71.7	4.7
Population (in millions)	51.5	3.0	82.5	24.1
Percent Female	51.2	49.7	53.0	.5
Percent Female 15-44	20.7	17.4	23.7	1.2
Percent Catholic	51.6	0	97.8	31.9
Percent w/ Tertiary Degree	7.7	1.1	31.9	4.4
Per Capita GDP (in thousands of 2010 PPP)	28.9	11.1	48.4	7.2
Economic Characteristics				
Female Labor Force Participation Rate	56.5	28.6	80.6	11.4
Female Unemployment Rate	9.5	.6	31.6	5.8
Union Density	31.7	7.5	87.4	16.2
N = 613; All estimates are weighted by the average population size of each country over my period of analysis				

Table 3 shows the values for my dependent variables and key independent variable for each country in twenty year increments, starting in 1970. The results reflect important differences over time and across countries in the length of parental leave provided to new mothers and the percentage of parliamentarians who are women. In general, the lengths of both kinds of parental leave studied in these analyses and the representation of women in parliaments have increased in tandem over time. Finland stands out as having the longest duration of paid and protected parental leave, and - along with Sweden and Denmark - also has a relatively high proportion of parliamentarians who are women in each year.

Table 3: Values for Dependent and Key Independent Variables by Country over Time

	1970	1990	2010
Austria			
Total paid parental leave (in weeks)	58.0	60.0	60.0
Total protected parental leave (in weeks)	58.0	60.0	103.3
Percent parliamentarians who are women	4.9	19.7	27.9
Belgium			
Total paid parental leave (in weeks)	14.0	14.0	28.0
Total protected parental leave (in weeks)	14.0	14.0	28.0
Percent parliamentarians who are women	3.8	8.5	39.3
Denmark			
Total paid parental leave (in weeks)	14.0	28.0	50.0
Total protected parental leave (in weeks)	14.0	28.0	50.0
Percent parliamentarians who are women	10.6	33.0	37.4
Finland			
Total paid parental leave (in weeks)	9.0	159.0	159.0
Total protected parental leave (in weeks)	9.0	159.0	159.0
Percent parliamentarians who are women	16.5	31.5	42.0
France			
Total paid parental leave (in weeks)	14.0	16.0	42.0
Total protected parental leave (in weeks)	14.0	162.0	162.0
Percent parliamentarians who are women	2.1	6.9	18.5
Germany			
Total paid parental leave (in weeks)	14.0	70.0	58.0
Total protected parental leave (in weeks)	14.0	70.3	162.0
Percent parliamentarians who are women	6.6	20.5	32.8
Greece*			
Total paid parental leave (in weeks)	-	15.0	43.0
Total protected parental leave (in weeks)	-	28.0	58.2
Percent parliamentarians who are women	-	4.7	17.3

* As previously discussed, I include only periods of democratic governance in my analyses. Therefore, data begin in 1974 for Greece, in 1976 for Portugal, and in 1977 for Spain.

Table 3. (cont.)

	1970	1990	2010
Ireland			
Total paid parental leave (in weeks)	12.0	14.0	26.0
Total protected parental leave (in weeks)	0	18.0	56.0
Percent parliamentarians who are women	2.1	7.8	13.3
Italy			
Total paid parental leave (in weeks)	14.0	47.7	47.7
Total protected parental leave (in weeks)	40.0	47.7	47.7
Percent parliamentarians who are women	2.7	12.9	21.3
Netherlands			
Total paid parental leave (in weeks)	12.0	16.0	42.0
Total protected parental leave (in weeks)	12.0	16.0	42.0
Percent parliamentarians who are women	8.0	21.3	40.7
Portugal*			
Total paid parental leave (in weeks)	-	12.9	30.1
Total protected parental leave (in weeks)	-	116.9	134.1
Percent parliamentarians who are women	-	7.6	27.8
Spain*			
Total paid parental leave (in weeks)	-	16.0	16.0
Total protected parental leave (in weeks)	-	166.0	166.0
Percent parliamentarians who are women	-	14.6	36.3
Sweden			
Total paid parental leave (in weeks)	25.7	63.0	60.0
Total protected parental leave (in weeks)	25.7	78.0	85.0
Percent parliamentarians who are women	14.0	38.4	45.0
United Kingdom			
Total paid parental leave (in weeks)	18.0	18.0	39.0
Total protected parental leave (in weeks)	18.0	40.0	65.0
Percent parliamentarians who are women	4.1	6.3	22.9

REGRESSION RESULTS

Tables 4, 5, 6, and 7 report my regression results. Tables 4 and 5 report results for models in which the dependent variable is the length of paid parental leave, and Tables 6 and 7 report results for models in which the dependent variable is the length of protected parental leave. The tables for both paid and protected leave include the same set of eight models, described as follows. Model (1) estimates the raw correlation between the proportion of parliamentarians who are women and the length of parental leave. Model (2) includes my political, demographic, and economic control variables with the exception of the proportion of cabinet-level ministers who are women.³⁴ Model (3) adds country fixed effects, while Model (4) adds year fixed effects. The only difference between Models (4) and (5) is that the latter includes a control variable accounting for the proportion of cabinet-level ministers who are women. I separately enter this covariate into my regression because in previous research, its inclusion in the model greatly reduced the magnitude and significance of the relationship between female parliamentary representation and the length of parental leave (Atchison & Down, 2009).

In Model (6), I additionally control for the type of parental leave not used as that model's dependent variable. In other words, I control for the length of protected parental leave in Table 5 and the length of paid parental leave in Table 7.³⁵ I build upon Model (6) in Model (7) by

³⁴ I also estimated models in which I added a quadratic term for GDP per capita. The results of these regressions were quantitatively similar to the results reported here. In addition, I estimated models in which I replaced my political ideology control (the proportion of parliamentary seats held by leftist parties) with a set of three dummy variables set equal to one when the majority of parliamentary seats were held by MPs from left parties, right parties, or were equally balanced between left and right parties (indicating a centrist parliament). The results of these alternate specifications were also quantitatively similar to the results reported here.

³⁵ It is unclear whether I should control for the length of protected parental leave in regressions in which paid parental leave is the dependent variable, and vice versa, because there is overlap between the two (the correlation coefficient for these two variables is 0.51 with a p-value of <.0001). Using the coding annex for the OECD Family Database, I determined that not all paid parental leave in my dataset is protected, and that not all protected parental leave in my dataset is paid (OECD, 2014). For example, Austria made 30 months of paid parental leave available to all new mothers, regardless of employment status, starting in 2002. Because parental job protection at that time was only guaranteed through the child's second birthday, this meant that the total length of paid leave exceeded the total

including an interaction term to explore whether my relationship of interest differs according to whether a majority of parliamentary seats are held by leftist parties. Finally, in Model (7), I allow my key relationship to vary based on whether the proportion of cabinet-level ministers who are women is above or below the median value. All regressions are weighted by the mean population size of each country over my period of analysis and are estimated using robust standard errors.

Paid Parental Leave

As previously discussed, the results of the regressions that use paid parental leave as the dependent variable are reported in Tables 4 and 5. In keeping with my hypothesis, the raw correlation in Model (1) between the proportion of parliamentarians who are women and the length of paid parental leave in the countries included in my analysis is positive and statistically significant. Once my political, demographic, and economic control variables, as well as country and year fixed effects, are added in Models (2) through (4), the magnitude of the relationship decreases but remains positive and significant. These results are consistent with those of Kittilson (2008), who found a positive and significant relationship between female parliamentary representation and the length of parental leave in her analysis of 19 Western democratic countries.

length of protected parental leave. In other words, a portion of paid leave was not protected in Austria between 2002 and 2007. Similarly, in Ireland, the country's first parental leave law guaranteed new mothers twelve weeks of paid, but not job-protected, parental leave. The Maternity Protection Act of 1981 made a maximum of 14 weeks of maternity leave job-protected. Therefore, not all paid leave in Ireland between 1970 and 1980 was protected. Conversely, it appears to be much more common among the countries included in my analysis to have periods of protected parental leave that are not paid. For example, eight of the countries in my sample (France, Germany, Greece, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom) introduced some form of unpaid, job-protected parental or homecare leave for new mothers that followed periods of paid leave starting as early as 1976 in the United Kingdom and as late as 1992 in the case of Germany. Thus, a portion of protected parental leave is not paid for a number of country-years during my analysis. Given these considerations, I control for paid parental leave in my analyses of protected leave, and for protected leave in my analyses of paid leave, in some – but not all – of my regressions.

However, in contrast to Atchison and Down's (2009) findings, the magnitude of my estimate increases and remains significant in Model (5) after I add a control for the proportion of cabinet-level ministers who are women. This analysis suggests that a one percentage point increase in the proportion of women in parliaments is associated with an increase of almost ten days in the length of paid parental leave, holding the other factors included in my analysis constant. I speculate that the difference between my findings and previous findings can largely be explained by the way in which I chose to measure parental leave. Atchison and Down (2009) operationalize their parental leave measure by summing the length of legal entitlements to maternity and parental leave for each country-year using data from the Comparative Family Policy Database, compiled by Anne Gauthier and distributed by the Netherlands Interdisciplinary Demographic Institute (NIDI) and Max Planck Institute for Demographic Research (Gauthier & Bortnik, 2001). Unlike the OECD Family Database, the measures of parental leave in the Comparative Family Policy Database do not distinguish between paid and protected parental leave. The difference between Atchison and Down's (2009) findings and my results in Model (5) indicate that this distinction may be important when one evaluates the relationship between the proportion of parliamentarians who are women and the length of parental leave.

The addition of a control for protected parental leave in Model (6) only slightly reduces the coefficient's magnitude and does not change its level of significance. Similarly, the estimate for my key relationship remains positive and significant after the inclusion of interaction terms in Models (7) and (8). The coefficient on the interaction between the proportion of MPs who are women and parliamentary leftist party dominance (defined as parliaments in which over 50% of the seat share is held by leftist parties) reveals that there is not a significant difference in the association between female parliamentary representation and the length of paid parental leave for

parliaments in which leftist parties are dominant versus those in which they are not. In Model (8), I allow for variation in my primary relationship between countries whose cabinets have a comparatively high level of female representation (defined as cabinets with a proportion of representation above the median value for the countries and years included in my analysis) and those that do not. These results also suggest that there is not a statistically significant difference in my key relationship between countries that have above-median female representation at the cabinet level and those that do not.

The results for several of my control variables are also worth noting. In contrast to the findings of Atchison and Down (2009), I find evidence of a small, but statistically significant, negative relationship between the proportion of cabinet-level ministers who are women and the length of paid parental leave in several of the models in which I control for protected parental leave (Models (6) and (7)). As previously discussed, it is possible that the distinction between paid and protected parental leave in my data may help to explain this difference. Because paid leave proposals may, in some cases, require government funding, perhaps the budgetary roles of parliaments versus cabinets influence the overall degree of cabinet-level support for paid parental leave policy proposals.³⁶ Interestingly, I also find only a very small and negative relationship between leftist party dominance and paid parental leave. This finding is qualitatively consistent with results produced by Kittilson (2008) and Atchison and Down (2009), who find the relationship between the proportion of parliamentarians and cabinet-level ministers who are from leftist parties, respectively, to be statistically insignificant.

³⁶ It is also important to note, however, that not all democracies delegate the majority of their budgetary powers to the legislative branch as in the United States. In his 2005 cross-country analysis, Joachim Wehner finds that the Swedish, Dutch, and Austrian parliaments have relatively high levels of budgetary authority, while the Irish, French, and Greek parliaments have less power over the budget process in relation to their respective national cabinets (Wehner, 2005).

While O'Regan (2000) finds a positive association between the percentage of the female population that is of childbearing age and her composite measure of female-friendly employment policies (which includes parental leave), I find that there is a significant negative correlation between this same control and the length of paid leave in all but one of my models. Despite the incongruence between our results, my findings for this control seem to be consistent with my findings for the relationships between the percentage of the population that is female and the level of female labor force participation and paid leave. It is possible that it is more cost-prohibitive for countries that have proportionately more women, more women of childbearing age, and/or more women in the workforce to expand their paid parental leave policies. Conversely, GDP per capita and state spending on social transfers are both positive and statistically significant. This implies that wealthier states, as well as those that allocate proportionately greater funding towards social spending, tend to have longer paid parental leave.

To conclude, my analysis of the relationship between female parliamentary representation and paid leave suggests that there is a positive, statistically significant correlation between the proportion of parliamentarians who are women and the length of paid parental leave for the country-years within my sample. Most of my models show that a one percentage point increase in the representation of women at the parliamentary level is associated with about a one week increase in the length of paid parental leave, holding my political, demographic, and economic characteristics constant. Based on the results of Models (4) through (6), all of which include country and year fixed effects along with political, demographic, and economic controls, I estimate that an increase of one standard deviation in female parliamentary representation (11.1, as reported in Table 2) is associated with an increase in the length of paid leave of between

about eleven weeks and fifteen weeks. Bearing in mind that the median value for paid parental leave is about 22 weeks, this suggests a rather substantial relationship.³⁷

³⁷ Taking the results from Model (4) as a lower-bound estimate of this relationship and the results from Model (5) as an upper-bound estimate, an increase of one standard deviation in female parliamentary representation (11.1) is associated with an increase in paid parental leave of between $11.1 * 1.02 = 11.32$ weeks and $11.1 * 1.36 = 15.10$ weeks.

Table 4: Main Regression Results for Paid Parental Leave Models

Dependent Variable: Length of Paid Parental Leave (in weeks)				
	(1)	(2)	(3)	(4)
Percent Female MPs	1.23*** (0.12)	0.84*** (0.14)	0.65* (0.32)	1.02** (0.40)
Political Characteristics				
Female Head of Government		-0.05* (0.03)	-0.14* (0.07)	-0.07 (0.06)
Percent Leftist MPs		-0.05** (0.02)	-0.07* (0.03)	-0.08** (0.03)
Federalism		3.19* (1.81)	-8.76* (4.34)	-6.13* (2.97)
Social Transfers (percent GDP)		2.36*** (0.34)	1.22 (0.78)	2.73** (1.01)
Demographic Characteristics				
Fertility Rate		19.61*** (4.09)	12.32** (5.57)	8.15** (3.47)
Dependency Ratio		-2.50*** (0.43)	-0.96** (0.36)	-1.50* (0.77)
Population (in millions)		0.16*** (0.05)	1.26 (1.40)	2.75** (1.23)
Percent Female		1.87 (2.40)	-18.67** (7.02)	-10.83** (4.73)
Percent Female 15-44		-4.94*** (1.10)	-2.75 (1.90)	-11.95*** (1.42)
Percent Catholic		-0.11*** (0.03)	0.26 (0.56)	0.51 (0.33)
Percent with Tertiary Degree		-2.06*** (0.31)	-1.21 (1.04)	0.41 (1.14)
Per Capita GDP (in thousands)		1.01*** (0.24)	1.74** (0.72)	3.06** (1.37)
Economic Characteristics				
Female Labor Force Participation		-0.17 (0.11)	-0.55 (0.43)	-0.65 (0.43)
Female Unemployment		0.36* (0.22)	1.21*** (0.34)	0.84** (0.32)
Union Density		0.55*** (0.05)	1.00** (0.42)	0.62 (0.37)
Constant	15.92*** (1.41)	63.69 (127.11)	926.30*** (298.63)	635.47*** (184.06)
Country Fixed Effects	No	No	Yes	Yes
Year Fixed Effects	No	No	No	Yes
Observations	613	613	613	613
R-squared	0.25	0.61	0.82	0.87

Robust standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.10$

Table 5: Additional Regression Results for Paid Parental Leave Models

Dependent Variable: Length of Paid Parental Leave (in weeks)				
	(5)	(6)	(7)	(8)
Percent Female MPs	1.36** (0.50)	1.23** (0.50)	1.28** (0.52)	1.28* (0.55)
Percent Female MPs*Above 50% Leftist MPs			-0.24 (0.14)	
Percent Female MPs*Above Median Female Ministers				-0.07 (0.16)
Political Characteristics				
Percent Female Ministers	-0.36 (0.25)	-0.43* (0.23)	-0.40* (0.21)	-0.40 (0.20)
Female Head of Government	-0.05 (0.05)	-0.07 (0.06)	-0.08 (0.06)	-0.07 (0.06)
Percent Leftist MPs	-0.06** (0.02)	-0.06** (0.02)	-0.02 (0.02)	-0.06* (0.02)
Federalism	-7.54** (3.04)	-4.97 (2.87)	-5.99 (3.45)	-4.88 (2.86)
Social Transfers (percent GDP)	2.65** (1.02)	2.80** (0.96)	3.07** (1.02)	2.79* (0.97)
Protected Parental Leave		0.13* (0.07)	0.13* (0.06)	0.13 (0.07)
Demographic Characteristics				
Fertility Rate	7.00 (3.97)	8.46** (3.70)	9.17** (3.46)	8.69* (3.74)
Dependency Ratio	-1.55* (0.73)	-1.58** (0.63)	-1.68** (0.56)	-1.59* (0.65)
Population (in millions)	2.90** (1.23)	2.00 (1.22)	2.10 (1.26)	2.00 (1.22)
Percent Female	-10.28** (4.76)	-6.72** (2.89)	-7.63** (3.10)	-6.77* (2.88)
Percent Female 15-44	-12.23*** (1.62)	-12.58*** (1.10)	-12.31*** (0.98)	-12.60*** (1.11)
Percent Catholic	0.50 (0.35)	0.83* (0.39)	0.81* (0.41)	0.85 (0.41)
Percent w/ Tertiary Degree	0.59 (1.05)	0.65 (0.98)	0.65 (0.98)	0.64 (0.98)
Per Capita GDP (in thousands)	2.93** (1.33)	2.75** (1.15)	2.70** (1.10)	2.75* (1.14)
Economic Characteristics				
Female Labor Force Participation	-0.76* (0.42)	-0.73* (0.37)	-0.72* (0.35)	-0.72 (0.38)
Female Unemployment	0.76** (0.30)	0.40 (0.32)	0.31 (0.34)	0.39 (0.32)
Union Density	0.70* (0.38)	0.69* (0.35)	0.77* (0.36)	0.69 (0.35)
Constant	617.27*** (186.31)	461.75*** (136.64)	497.52*** (136.85)	463.24*** (134.22)
Country and Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	613	613	613	613
R-squared	0.87	0.88	0.89	0.88
F-Statistics and p-Values for Joint Hypotheses			3.54* (0.06)	2.99* (0.09)

Robust standard errors and p-values in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Protected Parental Leave

As expected, the raw correlation between the proportion of parliamentarians who are women and the length of protected parental leave in my sample is positive and statistically significant, as shown in Table 6. Although this result almost certainly suffers from omitted variable bias, it suggests that a one percentage point increase in female parliamentary representation is associated with an increase in the length of protected parental leave of about two and a half weeks. Even after controlling for my political, demographic, and economic control variables, the relationship remains positive and significant, although its magnitude falls to just under two weeks.

However, once country and year fixed effects are added in Models (3) and (4), the key coefficient is no longer statistically significant at conventional levels. Similar to the findings of Atchison and Down (2009), I find that the inclusion of a control for female cabinet-level representation in Model (5) also greatly reduces the magnitude of my relationship of interest. After controlling for paid leave in Model (6), the estimate for my key relationship becomes markedly more imprecisely estimated than in earlier models. This is also the case for Models (7) and (8). Moreover, there does not appear to be a significant difference in my key relationship based on the dominance of leftist parties (Model (7)) or on comparatively high levels of female representation at the cabinet level (Model (8)).

As in Atchison and Down's (2009) analysis of the proportion of cabinet-level ministers who are women and the length of parental leave – and in contrast to my findings for paid parental leave – my results suggest a positive and significant relationship between female cabinet-level representation and protected parental leave. More specifically, I estimate that a one percentage point increase in female representation at the cabinet level is associated with an

increase in the length of protected leave of just under one week, holding the other variables in my analysis constant. As a means of grasping the magnitude of this relationship, a one standard deviation increase in the proportion of cabinet-level ministers who are women (13.7, as shown in Table 2) is associated with an increase in protected leave of between about seven and nine and a half weeks.³⁸ As the median value for protected parental leave is nearly 50 weeks, this suggests a relatively small relationship.³⁹

I also find no evidence of a significant relationship between leftist party dominance and protected parental leave, which echoes the findings of Kittilson (2008) and Atchison and Down (2009). However, I do find evidence of a negative and significant relationship between the proportion of the population that is female and the length of protected parental leave. My results also show a significant positive correlation between the total size of the population and the length of protected leave, indicating that more populous countries may be more likely to have longer protected leave. Perhaps the risk of unmet labor market demand when women remain out of employment for longer periods of time is lower among countries that have larger overall populations. The structure of the national political system also appears to be a determinant for protected leave in my analysis, echoing the results of both Kittilson (2008) and Atchison and Down (2009). More specifically, I find federalism to be negatively associated with the length of protected leave, which could be due to the increased constraints that a more federalist government might encounter in implementing policy at the national level.

³⁸ Taking the results from Model (5) as a lower-bound estimate of this relationship and the results from Model (8) as an upper-bound estimate, an increase of one standard deviation in female cabinet-level representation (13.7) is associated with an increase in protected parental leave of between $13.7 * 0.52 = 7.12$ weeks and $11.1 * 0.86 = 9.55$ weeks.

³⁹ The median value for protected parental leave is 47.67.

To summarize, my analyses show that the relationship between female representation at the parliamentary level and the length of protected parental leave becomes quite small, imprecise, and statistically indistinguishable from zero after one controls for my time-varying political, demographic, and economic characteristics, country and year fixed effects, the proportion of cabinet-level ministers that are women, and the length of paid parental leave. However, the degree of female representation at the cabinet level is a significant correlate of the length of protected parental leave, although not as strong of a correlate as female parliamentary representation is of paid parental leave. In contrast to my results for paid parental leave, these findings support the conclusions of Atchison and Down (2009) – namely, that the proportion of ministerial seats held by women in national cabinets is a better predictor of the length of parental leave than is the proportion of parliamentary seats held by women.

Table 6: Main Regression Results for Protected Parental Leave Models

Dependent Variable: Length of Protected Parental Leave (in weeks)				
	(1)	(2)	(3)	(4)
Percent Female MPs	2.63*** (0.22)	1.86*** (0.29)	1.21 (0.99)	1.47 (0.92)
Political Characteristics				
Female Head of Government		0.14*** (0.05)	0.11 (0.08)	0.22** (0.08)
Percent Leftist MPs		0.06 (0.04)	-0.01 (0.06)	-0.00 (0.07)
Federalism		3.32 (3.06)	-24.46** (8.20)	-21.48*** (5.46)
Social Transfers (percent GDP)		1.95** (0.79)	-2.26 (1.77)	-1.28 (3.04)
Demographic Characteristics				
Fertility Rate		15.25* (9.22)	-7.56 (21.74)	-12.78 (25.12)
Dependency Ratio		-1.40* (0.75)	1.33 (0.93)	0.14 (1.30)
Population (in millions)		0.46*** (0.10)	5.51* (2.94)	7.08*** (2.12)
Percent Female		-20.66*** (5.26)	-31.72** (12.07)	-26.20** (10.98)
Percent Female 15-44		2.91 (2.37)	11.42* (5.63)	2.19 (8.70)
Percent Catholic		0.44*** (0.09)	-3.17 (1.81)	-2.58 (1.70)
Percent w/ Tertiary Degree		-2.77*** (0.76)	-1.19 (2.35)	-0.22 (3.26)
Per Capita GDP (in thousands)		-1.67*** (0.58)	0.99 (1.43)	1.15 (3.08)
Economic Characteristics				
Female Labor Force Participation		3.27*** (0.26)	-0.19 (0.63)	-0.40 (1.01)
Female Unemployment		2.05*** (0.69)	2.75** (1.06)	2.59** (0.93)
Union Density		-1.14*** (0.13)	0.32 (0.91)	0.21 (1.10)
Constant	37.02*** (4.52)	914.27*** (290.18)	1272.51* (668.53)	1152.67** (531.47)
Country Fixed Effects	No	No	Yes	Yes
Year Fixed Effects	No	No	No	Yes
Observations	613	613	613	613
R-squared	0.25	0.69	0.84	0.86

Robust standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Additional Regression Results for Protected Parental Leave Models

Dependent Variable: Length of Protected Parental Leave (in weeks)				
	(5)	(6)	(7)	(8)
Percent Female MPs	0.99 (0.87)	0.08 (0.90)	0.15 (0.89)	0.29 (1.18)
Percent Female MPs*Above 50% Leftist MPs			-0.22 (0.27)	
Percent Female MPs*Above Median Female Ministers				-0.26 (0.41)
Political Characteristics				
Percent Female Ministers	0.52* (0.26)	0.76*** (0.20)	0.78*** (0.19)	0.86** (0.24)
Female Head of Government	0.20** (7.59)	0.23** (0.08)	0.22** (0.08)	0.23* (0.08)
Percent Leftist MPs	-0.03 (0.07)	0.01 (0.06)	0.05 (0.09)	0.01 (0.06)
Federalism	-19.44*** (6.03)	-14.39** (5.67)	-15.35** (6.30)	-14.02* (5.72)
Social Transfers (percent GDP)	-1.15 (3.00)	-2.93 (2.58)	-2.63 (2.33)	-2.96 (2.57)
Paid Parental Leave		0.67*** (0.22)	0.65** (0.23)	0.67* (0.22)
Demographic Characteristics				
Fertility Rate	-11.12 (24.01)	-15.81 (22.53)	-14.99 (22.58)	-14.90 (22.29)
Dependency Ratio	0.22 (1.35)	1.27 (1.16)	1.15 (1.21)	1.22 (1.21)
Population (in millions)	6.86*** (2.05)	4.91** (2.12)	5.02** (2.12)	4.92* (2.11)
Percent Female	-26.98** (10.79)	-20.09** (8.31)	-20.96** (8.45)	-20.25* (8.22)
Percent Female 15-44	2.60 (8.56)	10.81 (7.98)	10.81 (7.86)	10.68 (7.99)
Percent Catholic	-2.56 (1.68)	-2.89 (1.63)	-2.89* (1.62)	-2.82 (1.69)
Percent w/ Tertiary Degree	-0.47 (3.31)	-0.87 (3.13)	-0.85 (3.11)	-0.90 (3.14)
Per Capita GDP (in thousands)	1.35 (2.97)	-0.61 (2.78)	-0.60 (2.75)	-0.60 (2.82)
Economic Characteristics				
Female Labor Force Participation	-0.24 (1.00)	0.27 (0.92)	0.27 (0.93)	0.31 (0.92)
Female Unemployment	2.71** (0.92)	2.20** (0.93)	2.12** (0.85)	2.18* (0.93)
Union Density	0.08 (1.06)	-0.39 (1.04)	-0.31 (1.07)	-0.38 (1.04)
Constant	1178.96** (525.08)	764.84 (454.92)	802.50 (462.82)	769.45 (455.58)
Country and Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	613	613	613	613
R-squared	0.86	0.88	0.88	0.88
F-Statistics and p-Values for Joint Hypotheses			0.36 (0.71)	0.35 (0.71)

Robust standard errors and p-values in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

DISCUSSION

As the number of female parliamentarians increases around the world, it is important to consider how this change may contribute to substantive shifts in governmental policy priorities. Previous research suggests that women who hold elected office tend to prioritize and support policies that advance women's interests, such as those that promote gender equality and protect women's health (Swers, 1998; Schwindt-Bayer, 2006; Osborn & Mendez, 2010; Schulze, 2013). There is also evidence that greater female representation at various levels of governance is positively correlated with certain policy outcomes – for example, spending on welfare benefits and public health, and the provision and generosity of childcare and parental leave policies (Holman, 2013; Mavisakalyan, 2014; Bratton & Ray, 2002; Kittilson, 2008; Atchison & Down, 2009).

Recall that Kittilson (2008) finds a positive relationship between female parliamentary representation and the length of parental leave, but does not control for female cabinet-level representation. After controlling for this measure, Atchison and Down (2009) find no evidence of a relationship between the proportion of parliamentarians who are women and the length of parental leave, although they do find a significant relationship between the proportion of cabinet-level ministers who are women and parental leave. In contrast, I find a significant and positive relationship between the proportion of parliamentarians who are women and the length of parental leave in my analysis of 14 European Union countries over a 45-year period, even after accounting for the proportion of cabinet-level ministers who are women. It is likely that my findings differ from those of Atchison and Down (2009) because I differentiate between paid and protected parental leave, while other studies use a composite measure of both.

Overall, my results suggest that there is a positive, significant relationship between female parliamentary representation and the length of paid parental leave. More specifically, I find that a one percentage point increase in the proportion of parliamentarians who are women is associated with an increase in the length of paid parental leave of between seven and ten days, holding the other variables in my model constant. My results indicate that an increase of one standard deviation in female parliamentary representation is associated with an increase of between about eleven and fifteen weeks in paid leave.⁴⁰ As the median value for paid leave among the countries in my sample is 22 weeks, this reflects a relationship of considerable magnitude. In sum, and in line with my original hypothesis, my key relationship of interest for paid leave is not only positive and statistically significant, but also substantively meaningful.

In contrast, the estimated relationship between the proportion of parliamentarians who are women and the length of protected parental leave is not statistically significant at conventional levels for any of the specifications in which I include country or year fixed effects, and the magnitude of the relationship falls dramatically with the inclusion of a control for the proportion of cabinet-level ministers who are women. In keeping with Atchison and Down's (2009) results, I find that female representation at the cabinet level is a stronger and more precisely estimated predictor of the length of protected parental leave than is female representation at the parliamentary level.

⁴⁰ As discussed in a previous footnote, I made this calculation using results taken from Model (4) as a lower-bound estimate and from Model (5) as an upper-bound estimate of my key relationship.

Limitations

Despite my use of a wide variety of political, demographic, and economic controls, as well as country and year fixed effects, my estimates are still likely to be biased by omitted variable bias. First, there are several political characteristics that are not included in my analyses but that could be correlated with both the proportion of parliamentarians who are women and the length of parental leave. For example, both Kittilson (2008) and Atchison and Down (2009) account for changes in electoral system type. There is evidence that countries with more proportional (as opposed to majoritarian, or winner-takes-all) election processes tend to have higher levels of female parliamentary representation (Norris, 2006). It is also possible that parliaments with electoral systems based on proportional representation may be more likely to consider and implement policies that benefit non-dominant societal groups, such as women. Because modern European electoral systems tend to remain relatively constant, most variation in this characteristic would be captured by my country fixed effects. However, my estimates could be biased by my failure to account for any national electoral system changes that occurred over my period of analysis.

Additionally, several of the countries in my sample have implemented mandatory or voluntary quotas to increase the representation of women in government (European Commission, 2011). There is some evidence that the use of quotas may contribute to increased gender parity on ballots and in parliamentary seats, although the findings in the literature vary substantially from country to country (Norris, 2006). Similarly, it may be that parliaments or parties that implement quotas are also more likely to support other policies that primarily benefit women, such as expansions of parental leave. The omission of this political characteristic, to the extent that it changes within countries over time, may bias my estimates as well.

Atchison (2015) suggests that it may also be important to control for socio-cultural characteristics. My fixed effects models do not capture the influence of any short-lived women's movements or other bursts of public support for policies that advance women's interests. Because of the difficulty of precisely measuring such movements, I was unable to account for the possible effect of dramatic national shifts in country-level public opinion. Taken together, the omission of national, short-lived socio-cultural factors and the political characteristics described above likely exert an upward bias on my estimates because they are positively correlated with both my dependent and key independent variables. Therefore, my results may overstate the relationship between female representation and the length of parental leave.

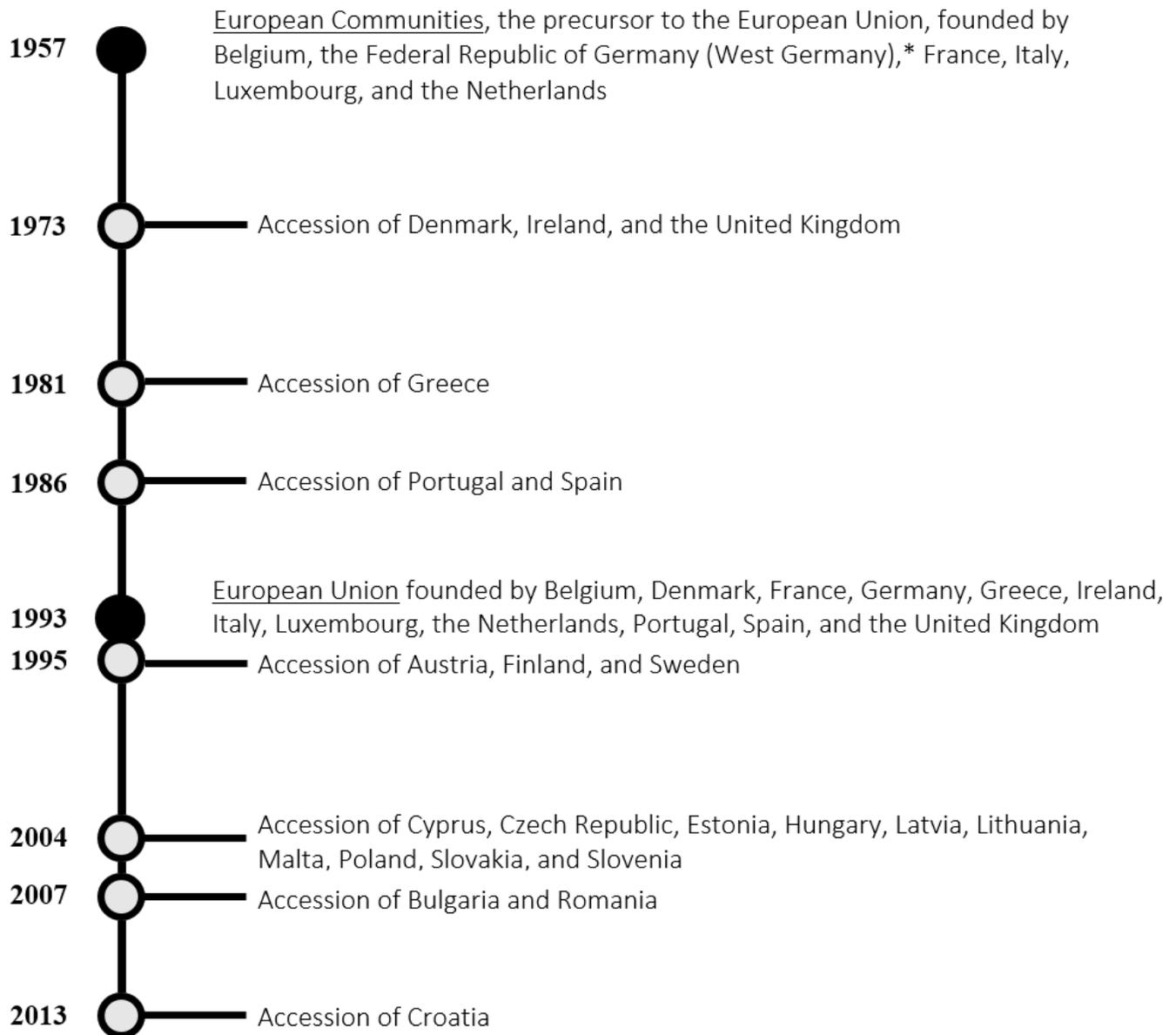
Finally, it is important to consider the limitations of my study related to my data. Although it is sensible to measure the generosity of protected parental leave in number of weeks, it is not ideal to measure the generosity of paid parental leave in this way. As referenced in my Background section, there is substantial variation in the replacement rates that countries provide through paid parental leave schemes, and my data do not take this variation into account. My data would therefore show that a country with slightly longer paid leave but with a low replacement rate is more "generous" than a country that has slightly shorter paid leave with a high replacement rate. In other words, quantifying paid leave in terms of weeks without consideration of financial benefits may be an inadequate measure of generosity.

In addition, my analyses assume that extensions in the length of parental leave reflect increased support for a policy that primarily benefits women. This assumption is potentially problematic, as increases in the length of parental leave may not always align with the goals of reducing gender wage or employment gaps. In fact, there is some evidence that extended parental leave, taken to mean leave beyond two years in length, can negatively affect women's labor

market outcomes (Thévenon & Solaz, 2013). Therefore, it is possible that female policymakers who are acting as substantive representatives of women's interests may not support increasing the length of parental leave available to women, or may instead advocate for increases in payment rates (which, as previously discussed, are not captured by my data). All of these considerations leave a great number of questions to be explored in future research.

Previous research has found evidence of positive relationships between the substantive representation of women in government and the incidence and largesse of policies that primarily affect women. Although my estimates of the relationship between female parliamentary representation and parental leave are significant and positive only for those models in which paid leave is the dependent variable, I find the level of female representation at the cabinet level to be a positive and significant predictor of leave in models in which protected leave is the dependent variable. Therefore, the results of both sets of analyses support the notion that Western European countries with higher proportions of women in government, whether at the parliamentary level or at the cabinet level, tend to have longer parental leave (paid leave in the case of the former and protected leave in the case of the latter). It is also important to note that, in both cases, female representation in government overwhelms party ideology as a predictor of parental leave length. Given the increasing prominence of women in politics, researchers should continue to consider how such developments may influence the direction of public policies, in particular, those seen as advancing women's interests.

APPENDIX: THE DEVELOPMENT OF THE EUROPEAN UNION 1957-2013



*The German Democratic Republic (East Germany) became a member of the European Communities following the reunification of Germany in 1990. The source for all information reported here is Eurostat (2014). Timeline created by author but inspired by Vertex42's "Vertical Bubble Chart Timeline" (Wittwer, 2017).

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