Gender and Political Careers:
A Comparative Labor Market Analysis of Female Political Representation

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Abstract

Most explanations of female under-representation in democratic polities emphasize either demand for female representatives (say, as a function of female labor force participation), the political mobilization of women, or overt or covert discrimination by male-dominated political organizations. We offer a different--though not necessarily competing--explanation based on an analysis of democratic politics as a particular type of career market. Because seniority is an important factor in legislative effectiveness in candidate-centered systems, career interruptions for the sake of childcare and other family work hurts female aspiring politicians more seriously in majoritarian systems than in PR systems where political parties control the policy platform and constituency service is a minor consideration in the careers of candidates. We find support for this explanation from several sources. First, we find that personalistic electoral systems penalize females (following the rank ordering technique provided by Carey and Shugart 1995). Second, we find that in countries with mixed electoral systems women do better in seats elected by PR than by SMP.

1. Introduction

Females are strikingly underrepresented in the world's legislatures, though the variation among rich democracies is enormous, ranging from 9% in Japan and 14% in the US at the low end, to parity in Sweden at the high end. These examples are illustrative of a pattern, for the prevailing wisdom is correct that proportional representation systems are friendlier to successful female candidacy than district systems. Indeed, in Japan, 6.3% of the parliamentarians elected from single member districts are females, compared to 13.3% elected from party lists on proportional representation ballots. Though 13.3% is still low by world standards, it is double the district line-up returned by the same voters in the same election, and the current electoral system has only been in place since 1994. Clearly, cultural preferences leave substantial variation unexplained.

Exactly how proportional representation rules help the cause of female candidates, however, is only dimly understood. In this paper we suggest an explanation that centers on how electoral rules and other factors shape the labor markets in political careers across countries. The demand for female representation is powerfully influenced by how effective political party leaders, and indirectly voters, expect female candidates will be. Even in the absence of discriminatory social norms, personalistic electoral rules should hurt the electoral chances of female candidates by placing a premium on seniority, career continuity, and individual clout in a way that centralized, party-centered systems do not. By a political analogue to Say's Law, if the demand for female legislators is lower, the supply of qualified female candidates will also be lower. Those who do run are ones who have somehow managed to compensate for institutional disadvantages.

By contrast, in electoral systems where candidates are elected in large districts and votes are cast for political parties as opposed to individual candidates, party labels (and policy reputation) rather than individual qualities become the deciding factor. Voters still care about the competency of the party as a whole, of course, but such competency will be much closer associated with party leaders than with individual candidates. And because the critical resource of the party is the party label, party leaders will be more concerned with party discipline than with seniority and cultivating strong candidates. Indeed the latter may be viewed more as a threat to the party leadership than as an electoral resource. For rank-and-file candidates, being able to commit to long hours and continuous, uninterrupted careers is not a particularly valuable asset in the competition for a spot on the candidate list.

The difference between electoral system and female representation may be stronger if it were not for the fact that majoritarian electoral rules tend to be associated with labor markets that permit the rise of a larger pool of female managers with leadership and managerial experience who may be able inspire voter confidence in their political acumen. Proportional representation systems, by contrast, are associated with production systems that may foster fewer female private sector managers. But large state PR systems are likely to foster women in labor union management and women with a strong interest in promoting public sector employment. The available supply of women with politically relevant talent and experience is therefore uneven across electoral systems, but it strikes us as unlikely that this is the personnel bottleneck that some observers may suppose it to

be. Where the labor market for politicians is female-friendly, the supply should be forthcoming. There may however an effect of production systems on the *demand* for females that we discuss more below. Basically, female candidates may be better able to make credible commitments to "female" issues, and insofar as these are politicized this may offset other disadvantages. The challenge is to identify the structural limits on the demand for female representation, depending on whether or not career interruption hurts political effectiveness in a given political system. It is ironic, and casts a large shadow on cultural arguments, that majoritarian systems can at once be associated with the most female managers in the private sector but perform so dismally in female political representation.

The rest of the paper is organized as follows. Section 2 lays out our argument about political labor markets in greater detail, focusing on observable implications that can be tested on available data. Section 3 tests the argument on data on electoral systems and representation across 23 countries during the postwar period. We consider both whether institutional design can explain cross-national differences and whether these differences can help account for why some countries have experienced a much greater rise in female representation than others. In addition we offer evidence for particular countries that exhibit variation in electoral institutions. First, we use the introduction of new electoral rules for some elections in Italy and Japan as natural experiments to examine whether the introduction of PR (in Japan) and single member plurality members (in Italy) has been associated with a rise or fall in female representation (compared to seats filled by a different electoral rule). Secondly, we compare the representation of women in seats

elected through PR versus SMP within countries. This analysis allows us to include Germany where half the members of the Bundesrat are elected in single member districts and half through PR lists. Finally, we examine whether female success in American races vary with tenure rates, where the expectation is that short tenure rates reduce the bias against women. All these tests allow us to control for the role of culture or voter preferences that are not induced by political institutions.

2. The Market for Politicians

When effective candidates have to develop long-term ties to their constituents and to other politicians, women are at a disadvantage. Some will, of course, make the necessary sacrifices, but women are less likely to do so and statistical discrimination – the use of gender as a cue for your vote when information is incomplete -- will magnify the problem because parties cannot know the true types among first-term candidates. The bias is affected by two related factors. First, single member districts, or similar electoral rules that emphasize close ties to constituencies, place a premium on long tenure because the effectiveness of legislators in delivering goods to their constituencies depends on membership in important committees and the ability to make credible bargains with other politicians, both of which are a function of seniority and the prospects of reelection. Because men can more credibly commit to long and continuous careers they are more likely to be elected and reelected, which increase their legislative effectiveness, and hence their reelection chances, etc. Second, weak parties mean that individual candidates cannot rely on the party label to lift them above the electoral threshold. Instead, as emphasized by Carey and Shugart (1995), they have to cultivate a personal following that

again puts a premium on seniority and the accumulation of political capital. In turn, weak political parties, as is well understood, are associated with presidential systems where the ability to hold on to executive power does not depend on strong party discipline. Strong parties are associated with parliamentary systems, except where a single party has such a dominant position that it does not dependent on strict discipline (as in the case of the Italian Christian Democrats of the Japanese Liberal party before the 1990s).

PR with large districts, or smaller districts where votes are pooled across candidates, produces a very different dynamic that is more conducive to female representation. There is little incentive for individual candidates to cater to local constituencies, and the party label becomes much more important in winning elections than the appeal of individual candidates. Likewise, programmatic parties will place more value on candidate loyalty to the party's platform, which incentivizes them to nominate and promote politicians with relatively little independent political power – often with an eye to the symbolic value of adhering to norms such as gender equity. Voters always want effective candidates, of course, but what an effective candidate is depends on the political system. Where the party label is of great electoral consequence, women are in no particular disadvantage since representatives (at least the backbenchers) are mostly asked to simply promote policies and vote for them when bills are sent to the floor. Parties can thus respond relatively easily to demands for gender equality (though perhaps less so at the leadership level).

In slightly more formal language, imagine the following two-stage candidate selection game. In the first (nomination) stage, political party leaders select candidates among the available pool of potential candidates to represent their party in the next election. Parties seek to maximize their policy preferences, which is a function of voter support, party discipline (ie, whether MPs toe the party line), and effectiveness in legislative bargaining. In the second stage, voters cast their vote for either party programs or individual candidates depending on the electoral system. Voters prefer candidates/parties who are i) close to their own policy preferences, and ii) reliable, and iii) effective in legislative bargaining.

The electoral system constrains the choices of voters and candidates. At one extreme, in closed list systems with a single national district, the party must present a single platform and there is no scope for voters to vote for individual candidates who deviate from that platform. In this situation, voters care only about the distance between their own policy preferences and the party platform, and its effectiveness in advancing it. Any post-election deviations from the platform are a source of uncertainly and a reason not to vote for the party. Anticipating this, the party will put a premium on party loyalty in choosing candidates, whereas effectiveness in legislative bargaining will be a function of the ability of the party leadership to leverage its legislative weight in bargaining with potential coalition partners. The result is that the characteristics of rank-and-file candidates become largely irrelevant, except their willingness to toe the party line. Voters therefore choose parties because of the ability credible to commit to a desired policy platform (the first stage), and parties in consequence choose candidates to sure

they can deliver on electoral promises that they make. Assuming that women are no less loyal than men on average, and if both genders are equally capable of credibly committing to certain policies, there is no reason to expect a gender bias in the selection of candidates.1

Candidate-centered systems, such as single member districts (SMD) or the single non-transferable vote (SNTV) system once in place in Japan, are different because whether a candidate gets elected is likely to depend, at least in some measure, on his or her ability to deliver policies that are favorable to the district. And insofar as individual candidates become guarantors for the pursuit of constituency interests, voters cannot ignore the legislative effectiveness of candidates. Nor, by implication, can the party leadership. Effectiveness in turn derives from innate abilities as well as the bargaining power that comes with being able to never leave the negotiation table, accumulated knowledge about arcane committee procedures, and the opportunity to cultivate a reputation for making credible threats and promises that comes with seniority and uninterrupted political careers. Key to understand inequality in representation is that men on average have an advantage in accumulating political bargaining power, and hence the ability to deliver constituency goods, because men everywhere enjoy lower average responsibility in caring for young children, elderly parents, and in carrying out other family-related duties. This male advantage is what is known to produce inequalities in private labor markets that rely

[1] The only other potential concern of the leadership in this game will be that enough potential future leaders are recruited to maintain the party's image among voters as competent. But this requires far-sightedness, and it may easily be outweighed by concerns about recruiting overly ambitious candidates who might challenge their own leadership.

heavily on specialized skills and long tenures (Estevez-Abe et al. 2001, Estevez-Abe 2006), and there are no reasons to suspect that political labor markets should be different.

The implication is not necessarily that male candidates are more likely to win elections than female candidates. Since voters have information about the past effectiveness of incumbents, they choose these without regard to gender. The same is true for rookie candidates as long as voters can reasonable assume that parties will pick the best candidates. Since parties have an electoral incentive to do so, this is a rational expectation in the game. But by the same token this implies that parties choose candidates for open seats in a manner that discriminates against women. Specifically, the party will pick those candidates who are close to the party platform and show good potential for being effective in legislative bargaining and for cultivating a personal following. Parties cannot predict the future effectiveness of young candidates with certainty, and therefore rely in some measure on imperfect proxies. In particular, they know that men are on average more likely than women to have uninterrupted political careers and to be able to sacrifice family in a manner that is required to build up reputation with constituencies, fellow politicians, and bureaucrats. For this reason, they are more likely to choose men among equally qualified candidates in terms of ability and policy compatibility. The more electoral success relies on ability to cultivate a personal following and curry favors with others, the greater the bias.

The gender bias in the candidate selection process increases the less the party is concerned with party discipline. When party discipline is important for maintaining

government power, the discretion of individual legislators may have to be contained. Through some discretion is clearly desirable from an electoral point of view, too much can cause the governing party to lose critical votes in the legislature. As often noted, this is an aspect of parliamentary systems, and much less of a concern in presidential systems where government power does not depend on maintaining a majority in the legislature (Persson and Tabellini 200?).

Another complicating factor is that women may be better able credibly to commit to policies that advance the position of women. As in the case of competence, there is an incomplete information problem in terms of voters being confident that the party will implement its policy platform. This may create a gender bias to the extent that issues are gender specific and female candidates can more credibly signal their support for policies that help women balance family and career. If such policies become salient enough for a significant number of women to determine their vote, while the same is not true for men, parties have an incentive to field more female candidates as a way to capture this new group of female "swing" voters. It is plausible, as we have argued elsewhere, that this dynamic is particularly likely to emerge in countries with labor markets that put women in a distinct disadvantage (Iversen and Rosenbluth 2006). In turn, these countries are also the ones that tend to have PR electoral systems.

It is the paradox of welfare states that proportional representation systems tend to suppress private sector female labor force participation, despite the boost to female wages from wage compression, because strong unions tend to create labor markets that penalize

career interruptions (Estevez-Abe 1999, Iversen and Rosenbluth 2006). The coordinated market economies typical of proportional representation systems tend to organize production in a manner that make use of long-term labor contracts and specific human capital investments that lose value when broken off by periods of child rearing or other family responsibilities. Firms respond by avoiding hiring or promoting women, and females for their part are less likely to seek jobs that require the long term, specific investments to which they have difficulty committing.[2]

Government policy, and specifically the hiring of females in public sector jobs, can offset weak private sector demand for female labor, as in the case of the Scandinavian countries. The gender voting gap is in fact the largest in countries with the largest public sectors, because these women owe to the government not only supplemental help in managing the family-career juggling act, but their very jobs.

Majoritarian electoral systems, in contrast to proportional representation systems, tend to undergird liberal market economies in which labor is forced to adjust to market exigencies more or less on its own and potentially quite frequently. While devastating to the people losing their jobs, fluid labor markets inadvertently help females by reducing employers' incentives to invest in long-term human capital. The demand for female labor is higher in proportion to male job insecurity, shorter tenure rates, less restrictive hiring and firing rules, and corporate reliance on mobile, general skills for which there is no or little penalty associated with career interruption. Because women have the market, rather than government policies, to thank for the relatively level playing field they experience,

[2] Cusack et al. (2007) provide an account of the origins of the linkage between PR and organized capitalism.

they have less of an interest in pushing for interventionist government policies that subsidize female employment. Because they are redistributive, such policies are more likely to be seen as matter of class than gender politics. Though women in LMEs may benefit from policies that further shifted the burdens of family work away from women *and* increased income equality (women in LMEs still face a significant gender wage gap), the intra-gender wage inequality in LMEs makes this sort of collective action extremely unlikely. Women at the top of the income ladder have at their disposal private sector alternatives—often supplied by low-paid female workers--to tax-funded childcare and other services.

3. Empirical Analysis: Large-N Results

Our empirical analysis falls into two parts. In the first we test the institutional hypotheses on data from 23 advanced democracies beginning in 1945 or at the inception of democracy if later. The dependent variable is the share of seats in national legislatures held by women, using legislative sessions as the unit of observation. Since nearly all the institutional variation is cross-national, the effects of these institutions mainly show up as differences across countries. We do, however, consider possible explanations for the cross-time trends, and we show that structural forces of change that have driven up female representation everywhere, especially female labor force participation, have been powerfully conditioned by the design of electoral institutions.

In the subsequent section we take advantage of differences in electoral institutions within some countries -- either across electoral tiers or across time -- to explore whether these

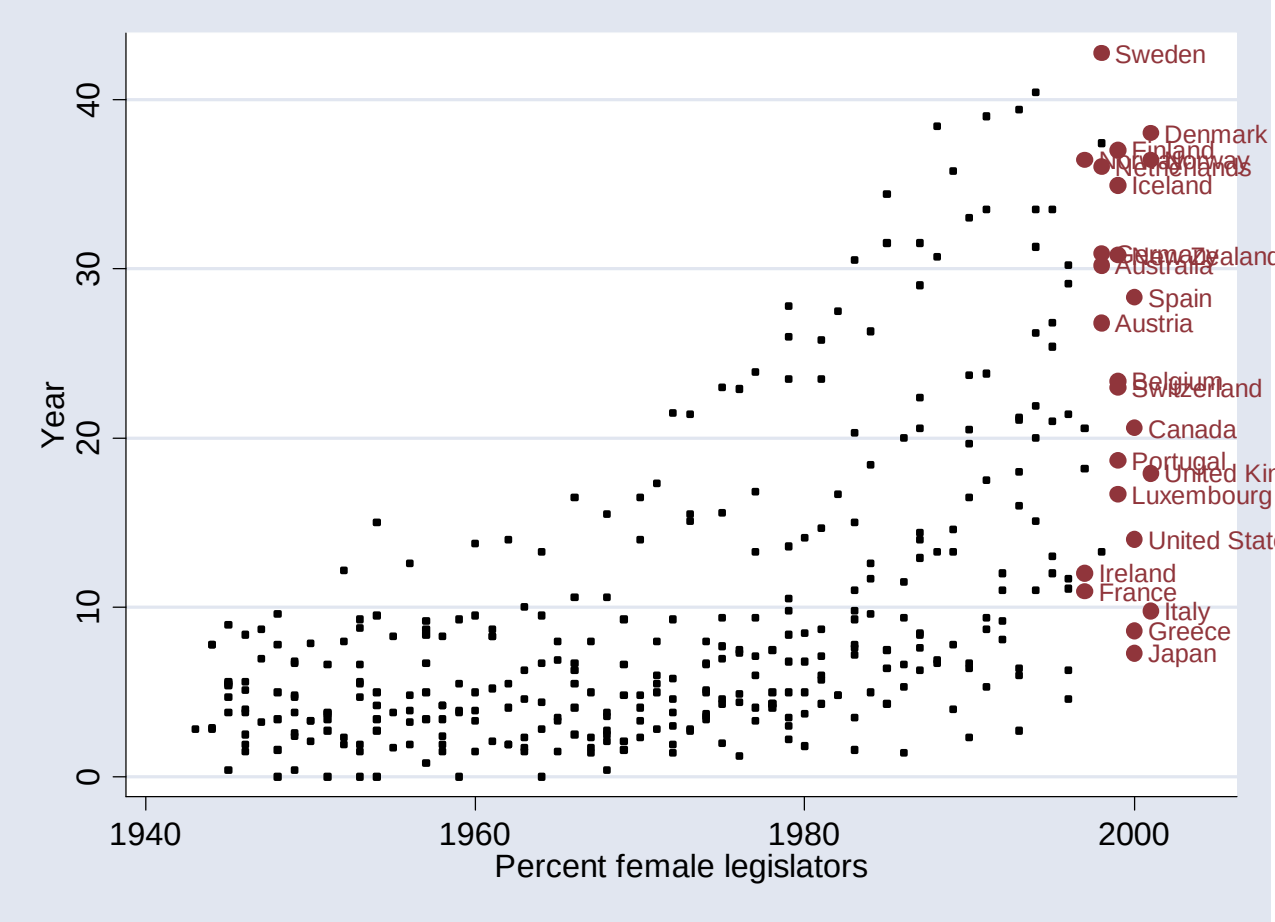
appear to affect representation as we would expect. We can exploit this variance as "natural experiments" to test whether women in the same political system do better under some rules rather than others. While the results for a small number of cases can always be challenged on grounds that they are not representative, they can significantly improve our confidence in the causal relationships that are assumed in the large-N analysis.

3.1. Large-N results

Figure 1 shows the share of female seats in the lower house of national assemblies across 23 democracies and approximately 55 years. One is struck by a notable rise in representation over time from an average of about 5 percent immediately following the war to about 25 percent around 2000. But the cross-national differences are also large, and they have been increasing sharply over time. Thus, whereas the range is less than 10 percent in the first observations after the war, in the most recent the female share of representatives varies from a mere 7 percent in Japan to near parity in Sweden.

Clearly the inter-temporal variance cannot be explained by changes in political institutions, which have been modest and quite recent where they have occurred, but it is entirely possible that institutional differences have attenuated or magnified the forces of change that have caused female representation to rise everywhere. Along with others we have emphasized two key forces of change in related work (see Iversen and Rosenbluth 2006 add more refs). One is entry of women into paid employment caused by the postwar economic boom and the rise of services (as well as the associated rise in divorce

Figure 1. Female share of legislative seats in 23 democracies, 1945-2000.



rates and public provision of daycare). As women enter the labor market they become part of networks and organizations (such as unions) where they are more likely to be exposed to political discussion and advocacy, which in turn encourages interest and involvement in politics. Some will also acquire skills through their work that are also useful for political careers. Although the number of women who end up running for national office is very small, most are recruited among those who are active in the labor market, so representation will likely rise with labor market participation. There may be a

significant knock-on effect as women increasingly complete university degrees, which are important assets for launching successful political careers.

The second force of change the rise of service employment. As we have argued elsewhere, the breakdown of patriarchal values during the past half century is closely linked to the rise of services because these do not depend on physical strength and typically rely more on general than on firm or industry-specific skills. Since specific skills disadvantage women who cannot as easily commit to uninterrupted careers, and since most services rely on social rather than manual skills, postindustrialization has been a big boon for female labor force participation. But it has also had the effect of accelerating changes in gender norms. Because women compete on a more equal footing with men for jobs in services than in either manufacturing or agriculture, it has improved women's bargaining position in the family and encouraged caring parents to emphasize values in daughters that emphasize equality. Like boys for centuries, girls are increasingly taught to be assertive, acquire a good education, and prioritize financial independence. While these values certainly do not lead most women to seek political careers, they do tend to augment the pool of women from which political candidates will be recruited, and voters are less likely to be prejudiced against female candidates.

The importance of labor market participation and the rise of services for female representation can be easily ascertained in a model where we control for all cross-national differences using country-specific intercepts (or fixed effects). Model 1 in Table 1 uses a standard setup with a lagged dependent variable (which removes first-order

serial correlation) and panel corrected standard errors (Beck and Katz 1995). The results are for the post-1960 period where we have complete data for all variables and countries. The predicted effect of a one percent change in the female share of the labor force is to increase female representation by .18 percent in short run and by .78 percent in the long run (.18 divided by one minus the parameter on the lagged dependent variable). The effects of a one percent increase in service sector employment are somewhat larger: .23 and 1 respectively. This implies a 26 increase in representation as a result of the observed rise in female and service sector employment between the early 1960s and the late 1990s. The actually observed average increase in representation is only 18, and although the long-term predictions project what will happen well beyond year 2000 the prediction seems implausibly large.

A well-known source of this problem is that the lagged dependent variable can bias the results if it captures effects other than first-order serial correlation (which arises in our data primarily because incumbents are slow to be replaced). An alternative strategy is to omit the lagged dependent variable and instead correct for AR-1 correlation in the residuals. The results of using this approach are shown in model (2). The coefficients on the two independent variables are now estimates of the total (long-term) effects, and we can see that these are smaller than before. The average changes in female employment and service employment between the 1960s and 2000 now translate into a more sensible

predicted increase in female representation of 16 percent – close to the 18 percent actual increase.3

Table 1. The determinants of female representation in 23 democratic legislatures, 1960-2000. Standard errors in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Female share of labor force	0.18*	0.41**	0.62**	0.83**	0.82**	0.37**	0.22**
	(0.07)	(0.10)	(0.09)	(0.09)	(0.08)	(0.10)	(0.12)
Service employment as pct of working age pop.	0.23**	0.72**	-	-	-	-	-
	(0.05)	(0.09)					
GDP per capita ('000 dollars)	-	-	0.50**	0.36**	0.37**	0.50**	0.44**
			(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Electoral district size	-	-	-	8.36**	-	-	-
				(1.41)			
Pooling of votes	-	-	-	6.98**	-	-	-
				(0.85)			
Presidentialism	-	-	-	-4.59**	-4.43**	-5.67**	-3.04**
				(1.08)	(1.07)	(2.47)	(0.93)
Left party strength (percent seats controlled by left)	-	-	-	-0.04*	-0.04*	-0.03	-1.13
				(0.02)	(0.02)	(0.02)	(1.95)
Programmatic parties	-	-	-	-	7.36**	-	-1.53
					(0.69)		(1.26)
Female share of LF x Programmatic parties	-	-	-	-	-	0.29**	0.64**
						(0.04)	(0.08)
Lagged dependent variable	0.77***	-	-	-	-	-	-
	(0.06)						
R-squared	0.949	0.878	0.874	0.681	0.682	0.895	0.714
N	241	244	266	249	249	249	249
Number of countries	21	21	23	23	23	23	23
Fixed effects	Yes	Yes	Yes	No	No	Yes	No
Correction for AR-1	No	Yes	Yes	Yes	Yes	Yes	Yes
Rho	-	0.47	0.49	0.78	0.76	0.47	0.64

Key: * : p<.05; ** p<.01 (two-tailed tests)

[3] Note also that the predicted Rho of..47 is notably smaller than the coefficient on the lagged dependent variable (.77), which suggests that the latter is picking up more than just auto-correlation and leading us to overestimate the long-term effects.

Model (3) substitutes GDP per capita for service employment because we have data for all 23 countries on the former variable, but only for 21 countries on the latter. The correlation between the two variables is high (.77), and none of the other results presented in Table 1 are notably affected by using GDP per capita instead of service employment.[4] The long-run predictions are also very similar. To maximize country coverage, and since we are primarily interested in the effects of political institutions, we therefore use GDP per capita in the rest of the analysis.

Model (4) substitutes the fixed effects for a number of political-institutional variables. Since these display no or very little variance over time, we can only assess their cross-national effects by omitting the country-specific intercepts. Our attention centers on two measures of electoral systems.[5] One is the size of electoral districts, standardized by dividing by the number of seats in the national assembly.[6] The Netherlands is the only country in the dataset that treats the entire country as a single electoral district. In this case the value for the district size variable is therefore 1. As the number of candidates

[4] It is of course also possible that economic development itself drives up female representation, but we think it is plausible that the mechanism is still a rise in service employment (and female labor force participation) for the reasons spelled out above. Oil rich countries with high levels of income, for example, tend to be very gender inegalitarian. But for the rich democracies in our sample, economic development and employment structure are closely related, so one will always be a good proxy for the other.

[5] Carey and Shugart (1995) developed a ranking of countries according to their assessment of the effects of a variety of electoral system attributes on the incentives of candidates to cultivate a personal vote. Their ranking is obviously relevant to our explanation, but it is based on a large number of (implicit) discretionary decisions about the importance of different variables, which can be contested. We prefer to keep the salient dimensions of the electoral system separate and let the data speak about salience. In the end, the composite variable we construct below is correlated with their ranking at a .85 level. We should also note that we are not directly using two of Carey and Shugart's variables: one they call "vote" and refers to "whether voters cast a single intra-party vote instead of multiple votes or a party-level vote", and one they call "ballot" and refers to whether parties control candidate access and position on a party list. There is practically no variance on the former variable in our sample. We discuss the relationship between the variables we use and the ballot or list variable below.

[6] The source for the two measures is ????

elected from each district shrinks, so does the electoral size variable– approaching 0 as we move towards single member districts. In cases where the electoral system has more than one tier, the measure is an average district magnitude across tiers weighted by the share of seats elected from each tier.

District size has a very obvious effect on the electoral strategies of political partiesthat is important to our story. Whereas it makes good sense to field candidates in SMD systems who can cater effectively to local interests, if the electoral district is the nation as a whole specialization of candidate appeals makes little sense. Even if a partycaters to regional interests, or to other narrowly defined constituencies, individualcandidates represent the party platform as opposed to their own local or personally cultivated constituencies. In turn, as the focus shifts from individual candidates to party platforms, voters lose interests in the attributes of the former and vote on policies and leadership competency instead.

Another electoral feature that affects the extent to which voters choose parties according to individual candidate qualities as opposed to partyplatforms is pooling of votes across candidates. If the votes for a candidate which exceeds the required number are transferred to other candidates from the same party, voting for a candidate is also in part a vote for the party. This forces voters to pay attention to the party label in addition to individual candidates. How much depends on the specific rules. If votes can only be pooled among sub-sets of candidates, it still makes sense to paya lot of attention to individualcandidate qualities. If votes are pooled across all party candidates in a district,

the party label comes to dominate the qualities of individual candidates in voting decisions, and the party will in consequence choose candidates more because of their ideology and loyalty to the party than their qualifications for cultivating a personal following. Following Carey and Shugart (1995), and the implementation of their coding scheme by Johnson and Wallack (2006), the variable is coded 1 if votes are pooled across all candidates in a district, 0 if no pooling is allowed, and ½ if pooling is across subsets of candidates. As in the case of the district magnitude variable, if there is more than one tier in the electoral system, the measure is an average across tiers weighted by the share of seats elected from each tier.

It should be pointed out that the pooling variable in our sample of countries is almost identical to distinguishing between list and other types of electoral systems (a distinction we used in the theoretical discussion and is captured by what Carey and Shugart in their coding scheme refer to as "ballot"). Where there is no pooling, there is typically no party list. The sole exception is Japan before the electoral reforms in 1994. Here parties made up lists of candidates, but votes for each candidate were not transferable to other candidates (i.e., no pooling). As a result, candidates from the same party had a strong incentive to differentiate themselves from each other, and a vote for any candidate was not primarily a vote for the party platform. For our purposes the incentives to cultivate a personal following in the SNTV system is captured by the pooling variable, not by a variable distinguishing between lists and no lists.[7]

[7] There is also an exception to the rule that no-list systems do not use pooling: Luxembourg. In this system candidates run on party platforms, but parties do not make up their own lists. However, since votes are pooled for each party, voters cannot ignore party platforms and the system in effect works very much like a typical European list system. The key for our purposes is therefore again the pooling. Excluding Japan and

Note that the effects of the two electoral variables are in the predicted direction and quite strong. Since both variables vary between 0 and 1 the interpretation of the estimated parameters are straightforward: Moving from the smallest to the largest electoral district increases the female share of seats in the legislature by an estimated 8 percent, while going from a system with no pooling of votes to one with pooling across all candidates increases female representation by 7 percent. As it turns out, the effects of the two variables can be almost fully captured by a simple additive index, which we have labeled "programmatic parties" (which may be contrasted to "candidate-oriented" parties) in Table 1. The estimated parameter on this variable is between that of the two component variables, and since its range is twice that of the component variables so is its total effect. Specifically, going from an electoral system with the fewest incentives of parties to compete on party programs (SMD with no pooling) to one where these incentives are the strongest (a single national district with pooling across all candidates) raises the predicted representation of women by 15 percent, all else equal. This difference between electoral systems is greater than the average representation of women in the legislature, which is only 12.2 percent.

The analysis also includes controls for presidentialism and the share of seats in the legislature that are controlled by left parties.[8] As noted in the theoretical section, there are long-standing arguments that presidentialism reduces the incentives of parties to

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Luxembourg, the correlation between pooling variable and a list variable is .89, and it is perfect (r=1) if the ambiguous cases between 0 and 1 on the pooling variable are omitted.

[8] The latter variable is from the Cusack-Engelhart dataset on political parties (see Cusack and Engelhart ???).

enforce adherence to the party label since government power does not depend on maintaining a majority in the legislature. This increases the scope for, and presumably electoral salience of, individual legislators who can strike deals with other legislators through log-rolling and other deal-making. And, indeed, presidential systems have 4-5 percent fewer female representatives, all else being equal, than parliamentary systems. Yet, it must be cautioned that since the only two countries in our sample with genuine presidential systems are France and the US and France, the presidentialism variable is simply a dummy for those two countries. That said, both political systems are known to have comparatively weak parties.

While one may reasonably have expected parties on the left to be more sensitive to gender equality, and while that may be true in particular cases, the effect of having higher left party representation is weak and in fact the opposite direction of the expectation. Left parties may have had beneficial indirect effects on female representation through especially female labor force participation -- which is partly linked to "women friendly" policies such as public daycare provision -- but they do not appear to have contributed much to improving gender equality in the legislature by advancing women further through their own ranks than other parties.

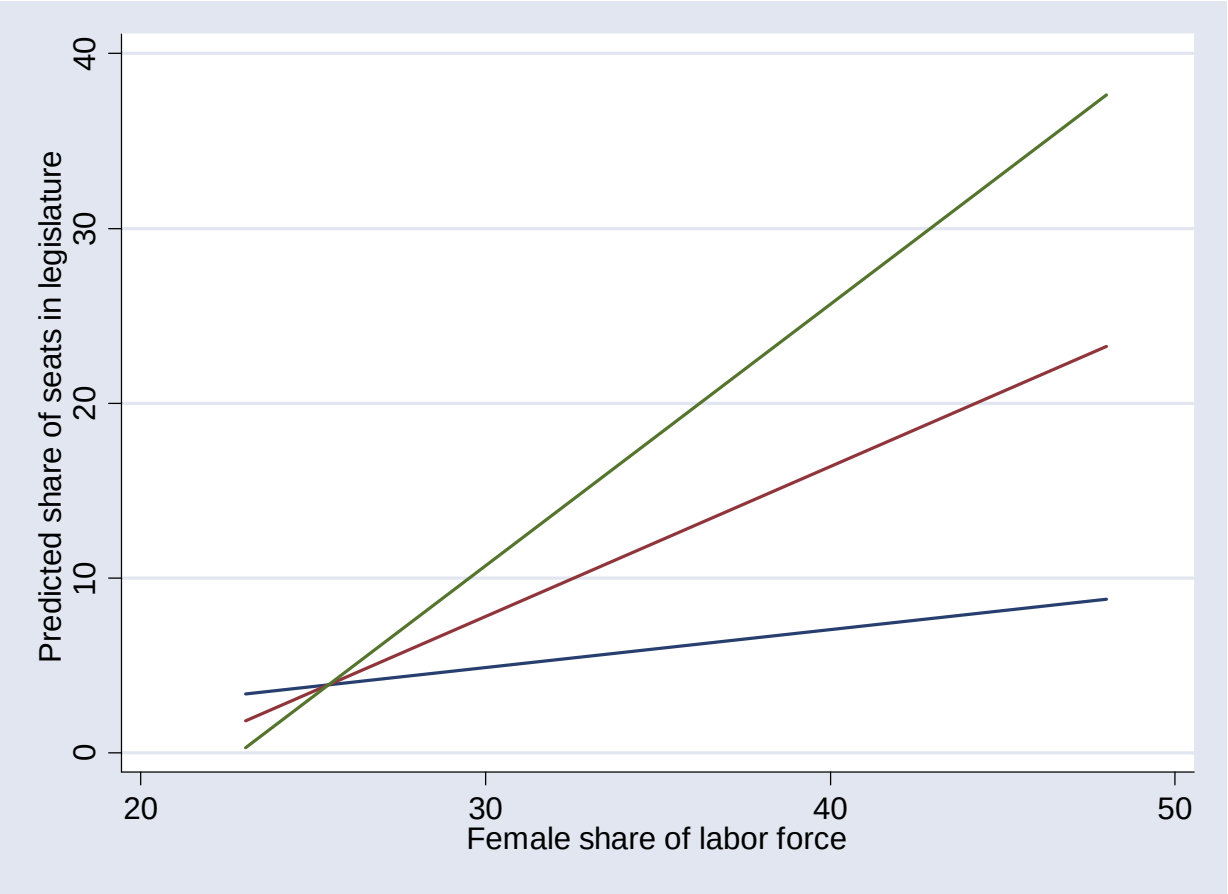
Models (6) and (7) combine the structural forces of change with the cross-national institutional differences, using a methodology proposed by Blanchard and Wolfers (1999). In model (6) we reintroduce the fixed country effects, but we retain the institutional variable ("programmatic parties") as an interaction term with female labor force

participation. All the variance in the dependent variable that can be accounted for by our explanatory variables is now inter-temporal, and what the institutional interaction variable tells us is whether pressure for change (represented by an increasing female share of the labor force) is accommodated or hindered in different institutional settings. Indeed institutions do matter is this sense. The rate of change in representation in response to higher female employment is almost three times higher in systems with strong incentives for programmatic parties than when these incentives are absent (the coefficient on the female labor force variable rises from .37 to .98).

Finally, in model (7) we drop the country fixed effects and re-introduce the programmatic party variable as an independent predictor. The results are very similar to those in the previous model and illustrated in Figure 2. The figure shows women's predicted share of seats in the legislature as a function of female labor force participation (restricted to the in-sample range), for different values on the programmatic party variable. At low levels of female labor force participation, electoral institutions do not matter much, and we could have anticipated this from Figure 1, which started this section. Immediately following the Second World War the there is little variation in female representation, and women were largely outside the labor market. As they gradually enter into paid work, the variance in representation across countries rises. The reason for this divergence, we have suggested, comes down to differences in the design of political institutions, especially electoral rules. Where these incentivize parties to compete mainly on programmatic differences in policies, women fare far better than where parties delegate a lot of power and discretion to individual candidates. In the former countries, political

gender equality is quickly catching up with economic equality: gender parity in employment is associated with more than 40 percent female representation. In the latter countries, female representation has trouble breaking above 10 percent. The US is a case in point. Although women have moving towards parity in terms of their share of jobs, they trail men in Congress by a daunting 14-86 margin. By contrast, women in Sweden have reached virtual parity in both spheres, even though Swedish women started out with fewer than 8 percent of seats in the legislature after the war.

Figure 2. Women's predicted share of seats in legislature as a function of female labor force participation and programmatic parties.



Note: The lower line is for candidate-oriented party systems, the top line is for programmatic-oriented party-systems.

4. Female Representation in Five Countries with Variation in Electoral Rules.

The previous section's analysis of cross-national data showed how electoral systems requiring large personal investments in constituency service and reputation disadvantage female candidates. This disadvantage need have no connection to attitudes towards women more generally, but can be explained by parties' and voters' expectations — similar to the statistical discrimination employers employ in CME labor markets — that females are more likely to interrupt their work, perhaps daily, and interrupt their careers, perhaps for years at a time, to care for their families. In political systems where politicians are expected to "bring home the bacon," voters want representatives whose loyalty and attention is undivided by that other home.

Although the cross-country results are consistent with our claims, they still leave open the possibility that national attitudes towards gender may influence voting behavior independently of the systemic challenges to female political careers posed by different electoral environments that we have emphasized. Adding fixed effects to the model increased the explained variance by 15-20 percent, and we cannot be sure that the effects attributed to the mostly invariant electoral rules are not due to unobserved cross-cultural differences. In this section we explore variation within five countries: Germany, Italy, Japan, New Zealand, and the US. Because the variation is intra-country, these cases allow us to hold constant gender stereotypes that might color vote choice. They also help exclude the possibility that the low number of female representatives in some countries are due to outright discrimination in the nomination process. The first four cases have mixed electoral systems that allow us to compare the performance of women in contests

governed by different electoral rules, and in three cases (Italy, Japan, and New Zealand) there is variance over time that can be treated as "natural experiments" All changed their electoral rules in the 1990s for reasons that were almost certainly unrelated to issues of gender inequality. The US is also a useful case for us, not only because of the availability of data at different levels of government, but also because relatively high levels of female labor force participation, even in the ranks of senior management, suggest openness to female leadership. The mismatch between women's high visibility in the economy and their low political profile in the US presents a genuine puzzle for arguments that emphasize cultural dispositions about gender roles. We exploit differences in career continuity and professionalization across levels of government in the US, given that turnover tends to be higher in local than in national government. If our argument about office-specific investments is right, we expect women to be more disadvantaged at higher levels of government where terms tend to be longer than for lower office.

4.1. *Germany, Italy, Japan, and New Zealand: Laboratories of natural experimentation*

Countries with mixed electoral systems provide periodic snapshots of the likelihood of females to get elected, holding constant everything but the type of seat being filled for office. For our purposes, the perfect natural experiment would be for each voter to have two ballots, one for each of two types of seats that epitomize the extreme cases of personalistic and party competition. As we have argued, we would expect any given voter, irrespective of his or her gender biases and prejudices, to be less likely to vote for female candidates for district-based seats in which seniority and career continuity are more important for office performance than in list seats that are controlled by the party

leadership and where the party label is much more important to voters. Party leaders and candidates, knowing the premium on career continuity in district-based systems, respond to the demand by disproportionately supplying men in those positions.[9]

No such perfect experiment exists, because party discipline, which in mixed systems is the product of some weighted average between two types of party back benchers, reins in the personalism of district-based candidates.[10] Specifically, when there is a need for party discipline in one type of seat that constrains the freedom of candidates in the other type of seat, voters in the latter have to pay more attention to the party label, which reduces the male advantage in those seats. Nonetheless, different electoral incentives persist to some degree across two types of seats in Germany, Italy, Japan, and New Zealand, providing approximations of the experiment conditions we have in mind.

In each of these countries, the share of women winning representation on lists is 8-16% higher than the share from districts. Since the average female share of seats is always significantly below 50 percent, this difference translates into a much higher probability that a woman will be nominated and elected in a list-based seat. In Germany, for example, the proportion getting elected in list seats is more than twice that of constituency seats. This is a striking difference, given that, as we have noted, district-

[9] Again, we remind the reader that the female candidates who *are* nominated for district-level seats are likely to be competitive equally competitive with men (they are simply fewer). This follows from the assumption that parties are trying win elections.

[10] We assume here a principal-agent model of political parties, in which back benchers delegate authority to the front bench depending on how well their individual electoral chances are served by strengthening party coherence and discipline.

based candidates in mixed systems are constrained by the rest of the party in the degree to which they can run personal electoral machines.

Germany offers the most comprehensive evidence for our thesis since the dual-ballot system has been in place since the end of the Second World War. German voters are confronted with two ballots, one for the local single-member constituency (coded 0) and one for a party list (coded 1), where the overall allocation of seats is proportional to the number of list votes. This unique electoral system enables us to run regressions that are analogous to Model (5) and (7) in the previous section (see Table 2). Model (1) explains female representation as a function of the share of women in the labor force, left party strength, and seat type; Model (2) adds an interaction between female share of the labor force and seat type.[11] Since GDP per capita is almost perfectly co-linear with the female share of the labor force (r = .98), we had to drop it (and the presidentialism variable is obviously no longer relevant). Like before we run a cross-section time-series model on the data, were the two district types are treated as sections.

The results are very similar to those for the cross-national sample. Female participation in paid employment also raises women's share of seats in the legislature, and women are much more likely to be elected in a party list seat than in a single-member constituency seat. The average estimated difference between the two seat types is 11.4 percent, which is equivalent to 85 percent of the average representation of women in the German

[11] For ease of interpretation, the lowest value for the female share of the labor force variable has been set to 0. This means that the effect of the list variable when the female labor force share is at its minimum is simply the parameter on the list variable.

legislature. This is somewhat smaller than the effect of electoral institutions we found in the cross-national analysis (125 percent), but it is obviously still a very sizable effect.

Table 2. District type and female representation in Germany, 1945-2005. Standard errors in parentheses.

	(1)	(2)
Female share of labor force	2.44***	1.86***
	(0.35)	(0.45)
Left party strength (percent	0.225**	0.227**
seats controlled by left)	(10.72)	(10.17)
Party list seat (as opposed to	11.39***	5.04
constituency seat)	(3.14)	(4.43)
Female share of LF x	-	1.18*
Party list		(0.62)
R-squared	0.818	0.847
N	30	30
Rho	0.70	0.70

Key: * : p<.10; ** p<.05; *** p<.01 (two-tailed tests)

The findings for the interactive model, where the effect of changes in female labor force participation is conditional on the type of seat, are also very similar to the analogous findings for the cross-national regression (Model 7 above). When women make up the smallest observed share of the labor force, the difference in seat type is fairly small (5 percent), whereas for the highest observed share the difference is large (18 percent). Just as countries with PR institutions and strong programmatic parties are more sensitive to the economic mobilization of women, so is the representation of women in the list seats of the German two-ballot system when compared to the constituency seats. The pattern is identical that illustrated in Figure 2 above except that the effects are somewhat smaller – precisely as predicted by the electoral system and party discipline arguments. The only

notable other difference in the results is that left parties are associated with a somewhat higher, and statistically significant, representation of women (whereas there is no effect in the cross-national sample). Since the main non-socialist party is the Christian Democrats, it is conceivable that this is an effect of a more conservative view on women.

In the cases of Italy, Japan, and New Zealand, since mixed electoral systems were only introduced after 1994 (abolished again in 2005 in Italy), the number of observations (which, again, refers to legislative sessions) is too small to replicate the German analysis. Instead, Table 3 simply shows the average differences in the share of women elected in different types of seats in each country (including Germany for comparison). In every case, and in fact in every election (there is a total of 11 under mixed rules), the share of women elected from list seats exceeds the share of women elected from constituency seats. The difference is modest in the case of the Italian Senate (though still 31 percent of the average representation of women), but there is a simple explanation for this that is consistent with our argument. Until 2005 the Italian PR system was an open list system where voters can indicate their preference for particular candidates, and that in turn creates competition between candidates for the same party **[Frances, we should check that the preferential system was not ended in 1994].** There is still pooling of votes, so the party label cannot be ignored, but there is an incentive for candidates to create a personal following that is missing in other PR list systems.

Table 3. Percent women elected to the national legislature by type of seat (Italy, Japan, New Zealand)

	List seats	Constituency seats	Difference
Italy	10.4	7.8	2.6
Japan	11.2	4.4	6.8
New Zealand	37.8	22.5	15.3
Germany	19.5	7.6	11.9

Note: Legislative assembly coverage: Italy: 1994, 1996, 2001; Japan:1996, 2000, 2003, 2005: New Zealand: 1996, 1999, 2002, 2005.

It is hard to think of an explanation for the pattern in Table 3 without recourse to differences in the incentives built into the electoral rules. The German pattern could perhaps be attributed to special circumstances that existed after World War Two (though it is not clear which, or why they would have persisted), but the mixed systems that were introduced very recently in the other three countries show the same tendency. Another explanation might be that the nomination process for constituency seats has greater input from local politicians who are more socially conservative than national politicians. But if this were true, the difference between list and constituency seats should disappear in urban districts where voters are socially liberal. That is not the case **[Frances, we should try to check this]**. Instead, the results add up to strong evidence, we believe, of lower voter demand for, and lower party and candidate supply of, female representatives in the kind of seat in which long term constituency service is vital for electoral success.

We can further explore the effects of electoral design by examining how female representation in the legislature responds to institutional reform. The change we would expect in the three cases where such reforms occurred is simply the difference across seat type recorded in Table 3 times the share of total seats elected under a new formula, where the direction of change depends on whether the reform is from a candidate-oriented system toward a party-oriented system, or vise versa. For example, in the case of New Zealand about 44 percent of the 120 MPs have been elected on party lists starting with the 1996 election. The rest have been chosen through the old SMP method. Since the (average) difference in female representation between the two systems is 15.3 percent (see Table 3) we would therefore expect the net effect of electoral reforms to be an increase in female representation of 0.44*15.3 = 8.8 percent. This is the figure shown in column (2) of Table 4. The actual increase was 13.9 percent (column 1). Much of this gap, however, can be accounted for by the fact that other factors affecting female representation also changed. Although we do not know the identity of all these factors in each case, we can use the cross-national results to predict their effect based on observed changes in the share of the labor force that is female, changes in per capita income, and changes in the representation of left parties in the legislature – while assuming that electoral institutions remain the same. This is the estimated counter-factuals in column (3), which are based on Model (7) from Table 2. In all cases we use the means for the post-reform period and compare the numbers to the means for the equivalent number of legislative assemblies before the reform.

In the case of New Zealand the total predicted change in representation from electoral reforms and exogenous factors (11.2) is very close to the actual observed change (13.9). In the other two cases there is either "too little" or "too much" observed change compared to the prediction. Thus, while improvement in female representation in Italy has been very slow, the predicted change is actually slightly negative because ofelectoral reforms that are disadvantageous to women. It is noteworthy, however, that with the return to a pure PR list system in 2005 – and this time to a system without preferential voting -- women's representation in the Senate almost doubled (from 7.9 to 13.7 percent). Structural forces of changes are clearly driving up the number of women elected to national office in Italy, but they have almost certainly been subdued by the "majoritarian" interlude from 1994 to 2005.

The pattern in Japan is the mirror image of Italy. Here electoral reforms should have benefited women, and the same should be true for the notable increases in incomes and growing female labor force participation. Yet actual changes have been less impressive: 5.6 compared to the prediction of 8.5. But it takes time to reach the equilibrium, and if we look at the period since the electoral reforms, women representation in the Diet has in fact increased sharply from 3.7 percent in 1993 to 9 percent in 2005 – more than a doubling. If we compare the last observation under the new rules to the last on the old rules – under the assumption that changes take time as a result of incumbency advantages – actual changes (noted in parentheses in column 1) are closer to the predicted (6.3 versus 8.5). Such convergence between observed and predicted changes can also be seen in the

other two cases. All in all, the cross-time evidence from the three cases clearly supports the cross-seat evidence.

Table 4. Actual and predicted change in female representation as a result of electoral reform.

	(1) Actual change	(2) Predicted effect of electoral change	(3) Predicted effect of other variables	(4) Total predicted change (2)+(3)
Italy	2.5 (1.7)	-1.9	1.7	-0.2
Japan	5.6 (6.3)	4.1	4.4	8.5
New Zealand	13.9 (11.0)	6.8	4.4	11.2

4.2. *The US: Levels of government and the effects of turnover rates*

It is a well-established empirical regularity that women in the US are represented in greater numbers at lower levels of government, and that the number of female politicians shrinks on the way up the political pyramid (Uhlaner and Lehman-Schlozman 1986, Cox 2000). One might infer from this that Americans are ready for women to represent them in local or state office but not in national government where more is at stake. Our argument, instead, is that lower political offices in the US are more like general skills labor markets where labor markets are fluid and the probability of career continuity is of lesser advantage. Local and state legislative jobs are characterized by high turnover compared to House and Senate seats. Relatively few politicians settle into careers on the city council, but plan to keep moving up the ladder. For political positions characterized by short-term careers, a female candidate who might quit in a few years to raise her

children or to care for elderly parents is not dramatically different than a male candidate with sights on higher office or a private sector career.[12]

Female politicians in the US seem to have internalized the logic of political labor markets, for they self-select into offices with higher turnover. The result is dramatic attrition of females on the way up the political pyramid, as incumbents have fewer lures to move them along and political tenure grows longer. In 2006, 15.4% of the US House of Representatives was female, compared with 22.8% female in state legislatures. Lower down at the county and town level, the percentage of women tends to be even higher. In New Jersey, for example, which has no women in the Congressional delegation, 27.7% of local commissioners were women. The pyramidical structure of female representation is similar in England, where 19.7% of the House of Commons is female compared to 27% of local councils.[13]

The contrast with the proportional representation systems in Europe is striking. There, party leaders choose candidates to higher office for party loyalty rather than voters choosing them on the basis of district loyalty and visibility, with the result that career interruption need not pull female politicians out of the cue for higher office. Rather than the pyramid we find in the US and UK, the structure of female representation in Sweden,

[12] Our argument is similar to Uhlaner's and Lehman-Schlozman's, who found that females tend to raise less campaign money because they are more likely to be running as challengers rather than as incumbents. "Donors behaved like bookmakers—what mattered was which horse would cross the finish line first, not whether it was a filly or a colt" (Uhlaner and Lehman-Schlozman 1986: 43). Gaddie and Bullock (1997) and Smith and Fox (2001) found that female candidates do well in open seat elections that they contest. But we note that females do not put themselves forward for open seat elections in numbers equal to male candidates, and we attribute this reticence to the importance of district-specific investments in the US system, in which male candidates have a decisive advantage.

[13] "Accounts of Feminism Among Women Local Councillors in England," *Women's Studies International Forum*, 26, 4: 345.

for example, is a column: 45.3% in the national parliament, 47.3% in county councils, and 42.4% in municipal councils.[14]

5. Conclusions

Our explanation for the gender gap in representation is very simple and uses the same logic for political careers that we know is a driving force behind gender inequality in other careers. When jobs require uninterrupted tenures and long inflexible schedules, women are at a distinct disadvantage. Political parties in advanced democracies may have an ambition to encourage gender equality in representation, but just like firms competing in product markets they are sometimes constrained by electoral competition to put up candidates who are in a strong position to produce specialized constituency goods that require a long tenure and round the clock presence. The pool of qualified candidates for that type of job has an overrepresentation of men, whether that job is in politics or in private enterprise. By contrast, where parties mainly compete on party labels there is no reason to prefer male over female candidates, at least for filling rank-and-file positions in the party. Ideological commitment and party loyalty are general qualities that do not differ systematically by gender. Again, the same logic applies to firms hiring in the external labor market for positions requiring general skills. As the ascent of women into middle management positions in the US illustrates, this is not incompatible with gender equality. But the personalistic qualities of the American political systems are.

[14] See http://www.scb.se/templates/Product___12337.asp, and "Local Government Sweden Fact Sheet," http://ww.sweden.se/upload/Sweden_se/english/factsheets/SI/SI_FS527_Local Government_in_Sweden/FS52vLowres.pdf.

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