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Autores:
Claudio Bravo-Ortega
Nicolas Eterovic
Valentina Paredes

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sdt@econ.uchile.cl
econ.uchile.cl/publicaciones

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Claudio Bravo-Ortega
School of Business and Economics
and
Department of Economics
Universidad de Chile

Nicolas Eterovic
Department of Economics
University of Essex

Valentina Paredes
Department of Economics
Universidad de Chile

Abstract

Despite the fact that female political participation has been steadily growing over time with unseen effects on public policy, women representation in politics is substantially lower than their proportion in society. Several studies have identified factors that could explain part of the cross-national variation in women´s representation. However, there is still no consensus on a baseline model for women´s representation. Moreover, none of these studies has dealt with the possible endogenous relation of some of the factors considered. In this paper we investigate the determinants of women´s representation, using a GMM system estimation to address the possible endogeneity. To estimate our model, we employ a unique data set that covers data for 191 countries from 1972 to 2004, in 8 different geographical regions. We propose a dynamic model for women´s representation and calculate each region´s steady state. We find that, keeping everything else constant, different regions have different steady states. Although for most regions their steady-state is well above their current percentage, without changing other variables, no region is going to have more than 22% of women in parliament, with the exception of Scandinavian countries. Moreover, we find that 77 to 93% of the gap with Scandinavia is explained by female secondary enrollment, labor force participation, fertility rates and political and economic rights.

Keywords: women politics, parliamentary elections, dynamic model.

JEL:

1. Introduction

Despite the fact that female political participation has been steadily growing over time with unseen effects on public policy, women representation in politics is substantially lower than their proportion in society. As of December 2014, the world average percentage of women in the upper house is 20.2% (Inter Parliamentary Union (IPU), 2015). Although there is cross national variation in these numbers, the percentage of women in parliament is well below 50% for all regions. For instance, the Americas have a 26.7% compared to Sub-Saharan Africa with a 22.1% and the Pacific Region with a 12.7%. The only region with a percentage above 30% is the Nordic Countries, which exhibit near a 42.0% of women in parliament, more than the double of the world average. This leads us to ask which are the barriers that women face when accessing to political power.

Several studies have identified factors that could explain part of the cross-national variation in women´s representation. Some of these factors include the institutional context, and socioeconomic and cultural factors. However, there is still no consensus on a baseline model for women´s representation (Stockemer and Byrne, 2012). Moreover, none of these studies has dealt with the possible endogenous relation of some of the factors considered. For example, it is very difficult to assess whether women participate more in politics because they are more educated than before or women are more educated because they have been benefited by policies implemented by women. The same applies for female labor participation. For this reason, in this paper we investigate the determinants of women´s representation, using a GMM system estimation to address the possible endogeneity. To estimate our model, we employ a unique data set that covers data for 191 countries from 1972 to 2004, in 8 different geographical regions.

We propose a dynamic model for women´s representation. Following the convergence literature (Barro and Sala-i-Marti, 1992), we analyze if there are automatic forces that lead to convergence in the percentage of women in parliament across countries over time. Using our model, we calculate each region´s steady state. We find that, keeping everything else constant, different regions have different steady states. Although for most regions their steady-state is well above their current percentage, without changing other variables, no region is going to have more than 22% of women in parliament, with the exception of Scandinavian countries. Moreover, we find that 77 to 93% of the gap with Scandinavia is

explained by female secondary enrollment, labor force participation, fertility rates and political and economic rights.

Our paper is structured as follows. Section 2 presents a brief literature review. Section 3 describe data sources and shows main statistics, Section 4 discusses the empirical approach of our estimations. Section 5 discusses the results and Section 6 concludes.

2. **Literature Review**

2.1 Women in Parliament

The literature has found multiple factors to determine women´s representation in parliament. Ever since seminal work by Duverger (1955), the type of *electoral systems* has been regarded as an important institutional factor; many studies have demonstrated that far more women are commonly elected under proportional party lists than via majoritarian single-member constituencies (Norris 1985, 2000; Rule 1987; Rule and Zimmerman 1994; Reynolds and Reilly 1997; Kenworthy and Malami 1999). The most important reason that women are better under proportional representation (PR) systems relates to party strategy in putting together a slate of candidates. In single-member district systems, parties only nominate a single candidate, while in PR systems a party nominates several candidates. Because of the zero sum nature of nominating decisions in single-member districts, female candidates must compete against existing interests within the party that are represented by men. In PR systems, the party is much more conscious of balancing its ticket to attract support from different constituencies. A woman candidate can be seen as a benefit to the ticket by attracting voters, without having the significant costs to intra-party peace of requiring powerful intra-party interests represented by men to step aside. This lower opportunity cost also makes it more likely that parties will react quickly to another party's conscious promotion of women (Matland and Studlar, 1996).

A second institutional factor that previous studies have found to affect the degree to which women are represented are quotas. Krook (2008), classifies most work on gender quotas identifying three basic kinds of quotas measures: reserve seats, which designates places for women in political assemblies that men are not eligible to contest; party quotas, which involve pledges by individual parties to nominate a specific percentage of women; and

legislative quotas, which require that all parties put forward a certain proportion of women. There is a fourth category of "soft" quotas. These are distinct from the other types of quotas in that they seek to encourage, but do not require, parties to promote the selection of more female candidates. Indeed, in many they are often not even called "quotas", although they often influence candidate recruitment processes to an equal or greater degree than "hard" quotas. Depending on which type of quota is being implemented we will have different outcomes for women´s representation. In addition, the electoral system is also pivotal for the effectiveness of the introduction of quotas for women´s representation. In particular, quotas tend to work better in proportional representation systems than in majority-voting systems in which there is a single candidate per electoral district (Peshard, 2003; Htun, 2005; Norris, 2006; Frechette, 2008).

The level of *party competition* in terms of the number and ideological polarization of parties is another factor that may influence opportunities for candidacy, including whether the country has a predominant one party system as in Japan, a two-party system exemplified by the U.S., as moderate multiparty system such as Germany, or a polarized multiparty system as in Ukraine, Ecuador and Israel (Lovenduski and Norris 1993; Matland 1993; Norris 1997; Caul 2000). Greater party competition may increase the access points for female candidacies, although this in itself does not necessarily lead to more women being elected. In this regard, it seem of great importance to examine whether the proportion of women in parliaments worldwide was significantly related to the level of democratization, the type of electoral system (classified simply into majoritarian, mixed, and proportional) and the level of party competition (measured by the number of parliamentary parties).

Instead of focusing on national level patterns of women´s representation, Caul (1997) focuses on party level differences, and finds that certain party characteristics actually influence party-level variation in women´s representation. High levels of institutionalization, a localized level of candidate nomination, and Leftist and Postmaterialist values all individually enable parties to increase the descriptive representation of women. The finding that women´s party activism is integral to women´s representation in parliament is especially encouraging in an era when women´s activity in party politics has increased substantially. Not only can women party activists pressure the party for women´s representation in parliamentary office, activists can also institutionalize the gains made by pressing to

implement rules that call for guaranteed proportions of female candidates.

Rule (1987) found one other political variable, the proportion of seats held by right-wing parties, also affected female representation. Right-wing parties are expected to support more conservative and traditional values that discourage women's participation in politics. Rule's analysis of early 1980s data supports this assertion.

Among economic factors, the effect of level of development has been widely studied. Early studies used GDP per capita or energy use as proxies of development, and found no effect on women´s representation (Kenworhty and Malami, 1999; Hughes, 2009; and Viterna, Fallon and Beckfield among others). Rosen (2012) shows that PR systems have a substantially larger effect on women´s parliamentary representation compared to less developed countries. On the other hand, he finds that quotas increase women´s representation in less developed countries, but have statistically insignificant effect in developed countries. Matland (1998) examines representation of women in national legislature in both developed and developing countries. He finds striking differences across the two samples. While a proportional representation electoral system, women´s participation in the labor force, the cultural standing of women, and the country´s level of development all have a positive effects on female representation in OECD democracies, none of these variables have a statistically significant and positive effect in less developed countries. These findings strongly suggest the existence of a threshold. Only after that threshold is passed do proportional representation, labor force participation, and the cultural standing exert positive influences on the representation of women.

Among socioeconomic factors influencing women´s representation, the impact of female labor participation has been strongly contested in the literature (see Stockemer and Byrne, 2012, Table 1, for a summary of the impact of women´s labor force participation on women´s representation in selected studies). Several studies have found that female labor participation has a significant, positive effect on women's level of political activity (Anderson 1975; Togeby 1994; Welch 1977). Increased levels of activism and political consciousness could easily result in demands for greater representation of women. Rule (1987), Norris (1985), Stockemer (2009) and Stockemer and Byrne (2012) found women labor force participation rates had a positive effect on women's representation, although only

Rule (1987) and Stockemer and Byrne (2012) found this effect to be statistically significant.

Political activism, besides being positively related to work force participation also increases with level of education. In addition, because members of the national legislature are disproportionately well educated (Putnam 1976), increasing levels of university education among women should expand the pool of possible women candidates (Darcy, Welch, and Clark 1994). Therefore, it is expected to find a positive relationship between the proportion of women with some university education and women's representation in national parliaments. Both Rule (1987) and Norris (1985) found such relationship, but only Rule found the effect to be statistically significant.

Regarding cultural factors, while many researchers have emphasized the importance of political culture, developing a good measure of cultural differences is quite difficult. Norris and Inglehart (2000), demonstrate that egalitarian attitudes towards women in office are more widespread in post-industrial societies, reflecting broad patterns of socioeconomic development and cultural modernization. Moreover these attitudes are not simply interesting for their own sake, since egalitarian values are significantly associated with where women have got elected to power. Finally, they argue that the more egalitarian attitudes evident among the younger generation in postindustrial societies, especially younger women, suggests that over time it can expected to see continued progress in female representation in these societies. Taken altogether, this implies that cultural change in postindustrial societies produces an environmental climate of opinion that is potentially more receptive to effective policy reforms designated to get more women into office, such as the use of positive discrimination or affirmative action strategies like gender quotas. They also examined in a more recent study (Norris, Inglehart and Welzel, 2003) the impact of cultural variables on the proportion of women in parliament, and on society´s level of democracy. They argue that although relative gender equality in parliament is closely linked with democracy, neither variable seems to be a direct cause of the other. Instead, both women´s representation in parliament and a society´s level of democracy seem to reflect an underlying cultural shift linked with economic development. Although a given society´s traditional cultural heritage still has significant impacts on both the percentage of women in its parliament, and its level of political rights and civil liberties, rising levels of GDP and the shift toward a knowledge economy tends to transform virtually all societies in a predictable direction. It does so largely

producing a cultural shift from survival values toward increasing emphasis on self-expression values.

2.2 Effect of women in parliament on Policy Outcomes

Several studies argue that a higher percentage of women in parliament helps strengthen the position of women. Wangnerud and Sundell (2011) find that a higher percentage of women in elected office improves gender equality in income level, full-time versus part-time employment, and distribution of parental leave. However, it doesn´t have an effect on unemployment, poor health and poverty among women.

Chattopadhyay and Duflo (2004) studied the policy consequences of the introduction of quota representation for women in a unique natural experiment in India, when in 1993, there was an amendment to the constitution, which required that Indian states established greater controls in expenditure of local villages (Gram Panchayats, municipalities) and the reservation of at least three thirds of all chief positions (Gram Panchayats) to women. The authors carry out a survey of all investments in public goods in a sample of villages in two districts, Birbhum in the west of Bengala and in Udaipur and Rajasthan, and compared all investments in villages where these quotas were implemented (treatment group) with those where these quotas were not implemented (control group). Given that villages where this reform was implemented were randomly selected, the authors argue that differences in the investment decisions can be attributed reliability to the reform implemented in the villages. Based on this scenario, the results found suggest that quota representations affect public policy. In particular, affects policy decisions in a way that would seem to reflect better the preference of women. By using proxy that reflect the policy preferences of men and women, the authors find that in the west of Bengala, women complain more often about drinking water and roads and much less about education and irrigation and therefore, there are greater investments in drinking water and roads in the municipalities where there are quotas for women. On the other hand, men complain more about roads and irrigation and less about drinking water. Their results show that the gender of the politician matters for the policy decisions. However, their analysis does not say anything about whether those policy decisions contributed to the development of those villages.

In another similar study, Powley (2006), reports for Rwanda´s women parliamentary achievements for children and families in terms of legislation, budgeting, and government oversight, while recognizing that parliament is a weak institution that as yet has limited reach. Rwanda's parliamentary elections were held in October 2003; women parliamentarians have only been represented in large numbers for two and a half years. Despite their short tenure and the institution's youth, it is difficult to yet thoroughly assess the impact of women parliamentarians on policy outcomes or to systematically evaluate their effectiveness. Nonetheless, women in parliament have emerged as strong advocates of children and families in Rwanda. Women parliamentarians have initiated pro-child legislation, challenged key ministers to deliver, and prioritized the needs of children in the budget. As individuals and as members of the Forum of Women Parliamentarians, these legislators are using their positions to positively impact the lives of children and families in Rwanda and have begun to realize significant policy outcomes.

There is a substantial literature in the social science which suggests that women may have higher standards of ethical behavior and be more concerned with the common good. Consistent with this micro-level evidence, Dollar (2001) finds that at the country level, higher rates of female participation in government are associated with lower levels of corruption. In this sense, increasing the presence of women in government may be valued for its own sake, for reasons of gender equality. However, his results suggest that there may be extremely important spinoffs stemming from increasing female representation: if women are less likely than men to behave opportunistically, then bringing more women into government may have significant benefits for society in general. He finds this association in a large cross-section of countries; the result is robust to a wide range of specifications.

3 Data

We use data from several sources, but most of it was taken from the public access database from Pippa Norris "Democracy Time-series Data Release 3.0" (2009). We also use data from the World Development Indicators (WDI) and the International Labour Organization (ILO). In particular, we use secondary education and fertility from WDI and

women labor participation from ILO (several years and website). The variables related to the polity score, which captures the degree of the regime's authority; whether election results are cast proportionally; Christian and Muslims majoritarian religions; and the size of the legislation were obtained from Pippa Norris' dataset.

3.1 Summary Statistics.

As discussed above, the percentage of women in parliament is well below their proportion in society in all regions. Table 1 present the mean proportion of women in parliament in our data by region. Although there is cross regional variation, the only region where women constitute more than 20% of the parliament is Scandinavian countries, which exhibits near a 28% of women in parliament.

In addition to cross regional variation, there also has been an increase of female political participation over time. Graph 1 shows the evolution of women in parliament across regions. In 6 out of 8 regions, we see that female participation has been steadily growing over time. Only countries in Central Europe show a sharp decrease in women in parliament in 1991[1]. The percentage of women in parliament in Scandinavian countries grew until 1996, followed by a decrease in female participation.

Graph 2 shows the evolution of female participation by religion. Catholic, Muslim and Protestant countries had similar levels of women participation on the early 70s. The level of women in parliament remained nearly constant in Muslim countries until 2000, while Protestant and Catholic countries showed a big increase in female participation.

Finally, Table 2 presents summary statistics of the main variables used in this study.

4 Methodology

Because we are interested in the dynamics of women's representation, we estimate an autoregressive model with fixed effects by country. This allows us to compute steady states

[1] This can probably be explained because all countries in this region in our sample where colonies from the Soviet Union.

levels of women participation in parliaments for each geographical region in our sample, and it will also allow us to recover speeds of convergence.

We present two sets of estimations. First, we estimate the following specification by OLS:

$$WomInPar_{it} = \alpha_0 WomInPar_{it-1} + \alpha_1 WomInPar_{it-2} + \alpha_2 Educ_{it} + \alpha_3 Labor_{it} + \alpha_4 Fertility_{it} + \alpha_5 Democracy_{it} + \alpha_6 Prop_{it} + \alpha_7 Religion_{it} + \alpha_8 Other + \mu_i + d_t + \varepsilon_{it} \quad (1)$$

where Educ corresponds to secondary education, Labor is labor participation from women, Fertility is the fertility rate, Democracy is the level of democracy of the country, Prop identifies whether election results are cast proportionally, Religion identifies Cristian and Muslims, and other corresponds to other controls.

In our second set of estimations we control for the same variables, but we recognize that certain variables that we label as Zit, such as education, labor participation and fertility, are endogenous and we instrument them in equation (3) by their lags.

$$WomInPar_{it} = \beta_z Z_{it} + \beta_x X_{it} + \mu_i + d_t + \varepsilon_{it} \quad (2)$$

$$Z_{it} = \gamma_0 Z_{it-1} + \gamma_1 W_{it} + \mu_i + d_t + \varepsilon_{it} \quad (3)$$

We compute these second set of estimation using System GMM from Blundell and Bond (1998). It is well know that the number of instruments grows very rapidly with the number of endogenous variables and lags, weakening the Hansen's overidentification tests. A reasonable rule of thumb we follow is that the number of instruments must not exceed half of the number of observations (see Roodman, 2009). Therefore, we collapse our data in quinquennials. The number of lags used as instruments and the total number of instruments are reported after each estimation.

5 Empirics

5.1 Results

Table 3 shows the results of estimating equation 1. In Column (1) we control for religion, level of democracy, whether election results are cast proportionally, and the size of the legislation. We also control for two lags of the dependent variable, and region and

quinquennial fixed effects. In addition to the controls used in Column (1), in Column (2) we control for women secondary enrollment, log fertility rates and female labor participation. In Column (3) we add controls for political and economic rights, and in Column (4) we add a dummy variable for countries with legal quotas. In Columns (5) to (7) we include country fixed effects instead of region fixed effects[2].

The results presented in Table 3 show that, in line with the previous literature, the variable that indicates whether election results are cast proportionally is always positive, although it is only significant in the specifications that control for country fixed effects. The size of the legislation is negative and significant in Columns 1-4, but becomes positive and not significant when we control for country fixed effects. Female labor market participation increases women's representation, but this increase is only significant in specifications that don't control for country fixed effects.

As discussed above, the above estimations are likely to be biased because of the endogenous relation of some of the factors considered. For example, it is very difficult to assess whether women participate more in politics because they are more educated than before or women are more educated because they have been benefited by policies implemented by women. To address this endogeneity, we estimate using GMM system proposed by Blundell and Bond (1998). Results are presented in Table 4. All specifications include 2 lags of the dependent variable, and quinquennial fixed effects. As in Table 3, in Column (1) we control for religion, level of democracy, whether election results are cast proportionally, and the size of the legislation, in Column (2) we add controls for women secondary enrollment, log fertility rates and female labor participation, and in Column (3) we add controls for political and economic rights. In Column (4) we add a dummy variable that indicates whether a country has legal quotas. In all our regressions the lagged dependent variable is statistically significant, with a positive coefficient associated to the first lag, and a negative and smaller coefficient associated to the second lag. Now, the variable that indicates whether election results are cast proportionally is not significant and changes sign

[2] Because in our data we don't have variation in religion and legal quotas within countries, we cannot incorporate these variables when controlling for country fixed effects.

between specifications. Female secondary enrollment increases women's representation, but the effect of labor market participation is not significant. Finally, the log fertility rate is positive and significant.

5.2 Assessment and Discussion

Our estimation results can be used to calculate each region's steady state. Tables 5 and 6 present the predicted and actual percentage of women in parliament in each region for the last quinquennial of our data, and the estimated steady states, using models with and without controls for endogeneous regressors.

Table 5 shows that the predicted percentage of women in parliament is very close to the actual percentage of women in parliament for most regions. For Western and Central Europe, North America and Africa, the gap between the prediction and actual percentage is less than one percentage point. Moreover, using a t test, we cannot reject that the predicted percentage of women in parliament is equal to the actual percentage in any region. Table 5 also shows that there are large differences in steady states across regions. For example, there is a difference of more than 20 percentage points in the Scandinavian and African steady states. Finally, Table 5 shows that the predicted percentage of women in parliament in every region is below the steady state. This means that if all the other variables are kept at their current values, then the percentage of women in parliament will increase until it reaches the steady state levels.

Table 6 recalculates the predicted percentage of women in parliament and the estimated steady states in each region, using models that control for endogeneous regressors. The steady states in Table 6 are significantly lower than the results in Table 5, although we still see significant variation between regions.

Because there is a difference between the actual percentage of women in parliament and the country's steady state, Table 7 shows the predicted percentage of women in parliament 5, 10, and 20 years after our last quinquennial, keeping all the variables in their actual values (the values in 2001-2006, the last quinquennial in our sample). Table 7 also

shows the percentage of countries in the region where the actual percentage of women in parliament is equal or larger than the predicted steady state[3]. We see that 1 quinquennial after our last period, the percentage of women in parliament is larger than the country's steady state for 38% of our sample. After 2 quinquennials, this number increases to 51%. 4 quinquennials after, only 5 countries haven´t reach their steady state levels.

Next, we recalculate each region's steady state changing some variables to Scandinavian values. That is, we calculate the steady state in each region assuming that female secondary enrollment, labor participation, fertility rates and political and economic rights are the same as in Scandinavian countries in 2001-2006. Table 8 shows the new steady states and the gap with Scandinavia. The results show that between 77 and 93% of the gap is explained by female secondary enrollment, labor force participation, fertility rates and political and economic rights. If those variables reach the Scandinavian levels, all regions would have steady states of around 37% of women in parliament. In particular, Economic and Political rights explain over 50% of the increase in each region's steady state (see Table A in the Annex). Increasing secondary enrolment to Scandinavian levels, would increase African countries steady states in 19 percentage points, and between 6 and 8 percentage points in Central Europe, North America, South America and Asia. Bringing female labor force participation to Scandinavian levels would increase steady states in less than 2 percentage points.

6 Conclusions

In this paper, we investigate the determinants of women's representation, using a sample of 191 countries from 1972 to 2004, in 8 different geographical regions.

In our preferred estimations, we use a GMM system estimation. Our instruments pass Hansen's overidentification tests, thus giving credence to our results. Moreover, our GMM system estimations challenge some of the results shown by OLS estimations. For example, our fixed effect estimations show that female secondary enrolment is not a significant determinant of women's representation. However, in our GMM system estimation, female

[3] This is not equal to the number of years needed to achieve convergence.

secondary enrolment changes to significant. These results highlight the relevance of properly addressing endogeneity when studying the determinants of the percentage of women in parliament.

We propose a dynamic model for women´s representation and calculate the steady state percentage of women in parliament for each region. We find significant differences in each regions steady state. Although the steady states levels are higher than the current levels, without changing other variables, the percentage of women in parliament in most regions is less than 20%. The only region with a steady state level higher than 40% is Scandinavia. We find that if we change female secondary enrollment, labor participation, fertility rates and political and economic rights to Scandinavian levels, the gap between Scandinavian and other regions' steady states reduces in 77-93%. In particular, increasing secondary enrollment would have a large and significant impact in increasing the percentage of women in parliament. Political and economic rights for women would also have a huge impact.

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Tables and Graphs.

Table 1. Women in the Parliament across regions.

Region	Obs	Mean	Std. Dev.	Min	Max
Scandinavia	32	28.4	9.1	7.1	44.7

Western Europe	87	10.9	7.6	0.4	33.0
Central Europe	95	12.5	8.4	0.6	34.4
North America	21	10.6	8.4	0.8	34.2
South America	144	9.5	8.5	0.0	37.5
Africa	271	7.9	6.7	0.0	39.6
Asia	160	10.1	7.6	0.0	29.8

Table 2. Summary Statistics Main Variables

Variable		Mean	Std. Dev.	Min	Max	Observations		
Women in Parliament	overall	9.88	8.50	0.00	44.72	N	=	885
	between		7.29	0.62	33.56	n	=	174
	within		5.12	-7.42	30.09	T-bar	=	5.09

Muslim	overall	0.23	0.42	0.00	1.00	N	=	885
	between		0.44	0.00	1.00	n	=	174
	within		0.00	0.23	0.23	T-bar	=	5.09
Catholic	overall	0.32	0.47	0.00	1.00	N	=	885
	between		0.46	0.00	1.00	n	=	174
	within		0.00	0.32	0.32	T-bar	=	5.09
Protestant	overall	0.22	0.42	0.00	1.00	N	=	885
	between		0.43	0.00	1.00	n	=	174
	within		0.00	0.22	0.22	T-bar	=	5.09
Polity 2	overall	1.19	7.25	-10.00	10.00	N	=	831
	between		6.20	-9.27	10.00	n	=	153
	within		3.85	-12.01	12.22	T-bar	=	5.43
Size legislation	overall	186.59	172.84	0.00	999.00	N	=	881
	between		160.56	0.00	999.00	n	=	172
	within		51.70	-58.41	530.52	T-bar	=	5.12
Proportional	overall	0.62	0.48	0.00	1.00	N	=	596
	between		0.48	0.00	1.00	n	=	147
	within		0.11	-0.15	1.25	T-bar	=	4.05
Sec. Enrolment	overall	56.48	36.76	1.37	163.56	N	=	728
	between		35.53	3.17	146.48	n	=	162
	within		11.92	13.02	110.26	T-bar	=	4.49
log Fertility	overall	1.24	0.55	0.14	2.13	N	=	877
	between		0.53	0.23	2.05	n	=	170
	within		0.19	0.45	1.95	T-bar	=	5.16
Labor Participation	overall	0.38	0.11	0.05	0.56	N	=	797
	between		0.10	0.11	0.54	n	=	143
	within		0.03	0.27	0.53	T-bar	=	5.57
WECON	overall	1.33	0.57	0.00	3.00	N	=	645
	between		0.51	0.00	2.67	n	=	170
	within		0.25	0.47	2.27	T-bar	=	3.79
WOPOL	overall	1.79	0.54	0.00	3.00	N	=	646
	between		0.48	0.00	3.00	n	=	170
	within		0.30	0.30	3.10	T-bar	=	3.80

Legal quota	overall	0.14	0.35	0.00	1.00	N	=	885
	between		0.33	0.00	1.00	n	=	174
	within		0.00	0.14	0.14	T-bar	=	5.09

Table 3. OLS and Fixed Effect Estimations of the determinants of women's participation in the parliaments.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
L.women in parliament	0.867***	0.824***	0.736***	0.733***	0.404***	0.366***	0.374***
	(0.059)	(0.065)	(0.063)	(0.064)	(0.060)	(0.067)	(0.065)
L2.women in parliament	-0.178***	-0.151**	-0.153**	-0.154**	-0.171***	-0.233***	-0.203***
	(0.059)	(0.065)	(0.063)	(0.063)	(0.062)	(0.070)	(0.068)
legal quota				-0.297			
				(0.758)			
Muslim	0.757	1.516*	1.665*	1.666*			
	(0.769)	(0.916)	(0.920)	(0.921)			
Cath	3.254***	3.430***	2.910***	2.951***			
	(0.875)	(0.957)	(0.938)	(0.945)			
Prot	2.228***	2.011**	1.982**	1.972**			
	(0.737)	(0.877)	(0.837)	(0.838)			
Polity 2	0.124**	0.079	0.067	0.06	-0.063	-0.051	-0.083
	(0.051)	(0.065)	(0.063)	(0.066)	(0.087)	(0.109)	(0.108)
Size Legisl	-0.005***	-0.004**	-0.005***	-0.005***	0.003	0.004	0

	(0.002)	(0.002)	(0.002)	(0.002)	(0.006)	(0.007)	(0.007)
Proportional	0.453	0.858	0.525	0.581	6.331***	7.129***	5.962***
	(0.514)	(0.571)	(0.556)	(0.575)	(1.901)	(2.032)	(2.019)
Sec. Enrolment		0.011	0.005	0.006		0.003	0.011
		(0.016)	(0.016)	(0.016)		(0.032)	(0.031)
log fertility		-0.375	-0.766	-0.677		7.001***	5.951**
		(1.229)	(1.169)	(1.193)		(2.550)	(2.470)
labor force participation		9.400***	7.010**	7.239**		16.718	9.805
		(3.417)	(3.391)	(3.445)		(10.503)	(10.226)
WECON			-0.224	-0.218			-0.619
			(0.577)	(0.578)			(0.865)
WOPOL			4.944***	4.897***			3.980***
			(0.721)	(0.732)			(0.833)
Observations	413	352	340	340	413	352	340
R-squared	0.774	0.782	0.81	0.81	0.561	0.585	0.634
Countries					119	110	109
Region FE	YES	YES	YES	YES	NO	NO	NO
Country FE	NO	NO	NO	NO	YES	YES	YES
Quinquennial FE	YES	YES	YES	YES	YES	YES	YES

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 4. GMM System Estimations of the determinants of women's participation in the parliaments.

VARIABLES	(1)	(2)	(3)	(4)
L.women in parliament	1.019***	0.850***	0.606***	0.639***
	(0.068)	(0.100)	(0.092)	(0.096)
L2.women in parliament	-0.182***	-0.191***	-0.162**	-0.165**
	(0.065)	(0.065)	(0.066)	(0.063)
Muslim	1.167	2.244	1.692	1.178
	(0.910)	(1.910)	(1.953)	(1.540)
Cath	1.477**	1.172	0.103	-0.067
	(0.660)	(1.250)	(1.311)	(1.066)
Prot	2.896***	1.305	0.432	1.006
	(0.850)	(1.301)	(1.279)	(1.202)
polity2	0.173***	0.057	-0.001	0.063
	(0.057)	(0.092)	(0.085)	(0.078)
Size Legisl	-0.003**	0.000	-0.003	-0.004
	(0.001)	(0.003)	(0.003)	(0.002)
Proportional	-0.002	0.923	0.179	-0.158
	(0.542)	(0.798)	(0.798)	(0.767)
Sec. Enrolment		0.133***	0.097***	0.077**
		(0.033)	(0.034)	(0.036)
log fertility		6.965***	5.291**	3.718*
		(2.046)	(2.046)	(2.211)
labor force participation		18.536	10.606	3.168

		(13.673)	(12.267)	(9.093)
WECON			0.892	-0.036
			(1.486)	(1.355)
WOPOL			9.153***	9.425***
			(1.739)	(1.716)
legal quota				-0.097
				(0.733)
Observations	413	352	340	337
Countries	119	110	109	109
Hansen J test	0.139	0.404	0.41	0.601
AR(1)	0.000	0.002	0.008	0.014
AR(2)	0.844	0.310	0.697	0.683
N Instruments	30	69	87	90

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5. Forecast without endogenous controls and steady state calculations.

Region	Var	Obs	Mean	Std. Dev.	Min	Max
Scandinavia	Forecast	4	38.42	3.02	35.23	42.48
	Sample	6	33.13	9.26	17.16	44.72
	Steady State	4	45.41	1.73	42.85	46.58
Western Europe	Forecast	11	18.65	6.46	9.27	29.07
	Sample	16	18.66	7.16	7.98	32.96
	Steady State	11	34.08	4.78	24.60	37.80
Central Europe	Forecast	22	11.95	4.08	4.06	18.70
	Sample	25	12.41	7.39	1.76	31.18
	Steady State	22	28.64	8.91	15.81	45.57
North America	Forecast	3	20.79	7.91	15.00	29.81
	Sample	3	21.49	11.15	13.40	34.20
	Steady State	3	34.99	6.61	28.32	41.54
South America	Forecast	17	14.04	5.65	7.83	32.11
	Sample	28	18.01	8.91	4.16	32.64
	Steady State	17	36.02	2.88	28.06	40.56
Africa	Forecast	31	13.42	6.10	3.09	30.25

	Sample	44	12.69	8.84	1.60	39.56
	Steady State	31	30.95	8.11	14.91	45.07
Asia	Forecast	16	13.78	8.55	3.53	32.41
	Sample	28	11.75	8.40	0.90	29.76
	Steady State	16	26.48	10.95	14.31	47.51

Table 6. Forecast with endogenous controls and steady state calculations.

Region	Var	Obs	Mean	Std. Dev.	Min	Max
Scandinavia	Forecast	4	39.19	2.08	37.21	42.08
	Sample	6	33.13	9.26	17.16	44.72
	Steady State	4	40.81	0.81	39.63	41.47
Western Europe	Forecast	11	18.67	6.71	9.75	30.73
	Sample	16	18.66	7.16	7.98	32.96
	Steady State	11	20.53	7.74	11.09	32.83
Central Europe	Forecast	18	11.71	4.45	0.55	16.81
	Sample	25	12.41	7.39	1.76	31.18
	Steady State	18	14.12	6.12	-3.10	22.25
North America	Forecast	3	20.53	10.05	14.72	32.13
	Sample	3	21.49	11.15	13.40	34.20
	Steady State	3	21.51	10.72	13.01	33.55
South America	Forecast	15	14.90	3.88	10.81	26.15
	Sample	28	18.01	8.91	4.16	32.64

	Steady State	15	18.58	4.92	13.94	34.54
Africa	Forecast	26	12.94	6.06	3.85	28.61
	Sample	44	12.69	8.84	1.60	39.56
	Steady State	26	15.00	5.85	2.28	28.06
Asia	Forecast	13	14.99	8.78	6.36	36.73
	Sample	28	11.75	8.40	0.90	29.76
	Steady State	13	15.98	9.51	3.92	41.68

Table 7. Forecast 5, 10 and 20 years after.

Region	Predicted % of women in parliament	Obs	Mean	Std. Dev.	Min	Max	% of countries where Women in Parliament > Steady State
Scandinavia	2001-2006	4	39.19	2.08	37.21	42.08	0.25
	5 years after	4	40.06	1.48	38.90	42.03	0.25
	10 years after	4	40.60	0.95	39.37	41.51	0.25
	20 years after	4	40.83	0.82	39.64	41.51	1.00
Western Europe	2001-2006	11	18.67	6.71	9.75	30.73	0.36
	5 years after	11	20.42	8.18	9.76	34.00	0.64
	10 years after	11	20.77	8.19	10.46	33.34	0.73
	20 years after	11	20.60	7.82	11.08	33.04	0.91
Central Europe	2001-2006	18	11.71	4.45	0.55	16.81	0.28
	5 years after	18	13.63	5.94	-2.55	21.17	0.33
	10 years after	18	14.21	6.28	-3.35	22.45	0.61
	20 years after	18	14.20	6.19	-3.21	22.42	1.00

North America	2001-2006	3	20.53	10.05	14.72	32.13	0.33
	5 years after	3	22.01	11.97	13.84	35.76	0.67
	10 years after	3	21.99	11.63	13.26	35.19	0.67
	20 years after	3	21.57	10.82	12.98	33.72	1.00
South America	2001-2006	15	14.90	3.88	10.81	26.15	0.13
	5 years after	15	17.44	4.41	13.65	28.88	0.20
	10 years after	15	18.46	4.80	14.05	33.37	0.33
	20 years after	15	18.68	4.99	13.97	34.85	1.00
Africa	2001-2006	26	12.94	6.06	3.85	28.61	0.15
	5 years after	26	14.58	6.73	2.95	31.46	0.35
	10 years after	26	15.07	6.37	2.23	30.14	0.50
	20 years after	26	15.07	5.90	2.20	28.21	0.96
Asia	2001-2006	13	14.99	8.78	6.36	36.73	0.31
	5 years after	13	15.87	10.52	4.01	43.27	0.46
	10 years after	13	16.07	10.28	3.58	43.51	0.46
	20 years after	13	16.01	9.60	3.83	41.96	0.77

Table 8. Steady state calculations with Scandinavian levels and Gaps.

Region	Var	Mean	Var	Mean	reduction of the gap in %
Scandinavia	Steady State	40.81	Steady State		
	Gap with Scandinavia	0	Gap with Scandinavia		
Western Europe	Steady State	20.53	Steady State with Scandinavian values	37.02	
	Gap with Scandinavia	20.28	Gap with Scandinavia	3.79	0.81
Central Europe	Steady State	14.12	Steady State with	38.59	

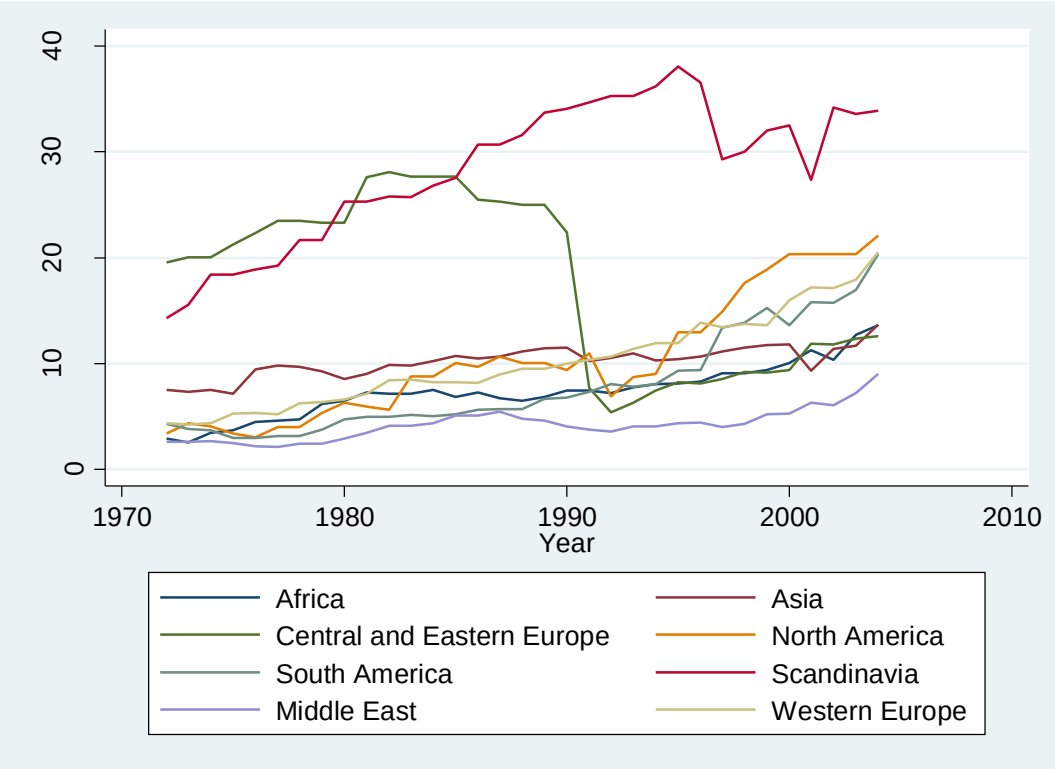
	Gap with Scandinavia	26.68	Scandinavian values Gap with Scandinavia	2.22	0.92
North America	Steady State	21.51	Steady State with Scandinavian values	36.44	
	Gap with Scandinavia	19.30	Gap with Scandinavia	4.36	0.77
South America	Steady State	18.58	Steady State with Scandinavian values	37.95	
	Gap with Scandinavia	22.22	Gap with Scandinavia	2.86	0.87
Africa	Steady State	15.00	Steady State with Scandinavian values	38.90	
	Gap with Scandinavia	25.80	Gap with Scandinavia	1.91	0.93
Asia	Steady State	15.98	Steady State with Scandinavian values	38.00	
	Gap with Scandinavia	24.83	Gap with Scandinavia	2.81	0.89

Table A. Steady state calculations with Scandinavian levels.

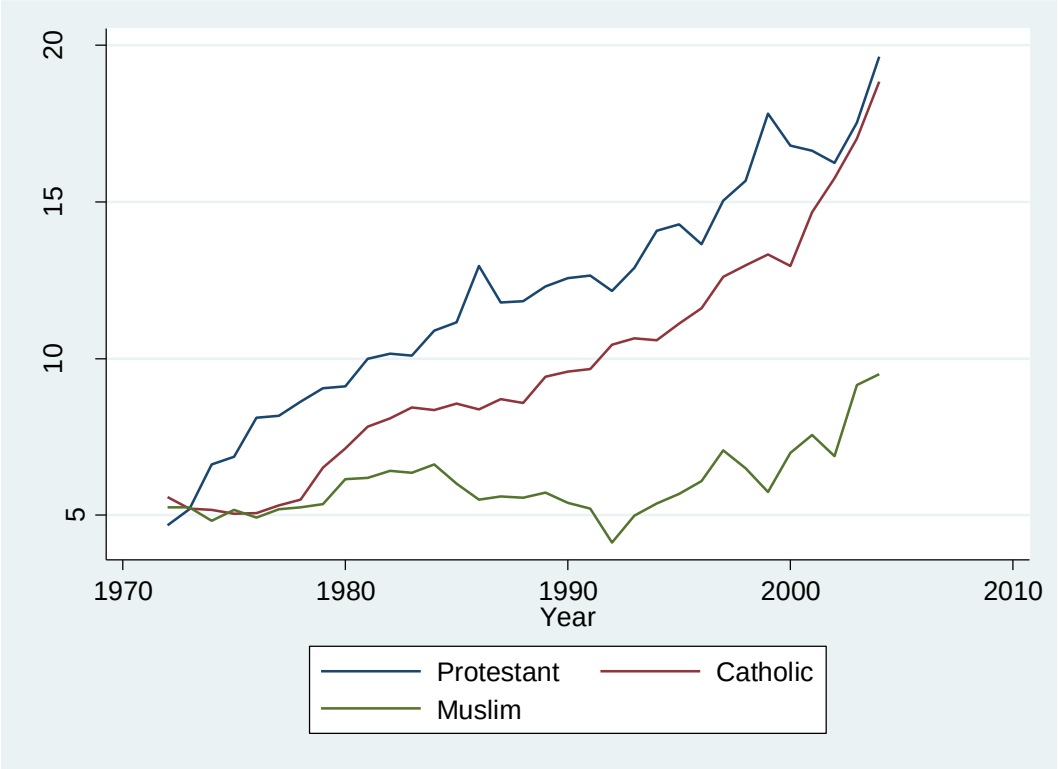
Region	Var	Actual Values in last quinquennial	All variables to Scandinavian levels	WECON and WOPOL to Scandinavian levels	Female LFP to Scandinavian levels	Secondary enrolment to Scandinavian levels
Western Europe	Steady State	20.53	37.02	30.59885	22.41052	24.43

	Increase in SS		16.49	10.07	1.88	3.90
	% of increase			0.61	0.11	0.24
Central Europe	Steady State	14.12	38.59	29.38	15.20	21.51
	Increase in SS		24.46	15.26	1.07	7.38
	% of increase			0.62	0.04	0.30
North America	Steady State	21.51	36.44	28.84	22.80	28.15
	Increase in SS		14.93	7.33	1.30	6.64
	% of increase			0.49	0.09	0.44
South America	Steady State	18.58	37.95	29.25	19.88	26.54
	Increase in SS		19.36	10.66	1.29	7.95
	% of increase			0.55	0.07	0.41
Africa	Steady State	15.00	38.90	30.23	16.52	34.21
	Increase in SS		23.89	15.23	1.52	19.20
	% of increase			0.64	0.06	0.80
Asia	Steady State	15.98	38.00	28.22	17.31	24.61
	Increase in SS		22.02	12.24	1.33	8.63
	% of increase			0.56	0.06	0.39

Graph 1. Women Representation across Regions.



Graph 2. Women Representation across Religions.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