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Making Quotas Work: The Effect of Gender Quota Laws On the Election of Women

Gender quota laws are intended to increase the number of women elected to legislatures, but initial evidence suggests that many laws have had little effect. I present a cross-national, statistical test that analyzes how three key dimensions of candidate quota laws affect women's representation. My results show that quotas that require more women to be on party ballots lead to the election of more women, independent of placement mandates and enforcement mechanisms, but rules governing where female candidates are listed on the ballot and sanctions for noncompliance amplify that effect. Candidate quotas can increase women's representation, but the quotas' effectiveness depends on their design.

Women's representation in national legislatures around the world has nearly doubled in the past 30 years. Yet the world average for women legislators in 2007 was still only 18%, far less than parity, and the percentage of legislative seats held by women varies widely across countries (IPU 2007). Explanations for women's underrepresentation stress cultural, socioeconomic, and, perhaps most important, institutional differences in political systems. Specifically, electoral rules, such as those defining the type of electoral system and district magnitude, have been found to affect women's representation because these rules determine how votes get translated into seats. Despite the benefits that certain institutional arrangements provide for increasing the number of women in legislatures, women continue to be underrepresented in most countries. In an effort to change this trend, many countries have adopted gender quotas—"fast track" mechanisms for increasing women's representation. While quotas are intended to increase women's representation, the extent to which they do so varies significantly across countries.

For this study, I examined why some types of gender quotas have been more effective than others at increasing women's representation. I looked specifically at national candidate quota laws, which have been

adopted by 26 countries around the world. These quotas are constitutional provisions or national laws that require all political parties participating in legislative elections to include women on party ballots. I examined three specific characteristics of quota laws—the size of the quota, whether or not it has placement mandates, and the presence of strong enforcement mechanisms—to determine the effect that these rules have on the percentage of women in national legislatures. My analysis included the 26 countries that had adopted quotas through mid-year 2007 and each election in which quotas had been used in the countries. The analysis not only elucidates the specific effect that different kinds of quota laws have on women's representation but also shows how quotas operate across very diverse electoral and socioeconomic contexts.

My study makes two main contributions to the literature on gender quotas and women's representation. First, this article tackles the far less-studied question of how quotas are implemented rather than why they get adopted in the first place. The majority of the existing quota research focuses on why countries have adopted quotas (for a broad overview, see Caul 2001, Dahlerup 2006, and Krook 2005), but as more elections with quotas have been held, the literature has shifted focus to the implementation of quotas and their effectiveness (Baldez 2004, 2007; Gray 2003; Htun and Jones 2002; Jones 1996, 1998, 2004; Jones and Navia 1999; Schmidt and Saunders 2004). Second, most studies of quota implementation have been (1) country-specific analyses drawing out the nuanced nature of gender quotas and their effects, or (2) broad, cross-national statistical studies that lump diverse quota rules into one dichotomous measure of the presence or absence of a quota to test the quota's effect. While both sets of studies have made important inroads for our understanding of quota effects, there is a disconnect between them. These studies imply that there must be a trade-off between detail and generalizability. I will try to bridge that gap with a test of how the nuances of electoral quotas affect the election of women that allows generalizations across political contexts. Thus, this study will help to improve our understanding of women's political representation.

The Diversity of Gender Quotas

In 1991, Argentina passed a national gender quota law requiring that women constitute 30% of the candidates put forth by all political parties running for election to the Chamber of Deputies. The idea of gender quotas was not new (international organizations had been

pushing quotas since the 1975 U.N. First World Conference on Women), nor was the use of gender quotas new: some political parties, most commonly in the Nordic countries, had used quotas since the 1970s (Caul 2001). But the Argentine law was the first by a democratic state that applied to *all* political parties and, consequently, offered the greatest opportunity to increase women's representation in the entire legislature, not merely in one political party's legislative delegation.[1] Evidence from Argentina suggests that quotas have been successful. In the 1993 election, the first after the quota law went into effect, women won 14.4% of the seats in the Chamber, compared to only 5% in the 1991 election. By 2001, Argentina's Chamber of Deputies was 31% female and ranked ninth in the world in terms of women's representation in national parliaments (IPU 2002).

Twenty-five very diverse countries have followed Argentina's example and adopted gender quotas, either through national legislation or constitutional provisions (or both), since 1991 (see Table 1). Some of these quotas are so recent that they have applied to only one election. Liberia and Mauritania used quotas for the first time in 2005 and 2006, respectively, and Mexico's 2002 quota law applied to Senate elections for the first time in 2006. In other countries, quotas have been through multiple election cycles. Belgium adopted quotas in 1994 and has held three elections since then. Argentina's quota for the Chamber of Deputies has applied to seven elections. In two cases, Italy and Venezuela, quota laws were adopted but then rescinded a short time later.

The primary goal of gender quotas is to increase the number of women elected to legislatures. Nevertheless, the percentage of the legislature that is female in countries with quotas varies widely (see Table 1). Argentina, for example, saw a near-immediate increase in the percentage of women in office after it implemented its national quota law in 2001. In contrast, Brazil has had almost no change in women's legislative representation since its quota was implemented in 1997. The percentage of women in the Armenian legislature has averaged only 5.6% since the quota was implemented in 1999, down from 6.3% in the pre-quota 1995 election. Why do some quota laws get more women elected than others?

Candidate gender quota laws vary widely across countries and do so along three dimensions (see Table 2). The first is the quota size, i.e., the percentage of a political party's candidates that must be female. All else being equal, requiring a larger number of women to be included on the party ballot should translate into more legislative seats won by women. Existing quotas vary in size, from as low as 5% in Armenia to as high as 50% in France. The second dimension is the placement

TABLE 1
Gender Quotas and Women's Representation across Countries

Country	Chamber	Year Adopted	Post-Quota Elections: Years	Post-Quota Elections: Mean % Women
Argentina	Lower	1991	1993, 1995, 1997, 1999, 2001, 2003, 2005	27.6
	Upper	2001	2001, 2003, 2005	36.6
Armenia	Unicameral	1999	1999, 2003, 2007	5.6
Belgium	Lower	1994	1999, 2003, 2007	31.6
	Upper	1994	1999, 2003, 2007	31.9
Bolivia	Lower	1997	1997, 2002, 2005	15.6
	Upper	1997	1997, 2002, 2005	7.4
Bosnia & Herzegovina[a]	Lower	1998	1998, 2000, 2002, 2006	19.5
Brazil	Lower	1997	1998, 2002, 2006	7.7
Costa Rica	Unicameral	1996	1998, 2002, 2006	31.0
Dominican Republic	Lower	1997	1998, 2002, 2006	17.7
Ecuador	Unicameral	1997	1998, 2002, 2006	19.5
France	Lower	2000	2002, 2007	15.4
Guyana	Unicameral	2000	2001, 2006	24.5
Honduras	Unicameral	2000	2001, 2005	14.5
Indonesia	Unicameral	2003	2004	11.1
Italy[b]	Lower	1993	1994	15.1
Liberia		2005	2005	12.5
Macedonia	Unicameral	2002	2002, 2006	23.3
Mauritania		2006	2006	17.9
Mexico	Lower	2002	2003, 2006	22.6
	Upper	2002	2006	17.2
Nepal	Lower	1990	1991, 1994, 1999	4.2
Panama	Unicameral	1997	1999, 2004	13.3
Paraguay	Lower	1996	1998, 2003	6.3
	Upper	1996	1998, 2003	13.4
Peru	Unicameral	1997	2000, 2001, 2006	22.5
Serbia & Montenegro[c]	Unicameral	2002	2003, 2007	14.2
South Korea	Unicameral	2004	2004	13
Uzbekistan	Lower	2003	2004	17.5
Venezuela[d]	Lower	1997	1998	12.1
	Upper	1997	1998	8.8

[a]Bosnia and Herzegovina's quota was adopted as part of the Organization for Security and Co-operation in Europe's "Mission in Bosnia." The quota became part of Bosnia and Herzegovina's election law in 2002.

[b]Italy's quota was adopted in 1993 and applied to the 1994 election but was declared unconstitutional in 1995.

[c]The quota in Serbia and Montenegro was for the Serbian legislature only and carried over into Serbian electoral law after Serbia became an independent state in 2006.

[d]Venezuela's quota was passed in 1997 and applied to the 1998 election but was not included in the new constitution of 1999.

Sources: Global Database of Quotas for Women (IDEA 2007), country electoral codes, and Inter-Parliamentary Union.

TABLE 2
Characteristics of Gender Quota Laws

Country	Legislative Chamber to which Quota Applies	Target Percentage	Placement Mandate	Enforcement Mechanism
Argentina[a]	Lower & Upper	30	Yes	Strong
Armenia[b]	Unicameral	5/15	No/Yes	None/Strong
Belgium[c]	Lower & Upper	25/33	No/Yes	Weak
Bolivia[d]	Lower & Upper	33/25	Yes	Strong
Bosnia & Herzegovina[e]	Lower	30/33	Yes	None
Brazil[f]	Lower	25/30	No	Weak
Costa Rica[g]	Unicameral	40	No/Yes	None/Strong
Dominican Republic[h]	Lower	25/33	No/Yes	Strong
Ecuador[i]	Unicameral	20/30/35	Yes	Strong
France	Lower	50	No	Weak
Guyana	Unicameral	33	No	None
Honduras	Unicameral	30	No	None
Indonesia	Unicameral	30	No	None
Italy	Lower	30	No	None
Liberia	Lower	30	No	None
Macedonia	Unicameral	30	No	Strong
Mauritania	Lower	20	No	Strong
Mexico[j]	Lower & Upper	30	Yes/No	Strong
Nepal	Lower	5	No	None
Panama	Unicameral	30	No	Weak
Paraguay	Lower & Upper	20	Yes	Strong
Peru[k]	Unicameral	25/30	No	Strong
Serbia & Montenegro	Unicameral	30	Yes	Strong
South Korea	Unicameral	50	No	None
Uzbekistan	Lower	30	No	None
Venezuela	Lower & Upper	30	No	Weak

[a]The quota only applied to the Argentine Senate beginning in 2001, when the Senate was directly elected for the first time.
[b]Armenia changed its quota target to 15% for the 2007 election and added a placement mandate and strong enforcement mechanisms.
[c]Belgium's 1994 law set the initial quota target at 25%, with the quota to increase in the following election to 33%. In 2002, Belgium instituted a placement mandate stipulating that in the first election following the 2002 law, the top 3 candidates could not be of the same sex, and in the second post-2002 election, the top 2 candidates could not be of the same sex.
[d]The quota for the Bolivian lower house is 30% (1 of every 3 candidates). It is 25% (1 of every 4 candidates) for the upper house.
[e]The initial quota designed by the Organization for Security and Co-operation in Europe set the target to 30%. The Bosnian electoral code adopted in 2002 increased the target to 33%.
[f]Brazil's quota increased to 30% for the 2002 election.
[g]Costa Rica implemented a placement mandate and enforcement mechanisms in 1999, such that they applied to the 2002 election.
[h]Amendments to the Dominican Republic's electoral code in 2000 increased the target to 33% and added a placement mandate.
[i]Ecuador's quota law passed in 1997 with a target of 20%. In 2000, a revision to the quota increased the target to 30% and specified that it should increase by 5% with every succeeding election. In the most recent election (2006), the quota was 35%.
[j]Mexico's quota has a placement mandate for seats allocated in PR elections but not for the SMD seats.
[k]Peru increased the quota target to 30% prior to the 2001 election.
Sources: Global Database of Quotas for Women (IDEA 2007) and country electoral codes.

mandate. A placement mandate stipulates that female candidates must be placed in winnable constituencies or winnable positions on party ballots. Argentina is one of eleven countries with a placement mandate as part of its quota. The third dimension is the strength of the quota law's enforcement mechanisms. Some countries specify no means to enforce the quota; others dictate hefty consequences for parties that submit lists of candidates that do not meet the quota.

The existing literature suggests that differences in quota size, placement mandates, and enforcement mechanisms are important explanations for why the proportion of women elected to legislatures varies so widely among countries with quotas (Dahlerup and Freidenvall 2005; Htun and Jones 2002; Jones 2004; Matland 2006). Yet the absence of any cross-national, statistical studies means that we do not know (and cannot predict) exactly what effect the dimensions will have, independently and in combination with one another, on the election of women, how large those effects will be, or whether or not the effects will persist across diverse political settings. Does the size of the quota, in and of itself, lead to more women in office, or are quotas only effective when the laws specify placement mandates and enforcement mechanisms? Are both placement and enforcement necessary for the quota to increase women's representation, or is one sufficient? How closely does the quota's size match the resultant number of women actually elected to office? In the following subsections, I discuss the three dimensions of quota laws in detail, and I outline hypotheses about the effect that the dimensions may have on the election of women.

Quota Size

The size of the quota is the minimum percentage of a political party's candidates that is required to be female. Theoretically, as quota size increases, the percentage of women elected to the legislature should increase as well (Jones and Navia 1999; Schmidt and Saunders 2004). The relationship between quota size and the proportion of seats to which women are elected may not be a one-to-one relationship, however, because of the nature of electoral quotas. Electoral quotas simply designate a certain percentage of a party's ballot as being for female candidates rather than guaranteeing a specific percentage of legislative seats for women. In other words, a quota of 30% does not guarantee that 30% of the legislature will be female. Elections occurring under quotas that require a higher percentage of the ballot to be female should place more women in office than elections with lower percentage requirements, but the percentage of seats ultimately won by women

will not necessarily match the quota size. The percentage of seats that women win depends on other factors, such as the proportionality of electoral rules, the electoral formula employed, the size of the electoral district, and voter preferences.

Among countries with gender quotas, the percentage of party candidates required to be women varies widely (see Table 2). Armenia and Nepal require 5% women, whereas South Korea and France seek equal representation at 50%. The most common quota size is 30%, which 14 of the countries have employed. In some countries, the quota size has changed across elections. In Belgium, for example, the quota was implemented gradually. The law passed in 1994 set the size of the quota at 25% for the first post-quota election, but the quota increased to 33% in the second post-quota election. Ecuador also implemented a quota with a gradual increase in the size of the quota. The 1997 law initially set the quota at 20%, and a 2000 reform to the electoral code changed it to 30%, with a 5% increase in each subsequent election until it reaches 50%. In total, eight countries have increased their quota size since gender quotas were first implemented.

Placement Mandates

A placement mandate is a requirement that political parties put women in positions as candidates where they have a real chance of getting elected. In a two-seat district, parties would have to ensure that a woman held one of the top two positions on the party ballot. In a five-seat district, the law might require a woman to fill every second, third, fourth, or fifth ballot position. Quotas with placement mandates prevent political parties from putting all female candidates at the bottom of the party ballot, where they have little to no chance of getting elected. A number of studies have underscored the importance of placement mandates in quota laws (Baldez 2004; Gray 2003; Htun and Jones 2002; Jones 1996, 2004), finding that quotas only increase the number of women elected when the quotas mandate that women be placed in electable positions.

Placement mandates are limited, by definition, to electoral systems where parties put forth ballots that rank order candidates, specifically, closed-list or "flexible list" proportional representation (PR) systems and multimember-district plurality systems where parties present ballots with rank-ordered lists of candidates. Open-list PR systems cannot have placement mandates, because parties do not predetermine rankings and candidates are elected entirely according to voters' preferences.

Of the 26 countries with gender quotas, 11 have used placement mandates in at least one election, and 4 countries added those placement mandates after the quota had been adopted (see Table 2). The specific language of the placement mandates varies across countries and often depends on the quota's size. In Paraguay, where the quota is 20%, the law specifies that at least one in every five candidates on the party list must be a woman. Bosnia and Herzegovina's placement mandate states that a woman must be listed as one of the first two candidates on the party list, two women must be among the first five candidates, three among the first eight, and so forth.

Enforcement Mechanisms

Enforcement mechanisms are stipulations in the electoral law or constitutional provisions that prescribe consequences for political parties that do not abide by the quota. Enforcement mechanisms make it easier for electoral authorities to punish parties that overlook or choose not to employ the quota and, consequently, should serve as deterrents to quota evasion. Including enforcement mechanisms in the quota law should result in more women getting elected to office, because more parties will comply with the quota (Baldez 2004; Htun and Jones 2002; Jones 1996).

As Table 2 shows, enforcement mechanisms vary significantly (Dahlerup and Freidenvall 2005).[2] Some quota laws contain no mention of enforcement. Others specify weak enforcement mechanisms that somehow penalize parties for lack of compliance but do not prevent the parties from running. France, for example, applies a financial penalty that reduces the amount of public funding in future elections to political parties that do not comply with the quota. Many parties in the 2002 election opted to take the penalty and support male incumbents rather than to abide by the quota (Norris 2003). Belgium and Brazil require parties that do not meet the required percentage of women to leave open the positions that should be filled by women—in Brazil, such parties may also choose to eliminate men from candidate lists—effectively reducing the number of candidates that the party can run. Neither country requires the parties to seek out more women candidates to comply with the quota. Panama's enforcement mechanisms also are weak, allowing parties unable to meet the quota to nominate any candidate wishing to run. This permissiveness essentially makes the quota a mere recommendation: if a party makes a good-faith effort but claims to find few qualified women, then the party can resort to additional male candidates.

These relatively weak enforcement mechanisms contrast with stronger ones employed in Argentina, Bolivia, Costa Rica, Mexico, Paraguay, and Peru. In these countries, enforcement consists of independent electoral authorities reviewing lists and rejecting those of political parties that do not comply with the quota. Parties must meet the quota or they cannot run any candidates in the districts that violate the quota. These differences in the strength of enforcement mechanisms—no enforcement, weak enforcement, and strong enforcement—should lead to varying levels of women's representation.[3]

Expected Effects of Electoral Quotas

The most effective type of electoral gender quota should be one that requires a large number of women on ballots, establishes placement mandates, and stipulates enforcement mechanisms. But some aspects of quotas could have independent, albeit smaller, effects or have notable effects in combination with only one other dimension. Of the three dimensions of electoral gender quotas, I expected quota size to be the only dimension with an independent effect on the election of women. Placement mandates and enforcement mechanisms are designed to reinforce or strengthen a specific quota target. Quota size, however, could independently affect the percentage of women elected if parties abided by the quota regardless of the additional pressure from enforcement and placement, or if parties put more women on ballots than the minimum required by the quota.

Scholars often argue that quota size will not matter unless the quota law incorporates placement mandates and enforcement mechanisms (Htun and Jones 2002; Matland 2006). Yet some empirical evidence reveals that quota size, in and of itself, can increase women's representation. Political parties in Western Europe have led the way in adopting voluntary party quotas that are not required or enforced by national laws, illustrating that some parties willingly support women on party ballots. Indeed, parties could benefit electorally by catering to a "women's vote" or by stressing the party's "inclusiveness" and "representativeness" and might therefore choose to abide by a quota without placement mandates and sanctions. Jones (2004) reports that quotas increase the election of women without placement mandates or enforcement in Costa Rican municipal elections.

Nevertheless, the key to substantially increasing the election of women is likely to be the combination of placement mandates, enforcement mechanisms, and more women on the ballot. Htun and Jones (2002) have argued that placement mandates and compliance

with the quota are necessary conditions for quota effectiveness.[4] Women's representation will not increase unless political parties are required to place women in electable positions on the ballot and unless the law requires parties to abide by the quota. In other words, setting the quota size to 30% but omitting placement mandates and enforcement mechanisms will lead to fewer legislative seats won by women than would requiring 30% of the ballot to be female *and* that women be placed in electable positions *and* specifying enforcement mechanisms. Placement mandates and sanctions for noncompliance should act not so much on their own, but to reinforce the percentage of women required by the quota. Of course, a women-friendly political context, the socioeconomic environment, and cultural practices will also influence how many seats are won by women, but the quota itself will have a much smaller effect on women's representation if all three legal requirements are not implemented to their fullest.

In sum, theory and existing literature suggest that quotas requiring large numbers of women on party ballots, establishing placement mandates, and stipulating enforcement mechanisms should lead to more women being elected to national legislatures than quotas with weaker requirements. No previous study has examined the nuanced nature of quotas across the wide variety of countries that have employed gender quotas at the national level. I test the effect of these quotas on women's representation in the context of other political and socioeconomic factors that also influence the election of women.

Data

I collected data on the 26 countries that have or have had candidate gender quota laws or constitutional provisions for candidate gender quotas in the national legislature[5] through mid-year 2007 (see Table 1).[6] The dataset includes all elections in which a quota has been employed in each country and includes both legislative chambers for the 6 countries with two popularly elected legislative chambers that use quotas. The dataset also disaggregates the data by electoral tier in mixed systems (6 countries). If the quota applies only to the proportional representation tier, as it does in all but a single country, then all variables are measured for the PR tier only. If the quota applies to both the PR and single-member district (SMD) tiers, as in Mexico, then the PR and SMD elections are separate observations in the dataset.[7] In total, the dataset yields 77 observations.

I tested the effectiveness of quota laws by creating three independent variables that measure the characteristics of the quotas and

determining if these variables have a statistically significant and positive effect on the election of women. I measured the dependent variable as the percentage of legislative seats that female candidates won in the election.[8] The three dimensions of a quota law are the main independent variables. *Quota Size* is simply the percentage of party candidates that the quota stipulates must be female, and it ranges from 5% to 50%. *Placement Mandate* is a dichotomous variable for whether or not the quota requires parties to place women in winnable positions on the party list. *Enforcement Mechanism* is an ordinal scale of the strength of a quota's enforcement mechanism: 0 indicates no enforcement mechanism, 1 indicates weak enforcement mechanisms, and 2 denotes strong enforcement (see Table 2).[9]

In addition to gender quotas, the socioeconomic and political contexts of countries can influence the election of women and could explain some of the variation in the numbers of women elected to legislatures in countries with quotas.[10] The socioeconomic context in which elections take place affects women's representation because those environments where more women are enrolled in institutions of higher education and participate in the paid labor force have more women in the candidate pool from which parties select candidates. The more women there are in the pool, the higher the likelihood that women will make it onto party ballots and get elected (Norris 1985; Oakes and Almquist 1993; Randall 1987; Reynolds 1999; Rule 1987; Studlar and McAllister 1991). As a broad measure of the socioeconomic context, I included a variable for level of development, which I measured with logged gross domestic product (GDP) per capita in constant 2000 U.S. dollars, lagged one year (Heath, Schwindt-Bayer, and Taylor-Robinson 2005; Matland 1998; Rule 1981; World Bank 2007).

A second, possibly confounding, influence on women's representation is the type of electoral rules that translate votes into seats. Proportional-representation systems increase women's representation more than plurality rules do because PR systems allocate seats in proportion to the number of votes that a party wins (Darcy, Welch, and Clark 1994; Matland and Studlar 1996; Norris 1985; Rule 1987). Women can therefore win seats with less than a majority or plurality of the vote. They do not have to be the top vote-getter, or be from a party that is the top vote-getter, to win legislative seats. PR electoral rules may also have different effects on the election of women depending on whether the rules are open- or closed-list. Closed-list rules may yield more women in office than open-list rules, because closed-lists do not depend on preference voting for individual

candidates, which could incorporate voter biases against women (Htun and Jones 2002; Jones and Navia 1999). I measured the type of electoral rules with a categorical variable that distinguishes plurality (SMD and MMD), open-list PR, and closed-list PR rules.[11] Plurality is the excluded category in the models described here.

I also tested the effect of district magnitude in quota systems. District magnitudes that are greater than 1 mean that the election is not a zero-sum game that both women and men can win. The larger the district magnitude is, the more women will be elected to office. Previous studies' findings of average district magnitude's effect on women's representation have been mixed, with some studies reporting that larger district magnitudes increase the percentage of seats won by women (Engstrom 1987; Rule 1987) and other studies reporting no significant influence (Matland 1993; Studlar and Welch 1991; Welch and Studlar 1990). Still others suggest that there is a nonlinear effect, whereby increases in district magnitude from 2 to 3 or 4 to 5 increase the percentage of seats won by women to a larger degree than do increases in district magnitude at higher levels, such as the increase in magnitude from 149 to 150 seats (Schwindt-Bayer 2005; Studlar and Welch 1991). I included a measure of average district magnitude in the legislative chamber (or electoral tier) and logged it to account for the "diminishing returns" effect.[12]

Third, I accounted for the number of years since the quota went into effect because adherence to a gender quota may occur over several elections. The effect could be delayed for many reasons. First, some countries have had very limited time between passage of their quota law and the first election held under the law making it difficult for parties to alter their nomination processes to meet the quota. Argentina's quota was adopted by the legislature in 1991, but it was not until just before the 1993 election that a decree was passed with a placement mandate and enforcement mechanisms. Some parties had already held their nominating conventions, and these parties were allowed to submit ballots that did not comply with the quota law (Jones 1996). Second, some parties may only apply the quota halfheartedly until they see punishments meted out to parties that ignore the law. Third, it may take voters time to respond to the sudden increase in female candidates, and they may only respond after female candidates have gained campaign experience in several elections and become viable candidates in voters' eyes. Including a variable for the number of years since quota adoption accounts for the fact that the quota may only have an effect after an election or two has occurred under the quota law.[13]

I used ordinary least squares regression to test the effect of quotas on women's representation in national legislatures. The dataset is

primarily cross-sectional with only a few observations over time in most countries.[14] Because some countries' legislative chambers are observed multiple times in the dataset, however, I clustered the standard errors around a country's legislative chamber to account for the lack of independent observations within a country chamber. I also estimated robust standard errors, which correct for the problem, albeit limited, of heteroskedasticity in the models.

Data Analysis

Table 3 presents the results of two models. Model 1 is a test of the independent effects of the three gender quota variables with controls for electoral institutions and the socioeconomic environment. The only characteristic of gender quotas that increases women's representation on its own is *Quota Size*, which adds 0.44 to the percentage of the legislature that is female for every 1% increase in the size, all else being equal.[15] Indeed, Costa Rica, with a 40% quota, has approximately 4% more women in the legislature (31%) than Argentina does (27%) with a 30% quota, averaging across all of the post-quota elections. *Placement Mandate* and *Enforcement Mechanisms* have no effects independent of the other dimensions of quota laws.[16] Mandating where parties must list women on the ballot or having sanctions for noncompliance is not sufficient, in and of itself, for increasing the proportion of women in office. Intuitively, this finding makes sense. Enforcement will matter little if there is nothing to enforce, and placement mandates mean little without quota specifications regarding how many women the parties must nominate. *Placement Mandate* and *Enforcement Mechanisms* may only matter when interacted with one another and *Quota Size*.

Greater quota size leads to more women in the legislature independent of placement mandates and enforcement mechanisms, but the effect of *Quota Size* is indeed mediated by the other dimensions. Model 2 in Table 3 shows the results from an analysis with interactions between each of the three characteristics of gender quotas. The three-way interaction is statistically significant, indicating that the three dimensions do act in combination with one another to explain women's representation. The substantive effect of this interaction is not intuitively clear, however, from the regression coefficients. I computed marginal effects and conditional standard errors to illustrate the effect of one characteristic of quotas given observed values of the other two (Brambor, Clark, and Golder 2006).[17] Table 4 shows the results of these calculations.

TABLE 3
The Effect of Gender Quota Laws on the
Percentage of the Legislature that Is Female
(n = 77)

Variables	Model 1 Basic Model	Model 2 Three-Way Interaction
Quota Size	.44* (.07)	.35* (.17)
Placement Mandate	2.88 (2.99)	4.59 (5.21)
Enforcement Mechanisms	–1.19 (1.38)	3.23 (2.75)
District Magnitude (logged)	1.15 (1.28)	1.00 (1.18)
Electoral Rules:		
Closed-list PR	.54 (5.38)	–.03 (4.82)
Open-list PR	–3.72 (5.41)	–2.92 (4.94)
GDP per Capita (Logged)	2.52* (1.17)	3.28* (1.31)
Number of Years since Quota Adoption	.76** (.26)	.64* (.28)
Size × Enforcement	—	–.25 (.15)
Size × Placement	—	–.13 (.18)
Placement × Enforcement	—	–13.99** (4.89)
Size × Enforcement × Placement	—	.60* (.23)
Constant	–17.22* (6.84)	–18.68** (5.96)
R^2	.50	.60

Note: Ordinary least squares coefficients with robust standard errors clustered around legislative chamber in parentheses.
*$p < .05$; **$p < .01$.

TABLE 4
Marginal Effects from the Three-Way Interaction
(standard errors in parentheses)

Placement Mandate?	Enforcement	Marginal Effect of Quota Size
No	None	.35* (.17)
No	Weak	.10 (.25)
No	Strong	–.16 (.37)
Yes	None	.22 (.26)
Yes	Weak	.57** (.18)
Yes	Strong	.92** (.18)

*$p < .05$; **$p < .01$.

The proportion of women in the legislature increases by 0.35 percentage points with a 1% increase in quota size when no placement or enforcement rules are in place; that is, weak quotas increase women's representation by only a modest amount. When placement mandates and strong enforcement mechanisms are included in the quota law, the effect of the quota is much larger. Strong quotas lead to an increase of 0.92 percentage points with a 1% increase in size. Quotas with placement and enforcement will therefore have a proportion of female officeholders quite comparable to the proportion of candidates on party ballots that are required to be female. Specifically, a 30% quota with placement and enforcement yields, on average, 27% of the legislative seats being held by women. Without placement and enforcement, significantly fewer women get elected—the percentage of women in office is only one-third of what the quota size requires for party ballots. A 30% quota without placement and enforcement yields only 10% of its legislature being female, on average. A comparison of Argentina and Indonesia illustrates this point nicely. Argentina's 30% quota with placement mandates and enforcement mechanisms has led to an average proportion of seats held by women of 27.6% in the post-quota period. Only 11% of Indonesia's legislature is composed of women, despite a 30% quota that lacks placement mandates and sanctions for noncompliance.

Quotas with placement and enforcement lead to an almost one-to-one increase in the percentage of women elected to office. This relationship does not hold when only one of the two dimensions exists. When either placement mandates or enforcement mechanisms are absent or weak, the effect of *Quota Size* on women's representation is largely nonsignificant. The one exception to this trend is the combination of a placement mandate and weak enforcement, as in Belgium, where larger quotas do increase the percentage of seats won by women but by less than when placement mandates are accompanied by strong enforcement ($b = 0.57$ compared to $b = 0.92$). With placement and weak enforcement, the coefficient drops to 0.45 but is still statistically significant.

The electoral and socioeconomic contexts have little effect on the election of women in quota systems. Only level of development (*GDP per Capita*) and *Number of Years since Quota Adoption* have significant and positive effects on the percentage of women in the legislature. More-developed countries have more women in the candidate pool, which leads to more women in office. Similarly, the percentage of women in office increases when quotas have been in place longer. In contrast, electoral rules have no effect on the election of women in political systems with gender quotas. No difference exists in the percentage of seats to which women are elected between plurality and PR systems (*Closed-list PR* or *Open-list PR*), and larger district magnitudes do not facilitate the election of women. These results do not mean that electoral rules *never* affect women's representation, only that in systems with electoral gender quotas, the design of the quota itself overwhelms the effect of electoral rules.[18]

In sum, the findings of the interactive model show that stronger quotas (those with placement mandates and weak-to-strong enforcement) lead to more women in office than do weaker quotas (those without placement mandates and enforcement). The effect is quite large—almost three times as many women get elected under strong quotas than under weak quotas. Countries such as Argentina and Costa Rica have been highly successful with quotas because these nations require near-parity in the representation of men and women and specify placement mandates and enforcement mechanisms. In contrast, countries such as Guyana and Honduras have only moderate levels of women's representation with 30% quotas that lack placement mandates and enforcement mechanisms. Although they have no independent effect on the election of women, placement mandates and enforcement mechanisms do, in fact, play a role in increasing women's representation by reinforcing the effect of quota size. The design of quota laws can have significant effects on the election of women.

Conclusions

For this study, I examined the countries around the world that employ legal candidate gender quotas to determine why some countries with quotas get more women elected than do other countries. Drawing on the theories and findings of existing literature, I focused on three key characteristics of quotas: the percentage of candidates required to be female, placement mandates, and enforcement mechanisms. I found that quota size affects women's representation regardless of whether or not the quota includes placement mandates and enforcement mechanisms, but that effect is weakened or strengthened by the absence or presence of the other quota rules. When no placement mandates or enforcement exists, the percentage of seats held by women is only one-third of what the quota mandates for party ballots. When the quota stipulates placement mandates and strong enforcement mechanisms, the percentage of seats won by women is just shy of the quota's target percentage, on average. These findings are not surprising; case studies and theoretical research have long suggested that the most effective quotas are those that require more female candidates on party ballots and provide placement mandates and enforcement mechanisms. But this study does provide the first precise estimates of the effects of different types of quotas across a wide range of political contexts and the magnitude of difference we can expect between the types of quotas, on average.

The findings also reveal that some parties comply with quota laws even without placement mandates and explicit sanctions for noncompliance. Larger quotas lead to more women in office even without the additional conditions. Some parties are abiding by the quota and putting women on the ballot in electable positions, even when sanctions are weak or nonexistent. This compliance may result from parties adopting voluntary quotas that are stricter than the national quota law (Meier 2004), extensive lobbying by women's groups in the country (Jones 1996), a desire to increase political legitimacy, or a strategic calculation on the part of parties to court the women's vote. Indeed, some case study evidence supports this hypothesis of voluntary compliance. In South Korea, for example, the quota requires half of each party list to be composed of female candidates but makes no explicit statement about placement or enforcement of the quota. Nevertheless, the political parties frequently use the "zipper" principle (that is, they alternate men and women on the list) on their ballots. Belgium is a country where women's groups played a particularly strong role in getting parties to comply with a relatively weak quota (Matland 2006).

In Belgium's 1999 election, the quota had no placement mandate or enforcement mechanisms, but pressure from women's groups led many parties to nominate women to electable positions and resulted in an 11 percentage point increase in parliamentary seats won by women. These patterns support a common assertion: even more important than sanctions is good-faith compliance by parties (Htun and Jones 2002; Matland 2006).

By providing a cross-national, statistical analysis of how different dimensions of electoral quotas affect the election of women, this study sets the stage for future cross-national research on the election of women. Existing studies on quotas and women's representation at the region or worldwide level use simple dichotomous variables to measure whether or not a country has a gender quota. Not surprisingly, most of these studies have found small or even no effect for gender quotas (Caul 1999; Htun and Jones 2002; Kunovich and Paxton 2005; Reynolds 1999; Tripp and Kang 2008), perhaps because they have underspecified gender quotas. Rather than simply controlling for whether or not a quota exists, authors need to account for differences among gender quotas. As I have shown here, how countries combine quota size, placement mandates, and enforcement mechanisms affects quota effectiveness. An index that combines these dimensions into a more-nuanced measure of quota law strength could provide a more accurate estimate of the effectiveness of quotas cross-nationally. Whatever the solution, cross-national studies need to utilize better measures of quota strength to assess how quotas affect women's representation.

Over the past 30 years, increases in women's legislative representation have occurred, but slowly. Fast-track institutions, such as gender quotas, have been introduced around the world to increase women's representation, but their success has not been guaranteed; some quotas have been much more effective than others. This study reinforces the premise that institutional design matters. Although gender quotas are an important mechanism for increasing women's representation, and consequently, the representativeness of democracy, quotas will be most effective when implemented with placement mandates and enforcement mechanisms. It is not simply having a quota but how the institution is designed that increases women's representation.

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NOTES

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1. Nepal constitutionalized a 5% candidate gender quota in 1990, but because Nepal is a nondemocratic monarchy, its action was far less notable than Argentina's change in electoral law.

2. I coded as "strong enforcement" those laws that reject the party ballot if it does not comply with the gender quota. This is the strictest sanction possible, because it requires parties to forfeit the election if they do not meet the quota. I coded as "weak enforcement" those laws that include some type of sanction for noncompliance but do not eliminate the party from electoral competition. Examples of weak enforcement include small financial penalties for parties that do not comply (as in France) or small monetary contributions for those who do (e.g., South Korea), weak statements of "publicly punishing" parties that do not comply (e.g., Venezuela), removing male candidates from noncompliant ballots without adding more women (e.g., Belgium and Brazil), and simply requiring a good-faith effort (e.g., Panama). "No enforcement" indicates quota laws without any explicit statement of sanctions for noncompliance.

3. Some scholars argue that it is not sufficient for quotas to include enforcement mechanisms in the quota law (Dahlerup and Freidenvall 2005; Gray 2003). Instead, parties need to know that the consequences will be carried out in practice. Systems in which punishments have been meted out may, in fact, be more successful at increasing women's representation than those where enforcement has been delineated but not implemented.

There are, however, several reasons why this assertion is difficult to assess empirically. One, having enforcement mechanisms spelled out in the electoral law or constitutional provision is still likely to be a sufficient threat for many parties to abide by the quota. The countries that took the time to debate enforcement mechanisms and pass them into law are likely to be those that would actually carry through with enforcement. Thus, the representation of women in countries with clear consequences for parties that violate the law should still be higher than women's representation in countries with no enforcement mechanisms as part of the quota. Two, in countries where all parties have met the quota in all elections, it is impossible to know whether enforcement mechanisms would actually be enforced or not. Thus, it is impossible to classify these cases according to whether or not enforcement of the law has actually occurred.

4. Htun and Jones also argue that closed-list PR systems and high district magnitudes are necessary for successful quota implementation. Unfortunately, the small number of cases in this dataset makes testing the conditional effect of the three quota dimensions on electoral rules impossible. I acknowledge the theoretical importance of

the electoral system for quota implementation, but I have chosen to leave statistical testing of this relationship to future research and to focus instead on the specific effects of the quota rules.

5. The term *gender quota* is used to describe an array of rules aimed at getting more women in office. For this article, I focused specifically on one type of quota: candidate quota laws for national legislatures. I did not examine political party quotas, which are adopted voluntarily by individual parties and apply only to a few parties in a country, nor did I study reserved seat quotas, which are fundamentally different from electoral gender quotas because they guarantee women seats in the legislature rather than merely guaranteeing women entry to party ballots.

6. I created a new quota dataset for this project because I found numerous inconsistencies in existing quota datasets. I built this dataset by aggregating data from a wide range of sources. I began with the Global Database of Quotas for Women (IDEA 2007) and then matched that data with the constitutions and electoral laws of the countries. When there were discrepancies, I coded cases according to the constitutions and electoral rules. For some countries, I was unable to access the constitution or electoral law, and I used secondary-source case studies or direct communications with country experts to code the quota laws.

7. There is a trade-off between estimating the models at the level of the electoral tier and estimating them at the level of the entire electoral system. On one hand, cross-tier contamination in election results can occur in mixed systems, where the distribution of seats in one tier is conditional, to some extent, on the percentage of the vote that parties receive in the other tier. This interference makes estimating models by treating the tiers separately less than optimal. On the other hand, gender quotas usually apply only to one tier (the PR tier), such that combining both tiers into one system means estimating the effect of quotas on party ballots and seats to which they do not apply. To ensure that the results were not biased by the electoral-tier modeling strategy, I also estimated models with observations measured across the entire electoral system. The only difference I uncovered was that the substantive effect of the quota is smaller. This is not surprising since the dependent variable is the percentage of the entire legislative chamber that is female rather than simply the percentage of the tier's seats that is female.

8. For mixed systems, the dependent variable is the percentage of PR or SMD seats that were won by women. The countries with mixed PR-SMD systems are Armenia, Bolivia (lower house), Italy, Mexico (lower house), South Korea, and Venezuela (lower house).

9. See note 2 for details on the coding of the enforcement variable.

10. I ran several alternative models with control variables for additional factors that sometimes increase women's representation, such as the percentage of women in the workforce, the ideology of the governing party (n = 42 because of limited data availability), region, and level of democracy in the country. None of these factors were statistically significant, nor did they alter the results presented in the data analysis section. Because of the small number of observations in the dataset, I excluded these variables from the main models to keep the analysis as parsimonious as possible.

11. The plurality category includes three countries with multimember districts. Argentina, Bolivia, and Mexico use these rules in their senates to elect three senators per district: two seats go to the party that wins the most votes and the remaining seat is

awarded to the runner-up. I also included both flexible-list and true open-list PR systems under the heading "open-list." Both systems allow preference voting, which is the key distinction I wanted to make with closed-list PR.

12. In mixed systems, average district magnitude is specific to the PR or SMD tier. Also, logging district magnitude adjusts for the highly-skewed nature of the variable that results from some countries using nationwide districts that elect large numbers of legislators (for example, Serbia and Montenegro, with 250 legislative seats elected in one nationwide PR district).

13. I also tested a control variable for the number of elections since quota adoption in place of the number of years since adoption. This variable is strongly significant, as is the number of years, and it does not substantially change the effects of the other variables. I present the analysis with *Number of Years since Quota Adoption* here because it offers a more-nuanced picture of the delay in quota effect.

14. As a robustness check, I ran a partial fixed-effects model with dummy variables for the country chambers that had a number of elections more than one standard deviation above the mean—in other words, all country chambers with more than three elections (Argentina lower house, Belgium lower and upper houses, and Bosnia and Herzegovina). This specification did not change the statistical significance of the quota variables, and the substantive effects are quite similar. These results increase my confidence that the models presented in the article are estimated appropriately, even though the countries have an unequal number of elections.

15. To be sure that the results were not biased by a spurious correlation between the percentage of the legislature that was female at the time that quotas were adopted and the type of quota adopted, I ran a set of analyses controlling for the percentage of the legislature that is female just prior to the first election with quotas (not shown). The variable itself is borderline statistically significant ($p = 0.11$), but the effect is small ($b = 0.29$). Most important, the variable does not substantially alter the statistical or substantive effects of the marginal effects or control variables. The marginal effect of quota size with placement and enforcement remains large ($b = 0.91$), and without placement and enforcement, the marginal effect is still small ($b = 0.31$).

16. A simpler measure of enforcement would be a dichotomous measure: Enforcement or No Enforcement. The ordinal scale is a better measure, however, because it distinguishes the strength of enforcement rather than assuming that all enforcement mechanisms are equal. That said, I ran statistical models with enforcement measured as a dummy variable to be sure the findings in Table 3 were not an artificial result of the enforcement measure. The results are quite similar, with slightly more-significant coefficients in the interactive model.

17. Following Brambor, Clark, and Golder (2006), I calculated marginal effects for quota size given different values of placement (0, 1) and enforcement (0, 1, 2). The three-way interaction regression model is $y = \alpha + x_1b_1 + x_2b_2 + x_3b_3 + x_1x_2b_4 + x_1x_3b_5 + x_2x_3b_6 + x_1x_2x_3b_7 + \ldots + x_nb_n$, where x_1 = quota size, x_2 = placement, and x_3 = enforcement. The marginal effect of quota size (x_1) is calculated with the formula $b_1 + x_2b_4 + x_3b_5 + x_2x_3b_7$, substituting the estimated regression coefficients and different values of x_2(placement) and x_3(enforcement). I calculated the conditional standard errors for each marginal effect with the following formula: $\sqrt{(\text{var}(b_1) + x_2^2\text{var}(b_4) + x_3^2\text{var}(b_5) + x_2^2x_3^2\text{var}(b_7) + 2x_2\text{cov}(b_1b_4) + 2x_3\text{cov}(b_1b_5) + 2x_2x_3\text{cov}(b_1b_7) + 2x_2x_3\text{cov}(b_4b_5) + 2x_2x_3^2\text{cov}(b_4b_7) + 2x_2^2x_3\text{cov}(b_5b_7)}$.

18. Models excluding the three electoral rule variables yield higher levels of statistical significance for the quota dimensions and comparable marginal effects in the interaction model. Quotas with placement and enforcement yield an increase in the percentage of women legislators of 0.88; those without placement and enforcement yield an increase of 0.30.

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