

Global Gender Quota Adoption, Implementation, and Reform

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Quotas for women are among the widest reaching electoral reforms of the last thirty years. Whereas gender quotas existed in only a handful of countries in the 1970s, today more than 130 countries worldwide have modified constitutions, electoral laws, or party rules to mandate that a certain proportion of women be included as candidates or legislators. Because quotas transform the composition of parliaments, their potential impact is wide-ranging.¹ Quotas have been shown to influence party strategy, legislative behavior, public opinion, political engagement, and the aspirations, education, and political efficacy of women and girls.²

Paralleling their influence in politics, scholarship on gender quotas has exploded.³ Research exploring the adoption and influence of gender quotas now appears regularly in the journals of all social scientific disciplines. Still, apart from some gender scholars, social scientists have not yet fully addressed the global phenomenon of gender quotas. This may be because unlike other similarly important concepts in comparative politics such as electoral systems and human rights protections, we do not currently conceptualize or measure gender quota adoption over time. Further, existing studies that code gender quotas for several countries rely heavily on a tripartite distinction among quotas—reserved seats, candidate quotas, and party quotas⁴—but gender quotas are more complicated than this simple distinction suggests.

We argue for a new approach to the conceptualization and measurement of gender quotas that operate nationally to regulate legislatures. Our approach is global, longitudinal, and precise in addressing the increasingly diverse nature of quotas. Looking globally, we systematically review the institutional features of gender quotas across 190 states. Thinking longitudinally, we conceptualize quota adoption and reform as a contested and unfolding process. Measuring precisely, we make distinctions among quotas by type, timing, strength, and features. Finally, we theorize and operationalize an effective quota—a quota with institutional features that should influence numeric legislative representation—that could be used by researchers interested in modelling quota impact, or by comparative researchers wishing to control for this consequential

phenomenon. These advances are realized via our new dataset, Quota Adoption and Reform Over Time (QAROT), that measures quota adoption, implementation, and reform worldwide from 1947 to 2015.

Our approach provides comparative politics scholars with the tools to study gender quotas both as an outcome of interest and as a driver of change. Researchers will be able to test a wide range of theories related to diffusion of policies, elite negotiation, policy innovation, policy implementation, policy feedback, and the influence of gender quotas on outcomes for women, men, and society. No longer constrained by traditional quota typologies, researchers using these data can, for example, test what specific features of quotas are best for a particular outcome or examine whether effective quotas are more difficult than weak quotas to implement. Further, a nuanced understanding of quota adoption, implementation, and reform as an ongoing process will aid policymakers, practitioners, IGOs, and INGOs as they design and reform quotas.

Even for comparative politics researchers who are not interested in gender quotas specifically, our single measure of an effective quota will serve as a useful variable in quantitative analyses. Quotas have become a pervasive institutional feature of modern polities that—like presidential vs. parliamentary systems, or different degrees of proportionality in electoral systems—fundamentally changes political competition. Researchers can no longer legitimately study parties, legislatures, legislative outcomes, or even democracy without controlling for quotas. QAROT's measure of the simple presence of an effective quota can thus be used by comparative politics researchers to control for this powerful institutional feature when explaining a range of other outcomes.

The Basics: What are Gender Quotas?

At their most basic, gender quotas require that women (or men) make up a minimum share of some group, list, or institution.⁵ Quotas go beyond goals, targets, or objectives to specify a threshold—a number or percentage of women—that must be selected or nominated. Our focus is national electoral gender quotas, which regulate (s)election to national legislatures through constitutional provisions or national laws that require some share of general election candidates or legislators to be women.⁶ Limiting study to national quotas excludes party quotas, which are adopted voluntarily by political parties, regulated through internal party rules, and enforced by party leadership.⁷

National electoral quotas come in two main types: reserved seats and candidate quotas. Reserved seats set aside a certain seat share for women, regardless of the number of women candidates or nominees. The second type, candidate quotas, requires all political parties in a country to field a certain percentage of women candidates, but it does not guarantee that any share of women will ultimately be elected. To ensure that political parties follow the law, some quotas impose sanctions on non-compliant parties through fines or by precluding them from participating in elections until they comply. In countries with party list electoral systems, quotas may also include placement mandates

that set the order of men and women candidates on electoral lists. Placement mandates are designed to prevent political parties from skirting the spirit of quota laws by consigning women to unwinnable positions at the bottom of candidate lists.

Introducing Our Approach: Global, Longitudinal, and Precise

A Global Approach Although comparative and global research on quotas is increasing, the vast majority of scholarship on quota adoption and effects looks at single countries or a small set of countries. Indeed, of the more than 200 studies on gender quotas published in peer-reviewed journals between 1995 and 2015, 74 percent studied one or a handful of countries, whereas just 7 percent took a cross-regional or global approach.⁸

Country case studies have illuminated quota debates, drivers of quota adoption, challenges to quota implementation, and quota impacts. Yet, a global approach presents an important counterpoint to case scholarship. Global research affords researchers the opportunity to test insights from case study research and to explore effects that operate regionally or globally.⁹ Case study research also focuses overwhelmingly on countries that have adopted quotas, revealing little about the many countries that continue to resist quota adoption.¹⁰ Moreover, because most countries are experiencing gains in women's political representation over time both with and without quotas, scholars must be able to compare change in countries with and without quotas in order to really understand quotas' effects.¹¹

Of course, we are not the first to conceptualize and measure gender quotas globally. Some work describes and categorizes gender quotas from different parts of the world.¹² A smaller but growing number of studies have developed cross-national measures of gender quotas for analysis of quota adoption or impact.¹³ This work draws extensively from the Global Database of Quotas for Women (hereafter Quota Database).¹⁴ Initiated in 2003 and updated regularly, the Quota Database is an indispensable public resource for information about current gender quotas around the world. The Quota Database has informed the ways that researchers categorize quotas, the types of research questions about quotas that have been asked and answered, and the specific institutional features of quotas that have received the most attention. We hope to build upon and extend the Quota Database to advance research on quotas and to enable the investigation of a new set of research questions through an explicitly longitudinal approach.

A Longitudinal Approach One principal advancement of our approach is that we take time seriously. We conceptualize and measure gender quota adoption and implementation as a multi-stage process that unfolds temporally within each country. To illustrate some of the complexities involved, consider the cases of Mexico and Tunisia, which, as of 2015, both have candidate gender quotas with 50 percent thresholds, placement mandates, and sanctions for noncompliance. Mexico's national candidate quota was first adopted in 2002, when a previous recommendation for 30 percent

women candidates became a requirement, and was implemented the following year in national elections.¹⁵ In 2008, the threshold was increased to 40 percent, but it did not apply if candidates were selected through a primary election.¹⁶ This loophole was closed a few years later by the federal election court. In 2014, the quota threshold was upped again to 50 percent and a new placement mandate required alternation of women and men on electoral lists. Tunisia arrived at the same place as Mexico but in just one move. In 2011, Tunisia adopted and implemented its first quota: a 50 percent candidate quota requiring men and women to alternate on lists. Comparing Mexico and Tunisia shows how a cross-sectional analysis of quotas may mask important differences in the varied trajectories that countries have taken to where they are today, differences that could shape the impacts quotas have on politics and societies.

In order to better understand gender quotas and their development across time, we distinguish among adoption, implementation, and reform. Quota adoption refers to the first time a quota appears as enforceable in the law; this could be the ratification of a constitution, a decree by a monarch, or the passing of secondary law (mainly the electoral law).¹⁷ Quota adoption dates are especially important for research on the causes and diffusion of gender quota policies. In these studies, the question is when quota legislation is adopted, regardless of whether or when the measure is applied in an election, or has any impact whatsoever.¹⁸

Quota implementation refers to when a quota policy was first on the books during an election. Implementation may occur in the same year as adoption (e.g., Algeria in 2012), several years later (e.g., Belgium's 1994 quota was not implemented until 1999), or never (e.g., Colombia's 1999 quota was overturned in the same year). We consider quota implementation to have occurred regardless of whether political parties complied with the policy, and thus regardless of whether the policy generated its intended effects on women's political representation.¹⁹ The year of quota implementation is the crucial piece of information for analyses on the consequences of quota policies worldwide.²⁰ Researchers might ask, for example, whether quota implementation significantly changes the gender composition of parliaments.

Quota reform refers to instances in which the laws or regulations of a quota change. Similar to other policies that require maintenance to function well, quotas often need to be revised and updated.²¹ One common quota reform is to progressively increase quota thresholds, such as in the Mexican case mentioned above. Quotas are also reformed through changes in rules. Countries with candidate quotas can adopt new sanctions and/or placement mandates. For instance, Costa Rica's 1996 quota legislation passed without placement mandates—a conscious decision on the part of lawmakers.²² However, unsatisfactory electoral results in 1998 (a 40 percent quota returned only 19 percent women) and intense lobbying by quota advocates helped fuel a 1999 court ruling that instituted placement mandates.²³ Sanctions and placement mandates may also themselves be reformed. For example, Croatia's first gender quota included monetary sanctions, but a 2015 reform allowed party lists to be nullified if parties did not comply with the quota. Not all reforms involve strengthening rules. For instance,

Albania's 2012 reform removed provisions that allowed the electoral commission to throw out non-compliant party lists.

Systematic attention to reforms shows that enacting quotas is usually not a one-time event. Indeed, looking just at the last decade, our data show that 53 percent of major changes to quotas were reforms of existing polices. Yet, cross-national research has largely ignored quota reform. Indeed, to our knowledge, there are no quantitative studies predicting reforms to initial quota laws. Research has also not considered whether the iterative process of reform shapes the impacts of quotas. We suggest that when comparative researchers concentrate their attention on initial adoption, they provide an incomplete picture of the diffusion of quotas and of their effects.

A Precise Approach A third improvement in our approach is greater precision in the measurement of quotas. For instance, as mentioned above, we distinguish between quota adoption, implementation, and reform. We also advance research through our precise measurement of three additional features of quotas—the strength of enforcement mechanisms for candidate quotas, the methods for filling reserved seats, and quota thresholds—and introduce a new single measure of effective quotas.

Strength of Enforcement Mechanisms for Candidate Quotas

Candidate quota rules matter. Sanctions for non-compliance and placement mandates have been shown to increase the impact of gender quotas on women's legislative representation,²⁴ but not all rules are created equal.²⁵ The strongest sanctions require electoral commissions to reject candidate lists that fail to comply with quota regulations.²⁶ Monetary sanctions, such as fines or restricted access to public campaign funds, have proved easier to circumvent.²⁷ For example, upon its introduction, France's parity quota included only a mild financial penalty for noncompliance, which most parties paid instead of running 50 percent women.²⁸ Although differences in the strength of sanctions are often acknowledged in the case study literature, rarely are they measured in cross-national studies of quota adoption or impact.²⁹ Consistent with case study literature, we see the strongest sanctions as those that invalidate lists, whereas weaker sanctions are monetary in nature.³⁰

Similarly, some placement mandates are stronger than others. Some countries, like Tunisia, have the strongest placement mandates that require alternation between men and women (sometimes called a zipper or zebra system). Other countries, such as Iraq, have less stringent requirements, mandating that a woman occupy one out of every three positions on candidate lists. Yet these differences between Tunisia and Iraq are largely a function of their thresholds: Tunisia sets its target at 50 percent, whereas Iraq's target is only 25 percent.

We suggest that the strength of a placement mandate should be measured relative to a country's stated threshold. If the required ordering should reasonably produce a share of women that is on par with the legislative threshold or better, we consider the

placement mandate to be strong. Iraq's placement mandate of one out of every three positions could reasonably result in 33 percent women, which is higher than the mandated minimum of 25 percent. Under our rule, Iraq has a strong placement mandate. Contrast Iraq with Poland, which requires that at least one woman be included among each list's first three candidates. This mandate only applies to the top of the list, therefore falling short of ensuring compliance with Poland's 35 percent quota. Overall, distinguishing between strong and weak placement mandates will allow researchers to better measure the impact of quota rules.

Methods for Filling Reserved Seats

Better precision in measurement could also be applied to reserved seats, which have received much less scholarly attention in comparative research.³¹ Single country studies suggest that how reserved seats are filled might influence their impact. For example, in Lesotho, Clayton finds that citizens react negatively to single-member districts reserved for only women candidates.³² Not all reserved seat systems limit voters' choice to only women candidates, however.

We identify three different ways that reserved seat systems operate. In countries with special women's electoral districts or lists, women are separated out and compete only against other women (e.g., Kenya). Under "best-loser" systems, women compete against men through regular channels, but unelected women who receive the most votes fill the quota seats (e.g., Afghanistan). Reserved seats can also be filled indirectly: National leaders appoint a specified number of women (e.g., Saudi Arabia) or, after elections, political parties or legislators select women (e.g., Bangladesh).³³ Coding these differences will allow researchers to understand patterns in reserved seat mechanisms over time and whether these differences matter for various outcomes.

In some cases, countries have laid out plans for reserved seats in their constitutions, but never passed electoral laws specifying how the quota would be met (e.g., Haiti). When countries do not specify a mechanism for filling reserved seats, we consider it to be a weaker quota than when countries specify one of three mechanisms above.

Stated Thresholds and De Facto Thresholds

If we care about quota effects, we also have to care about the quota threshold, or, the level at which representation is set. Samoa, for example, has a 10 percent quota, whereas countries such as Bolivia and Libya have set the bar at 50 percent women. Research demonstrates that quota thresholds may be one of the most important features of a quota for predicting its effects on women's political representation.³⁴ It makes sense that quotas legislating higher percentages of women as candidates or legislators should, in general, produce more women legislators.

Yet, thresholds are not always simple, and current methods do not measure them sufficiently. Some countries use different thresholds for different parts of their electoral

system. For instance, South Korea uses a 50 percent threshold in its proportional representation (PR) tier but a 30 percent quota for single member districts.³⁵ Or, consider Algeria, where the candidate threshold varies between 20 percent and 50 percent, depending on the number of seats in each electoral district. Particularly important for understanding quota effects is understanding that quotas may not apply to all candidates or seats. For example, Libya's 50 percent threshold only applies to 40 percent of its seats, which, in practice, produces a 20 percent quota.

With this in mind, we argue that we need to acknowledge difference between a country's stated quota threshold and the breadth of a quota's actual reach. We refer to the latter as the *de facto* threshold. For instance, Venezuela's 1997 30 percent quota, because it applied to 32 percent of seats, has a *de facto* threshold of 10 percent. Our data show that, as of 2015, 15 percent of countries with candidate quotas have a *de facto* threshold that differs from their stated threshold.

An Effective Quota What makes a quota effective? Existing research has generally used two different approaches. One set of research puts the focus on legislative outcomes (i.e., looking at the share of women in the legislature or the percent change in representation before and after the quota was adopted).³⁶ A quota associated with a 10 percent increase in women's representation is considered more effective than one associated with a 5 percent gain. An alternative approach considers whether a quota was effective at meeting its target.³⁷ A quota with a 20 percent threshold that produces 19 percent women in the legislature would be considered more effective than a quota with a 30 percent threshold that produces only 19 percent women.

We suggest a different approach to measure an effective quota, one based on whether the quota is written with features that should produce results. Based on the discussion above, as well as existing research, we know that certain features enhance a quota's effectiveness in increasing women's representation. Other quotas are written without provisions to help achieve stated goals. We define an effective quota as one that contains either a) a candidate quota with strong placement mandates and/or strong sanctions or b) a strong reserved seat quota that specifies a mechanism for filling reserved seats. Further, the threshold is important to a quota's effectiveness; *de facto* thresholds of 10 percent or lower are largely "window dressing," often producing negligible shifts in women's numbers. Previous research also identifies 10 percent as an important milestone in women's political representation.³⁸ By our definition, therefore, an effective quota must also reach a minimum 10 percent *de facto* threshold.

The idea of an effective quota acknowledges that some researchers are not interested in quotas, *per se*. Rather, given the influence of quotas on a wide range of outcomes, they recognize that including a control for the presence of gender quotas is increasingly important. Our single measure of an effective quota gives such researchers the ability to include a single variable in their models. Our measure differs markedly from the current standard control measure, which is simply a dummy variable measuring the presence of a quota of any type, regardless of its influence on the legislature.

The QAROT Dataset: Variables and Methodology

The QAROT dataset begins in 1947, when the first national legislative gender quotas (China and Pakistan) were introduced, and extends through 2015. We include a dummy variable to indicate each country-year for which a country has had a gender quota as part of its constitution or secondary law (ADOPTED QUOTA) and each country-year after it has implemented this quota in an election (IMPLEMENTED QUOTA). Adoption marks the first instance of the quota in a constitution or secondary law. Implementation is recorded as the first election during which the quota was legally in effect, whether or not the law was followed. We also include dummy variables that indicate the first year of quota adoption for each country (FIRST ADOPT FLAG) and the first year of implementation (FIRST IMPLEMENT FLAG). With quota type (TYPE), we distinguish between national quotas that reserve seats in the legislature for women and those that require all parties to field women candidates or nominees. Not all quotas fit neatly into one of two categories. In recent years, countries have begun to adopt hybrid quotas using a mix of rules. For instance, Rwanda reserves about one third of the seats in the Chamber of Deputies for women, but political parties contesting the other two thirds of seats must also include 30 percent women candidates on their party list. As of 2015, we code two countries as having these hybrid measures (Rwanda and Mauritania).³⁹

QUOTA REFORM NUMBER is a variable recording reforms to the original quota. It runs from zero to seven. By the end of 2015, close to half of all quota adopting countries (44 percent) had reformed their existing quotas at least once. Reforms include changing the quota threshold, adding or strengthening placement mandates, and/or adding or strengthening sanctions for noncompliance. IMPLEMENTED REFORM NUMBER acknowledges that, like the original adoption of quotas, dates of implementation of quota reforms may differ from the adoption date.⁴⁰

For all quotas, we record the legislative threshold stipulated by the quota (PERCENT STATED THRESHOLD), the percent of legislative seats to which the quota applies (PERCENT OF SEATS), and the product of these two figures which creates the de facto threshold (DE FACTO THRESHOLD).

QAROT also codes candidate quota rules. We indicate whether the quota includes sanctions for non-compliance (SANCTIONS) and whether it includes placement mandates (PLACEMENT). For both types of rules, we distinguish between strong and weak policies. We operationalize placement mandates as strong if they specify an order that meets or exceeds the threshold set by the quota (PLACEMENT STRENGTH). For example, if a quota with a 30 percent threshold requires that women are in every third position on a party list (33 percent), the placement mandate would be coded strong. Alternatively, placement mandates are weak if they are vague (e.g., “place in winnable positions”) or require a lower share of women than the legislated threshold (e.g., every ten candidates for a 15 percent quota).⁴¹ We code sanctions as strong if parties are stopped from participating in the election if they do not comply with the quota rules; if parties are fined or lose state funding, we code sanctions as weak (SANCTIONS STRENGTH).

For reserved seats, we code three general mechanisms through which seats are filled: special women's electoral districts or lists (SEPARATE TIER); "best-loser" systems (BEST LOSER); and indirect elections (INDIRECT). Countries that do not legislate a mechanism for filling seats are coded as UNSPECIFIED.

We code a quota as effective (EFFECTIVE QUOTA) if it reaches a 10 percent de facto threshold for either candidate or reserved seat quotas. Candidate quotas are coded as effective if they have strong sanctions for noncompliance and/or strong placement mandates. Reserved seats are coded as effective if they have a legal mechanism specified to fill the reserved seats. We have created this variable to indicate what we believe counts as a minimally functioning quota for use in a wide range of models to control for an important structural feature of political competition. Of course, the disaggregated data we provide allow researchers to create their own operationalized variables to fit specific research needs.

The QAROT dataset harmonizes data from two independent coding efforts. Hughes and Paxton began collecting data on quotas in 2006, and provide data on quota reforms and placement mandates.⁴² In 2014, Clayton and Zetterberg independently collected a second dataset on quota adoption and effects.⁴³ Both datasets had information on the timing of first quota adoption and implementation. In the few cases where the data disagreed, we followed up with additional research. Together, we also coded reserved seat mechanisms and ensured the data were complete through December 2015.

Sources of data on quotas include: the Global Database of Quotas for Women and associated reports; national constitutions and secondary laws; local newspapers; reports from local, regional, and international NGOs and election observers; academic research; consultation with country experts; as well as our own case-specific knowledge, including in-country interviews.⁴⁴ We gratefully acknowledge data collected by Bush, Krook, and Dahlerup et al.⁴⁵ QAROT is distinct from these efforts in its provision of the years of quota adoption, implementation, and reform.

A Descriptive Analysis of Quota Adoption and Implementation

QAROT allows new questions about quotas to be asked and answered. For example, we can consider the global distribution of effective versus ineffective quotas. At the end of 2015, seventy-five countries had adopted national gender quotas, but only fifty-four of these could be considered effective quotas. Figure 1 displays this geographically: countries with effective quotas are shaded in the top panel, and all other quotas are shaded in the bottom panel. Reserved seats and mixed quotas appear in black, and candidate quotas appear in grey.

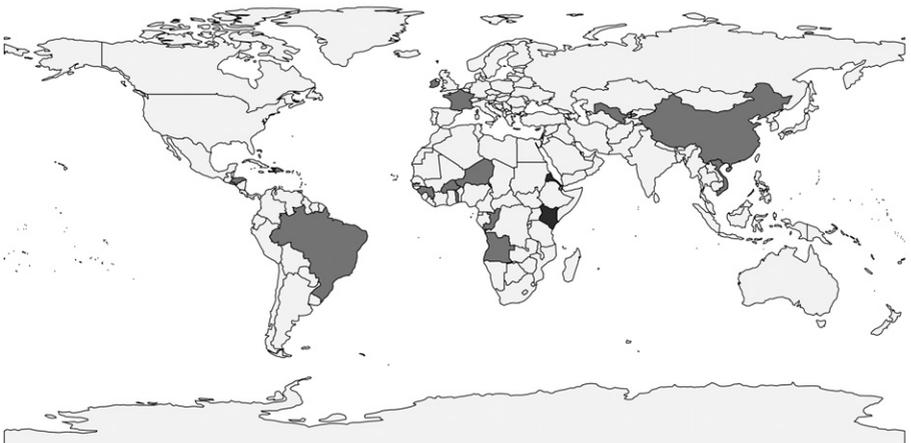
The distribution candidate quotas and reserved seats in Figure 1 replicates previous findings on quotas: quota types are differentially distributed around the world. In 1991, Argentina became the first country in the world to adopt a sizeable candidate quota, and other Latin America countries followed suit.⁴⁶ In Figure 1, almost all countries in Central and South America are shown as having adopted candidate quotas in 2015. In

Figure 1 Quota Adopting States at the End of 2015; Effective Quotas vs. All Other Quotas

Effective Quotas



All Other Quotas



Note: Candidate quotas appear in grey and reserved seats appear in black.

Europe, where Scandinavian countries pioneered voluntary party quotas, voluntary quotas are still most common, and therefore are unshaded in Figure 1. Finally, reserved seats quotas were first adopted in Asia, Africa, and the Middle East, and Figure 1 shows them to remain clustered in those regions. Interestingly, Figure 1 also suggests that

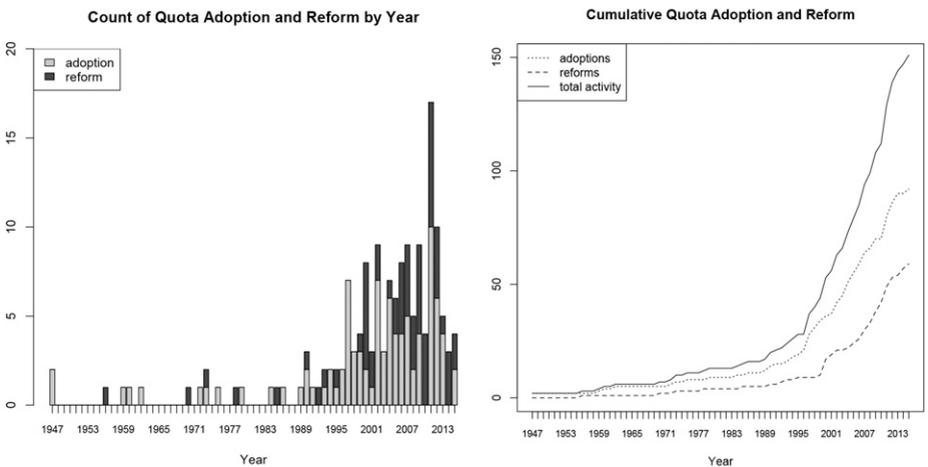
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effective and ineffective quotas can appear anywhere in the world. Latin America has the highest proportion of effective quotas, while sub-Saharan Africa has the largest number of ineffective quotas; eleven of the twenty-one ineffective quotas are on the subcontinent.

Next, we describe how quota adoption unfolded over time. Figure 2 summarizes the numbers of countries adopting and reforming quotas from the first quota adoption in 1947 to the end of 2015. The left-hand panel displays counts of quota adoptions and reforms by year. In total, we code sixty-three candidate quota adoptions, thirty-five candidate quota reforms, thirty-one reserved seat adoptions, and twenty-five reserved seat reforms. The sixty reforms are spread out across countries: 28 percent of countries that adopted a quota subsequently reformed their quota once and another 16 percent adopted two or more reforms. Over two-thirds of reforms to reserved seat are concentrated in four countries—Tanzania (seven reforms), Uganda (four reforms), Pakistan (three reforms), and Sudan (three reforms)—and overwhelmingly represent reforms to the percent threshold.

The right-hand panel of Figure 2 shows the cumulative trends of adoption and reform over time. The spread of all quota types, but particularly of candidate quotas, increased dramatically after the 1995 UN World Conference for Women in Beijing. Generally, we see increasing rates of adoption and reform over time, with the most active years between 2006 and 2012. In 2011 alone, seventeen countries newly adopted or reformed candidate quota rules. One particularly striking feature of Figure 2 is the nearly parallel trends of adoption and reform over time. Almost as soon as quotas began to be adopted, they began to be reformed. Although not displayed in Figure 2, it is worth noting that twelve countries legally removed quotas (although many eventually

Figure 2 Quota Adoption and Reform Over Time



reinstated them), namely: Bangladesh, China, Colombia, Egypt, Ghana, Italy, North Korea, Pakistan, Philippines, Somalia, Sudan, and Venezuela.

QAROT allows a precise understanding of quota adoption by type. Table 1 shows descriptive statistics by quota type, including features specific to candidate list and reserved seat quotas, from 1985 to 2015. Focusing on overall quota adoption, we have already observed dramatic growth, but the first few rows indicate different trends for specific quota types, including effective quotas. For instance, for 1985 only 20 percent of quotas can be coded as effective. By 2015, that percentage had increased dramatically to 72 percent. Over time, policymakers have learned how to craft and adopt more effective quotas.⁴⁷

Table 1 also reiterates that reserved seat quotas—and only reserved seat quotas—appear until the early 1990s. Nepal was the first country to adopt a candidate list quota in 1990, applying to just 5 percent of the total parliamentary seats (see also Figure 2). Yet, reserved seats and candidate quotas did not follow the same pattern of implementation over time. The number of countries using reserved seats grew mainly between 2000 and 2005, whereas the rise of candidate quotas was more continuous after 1995.

Among candidate quotas, sanctions appeared for the first time with Nepal’s candidate list quota adoption in 1990. Placement mandates first appeared the following year in Argentina (although the 1991 policy was never implemented). Over time, countries are generally less likely to implement quotas that only punish noncompliance

Table 1 Descriptive Statistics of Types of Quotas Over Time

	1985	1990	1995	2000	2005	2010	2015
All Quotas							
% Effective Quota	20	20	50	44	52	65	72
% Other Quota	80	80	50	56	48	35	28
N	5	5	8	25	42	57	75
Reserved Seat Quotas							
% Separate Tier	20	25	0	0	14	38	40
% Best Loser	0	0	0	0	21	25	25
% Indirect Selection	80	75	75	83	50	25	25
% Unspecified	0	0	25	17	14	13	10
N	5	4	4	6	14	16	20
Candidate Quotas							
% No Rules	NA	0	25	42	43	24	16
% Only Sanctions	NA	100	50	42	25	29	38
% Only Rank	NA	0	0	0	11	7	7
% Both Rules	NA	0	25	16	21	41	41
N	0	1	4	19	28	42	56

* Note: One country had both reserved seats and candidate quotas in 2010, and two countries had both types in 2015.

with sanctions, which likely reflects a growing understanding that sanctions can be less effective than other types of rules. In contrast, the percentage of countries using placement requirements or a combination of placement rules and sanctions (both rules) has grown over time. In 1995, 25 percent of countries used placement requirements in combination with sanctions. By 2015, 48 percent of countries were using placement rules either alone (7 percent) or in combination with sanctions (41 percent). Although not shown in Table 1, it is also noteworthy that strong sanctions and strong placement mandates are more frequent than their weak counterparts, suggesting that if a country is going to include these measures in the quota design, they often do so forcefully.

Table 1 also shows the distribution of the types of reserved seat quotas over time. Generally, indirect selection is declining in its share of reserved seat quotas, while separate tier is increasing. The first best-loser quota appeared in Afghanistan in 2004, and since 2005 between 20 and 25 percent of countries with reserved seat systems use this mechanism to fill seats. The percent of reserved seat quotas that do not specify the system by which seats are assigned (which we consider to be a less-effective quota) has declined over time.

Have quota thresholds increased over time? Table 2 presents the de facto threshold for all quotas, reserved seats, and candidate quotas over time. It is immediately apparent that de facto thresholds have increased for all types of quotas over time. In 1985, the mean de facto threshold was 7 percent; this figure more than quadrupled (up to 30 percent) in 2015. Table 2 also shows that candidate quota thresholds have increased more dramatically than have reserved seat thresholds. In 2015, the mean threshold for candidate quotas is nearly 8 percentage points higher than the threshold for reserved seats. That being said, reserved seat quotas are more likely to produce a share of elected women that is at least at the stated threshold, whereas candidate quotas may fall short of stated goals if, for example, parties do not comply with the quota.⁴⁸

Table 2 De Facto Thresholds, 1985–2015

	1985	1990	1995	2000	2005	2010	2015
All Quotas							
Mean (%)	6.8	6.6	18	21	23.2	28.2	30
Standard Deviation	(3.9)	(4.6)	(11.7)	(13.7)	(12.4)	(12.1)	(12.1)
N	5	5	8	25	42	57	75
Reserved Seats							
Mean (%)	6.8	7	17.8	12.9	17.7	20.5	24.3
Standard Deviation	(3.9)	(5.2)	(9.0)	(11.0)	(9.2)	(11.3)	(9.8)
N	5	4	4	6	14	16	20
Candidate Quotas							
Mean (%)		5	18.3	23.6	26	31.6	32.1
Standard Deviation			(15.4)	(13.7)	(13.0)	(11.6)	(12.2)
N	0	1	4	19	28	42	56

The increasing trend in thresholds is also visible in Figure 3, which plots de facto quota thresholds for quota adoptions and reforms over time, such that the size of each dot is proportional to the number of overlapping observations. The increase in de facto thresholds, along with the popularity of 30 percent as a threshold, are both striking. Also visible in Figure 3 is the cluster of seven countries that adopted quotas with 50 percent de facto thresholds.

Given our emphasis on the difference between quota adoption and implementation, we also consider the extent of a time lag between the two. Figure 4 shows the frequency of the number of years between quota adoption and implementation for all quota-implementing countries. Most common is to apply the quota in an election one year after quota adoption: fifty-five quota-implementing countries do that. Another twenty-six countries implement a quota two to three years after adoption. Eight countries adopted but had yet to implement quotas by 2015.⁴⁹

Figure 3 Change in De Facto Quota Threshold Over Time

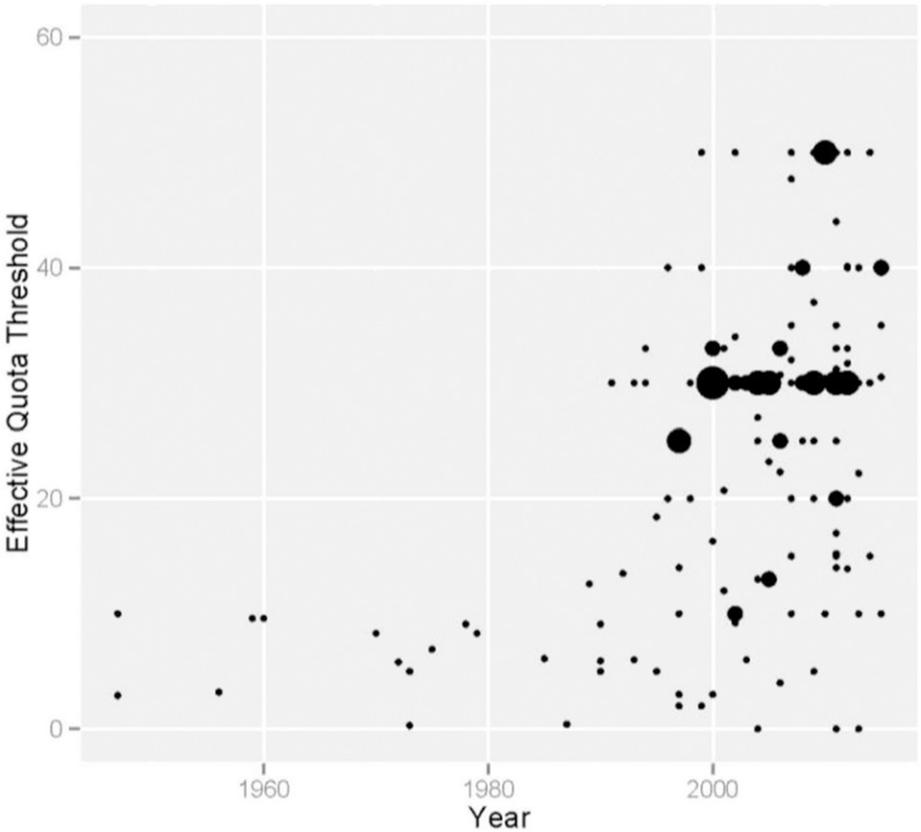
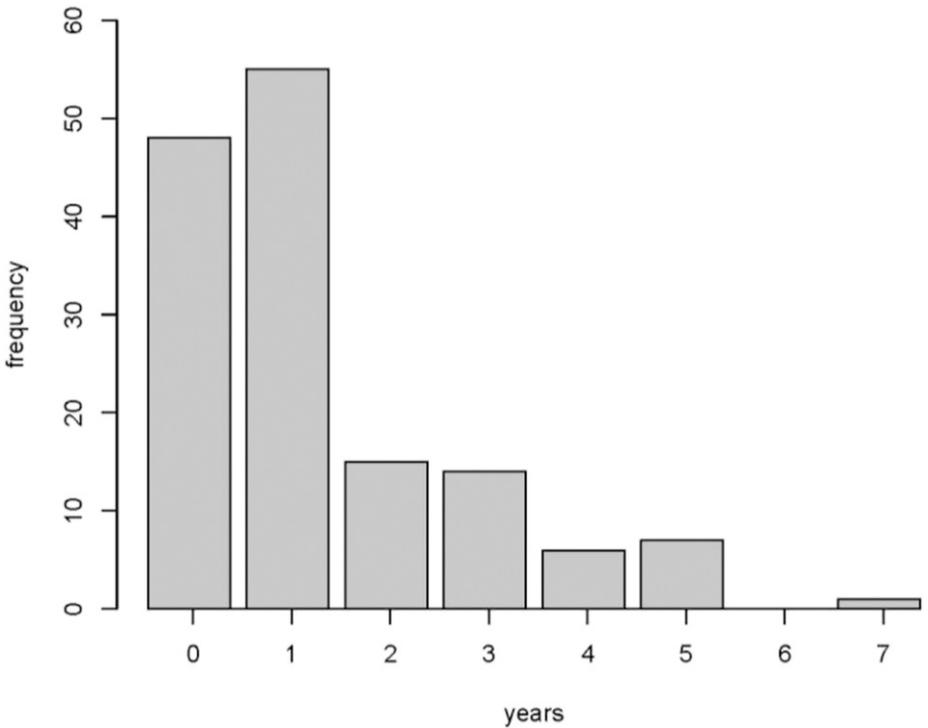


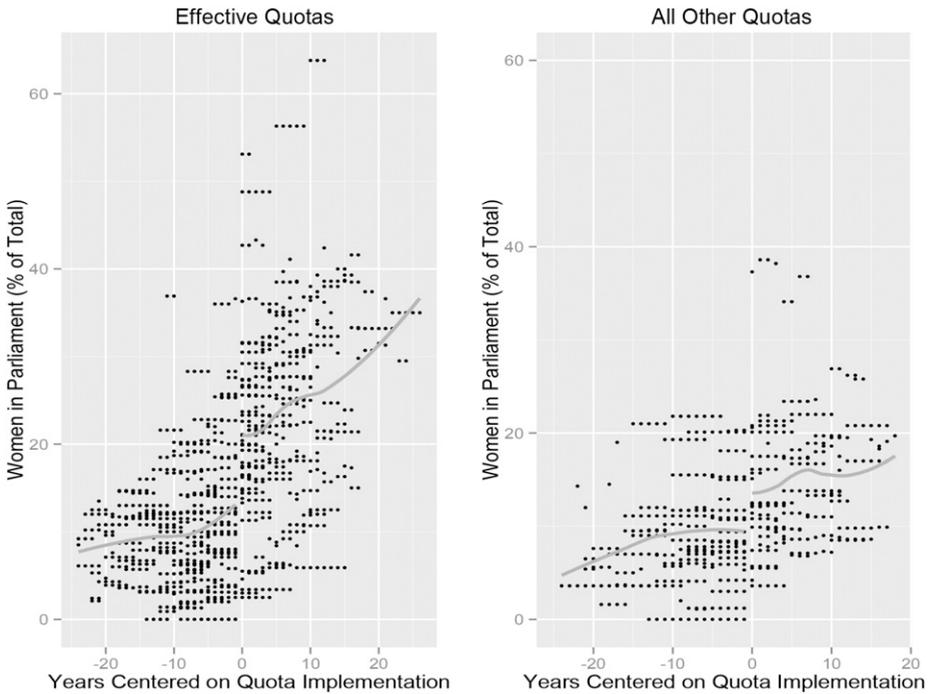
Figure 4 Frequency of Years between Adoption and Implementation

Quota Implementation and Women's Descriptive Representation

In this section we consider quota implementation and women's descriptive representation by merging our QAROT dataset with data on women's representation from the Inter-Parliamentary Union (IPU). We find that as of 2015, countries that had implemented quotas of any type or effectiveness have, on average, 24.7 percent women's legislative representation, whereas those without quotas have, on average, 18.4 percent, a statistically significant difference ($p < 0.001$).⁵⁰ There is no difference in women's descriptive representation between countries with reserved seats (24.3 percent) and those with candidate list quotas (25.3 percent).

Where we do see a difference in women's legislative representation is between our operationalization of effective quotas versus all other quotas, a difference we visualize in Figure 5. The left-hand panel shows the change in women's descriptive representation following the implementation of effective quotas, centering each country's timeline on the year of quota implementation. The right-hand side of Figure 5 shows the same trends for all other quotas. For effective quotas (left), we often see a sharp break before and after

Figure 5 Women in Parliament Before and After Quota Implementation



quota implementation demonstrating “quota shocks,” or sudden changes in women’s presence resulting from a quota.⁵¹ Indeed, the average change in women’s descriptive representation following effective quotas is 8.1 percentage points. Increases in women’s numbers also continue in elections after the initial implementation of effective quotas, which is likely due, at least in part, to reforms that further strengthen already effective quotas. All other quotas (shown on the right) show immediate gains in women’s representation that are half those of effective quotas, a bump of only 4.1 percentage points, on average, in the first election after adoption.

Conclusion

The global proliferation of quotas for women is a remarkable and consequential political development; however, compared to other important political developments, such as the rise of neoliberal policies, gender quotas remain understudied. We argue that this comparative lack of research is partially due to the lack of theoretically operationalized measures of quotas designed to account for global reach and historical process,

measured at an adequate level of precision, and acknowledging the variety of research questions to which such measures could be put.

We present such measures here and release them to the comparative politics community as the QAROT dataset. In this article, we discuss the issues involved in understanding quotas, arguing in particular for a global, longitudinal, and precise approach that includes distinctions in measurement that have heretofore gone unacknowledged, such as between adoption and implementation, stated threshold and de facto threshold, and variations within reserved seats. Acknowledging that a subset of researchers simply needs to control for the institutional features of national legislatures, we also theorize an effective quota: a single variable measuring the presence of a gender quota with features that should produce effects on the number of women in the legislature.

Our approach offers several advantages for researchers. The precision in measurement that we propose and implement is helpful in understanding causal mechanisms. Whether studied as adoption (dependent/outcome variable), or as implementation (independent/causal variable), scholars need to focus on particular features of these sometimes complex policies. Building on the work of the international organizations and academics that have thus far compiled data on quotas, QAROT is the first dataset to produce global, longitudinal data at a precise level of detail.

Longitudinal measurement is critical: assessing any impact of a quota policy requires tracking countries' progress through time. Furthermore, as existing quotas are increasingly reformed, these changes, when tracked over time and measured with adequate precision, allow scholars to understand which features of a quota lead to outcomes and which features leave things unchanged. With our longitudinal and precise measures, questions of the impact of gender quotas on a range of outcomes are finally amenable to empirical tests.

To demonstrate these possibilities, we included descriptive analyses that point to a number of generalizable conclusions. First, there is often a short delay between gender quota adoption and gender quota implementation. Second, nearly half of all quota-implementing countries reform their quotas after adoption. Over-time trends of adoption and reform are nearly parallel, which indicates that quota reform begins nearly as soon as quotas are adopted. Third, over time, countries using candidate quotas are less likely to implement quotas with only sanctions for noncompliance and more likely to use placement requirements or a combination of placement rules and sanctions. Next, for reserved seats, indirect selection is declining in its share of reserved seat quotas over time, whereas the separate tier method is increasing. Finally, de facto thresholds have increased dramatically over time and quotas are, generally, being written in more effective ways. That being said, while countries tend to adopt quotas in regional patterns, effective and ineffective quotas can appear anywhere in the world. Identifying the features of an effective quota is important because, as our data show, the mere adoption of a quota by a country is not enough to ensure a significant increase in women's representation over time.

Overall, our approach to the measurement of gender quotas will provide academic researchers and policy practitioners with tools to better understand, evaluate, or, at a minimum, control for, this global phenomenon.

NOTES

1. For example, Aili Mari Tripp and Alice Kang, "The Global Impact of Quotas: The Fast Track to Female Representation," *Comparative Political Studies*, 41 (March 2008), 338–61; Leslie A. Schwindt-Bayer, "Making Quotas Work: The Effect of Gender Quota Laws on the Election of Women," *Legislative Studies Quarterly*, 34 (February 2009), 5–28; Pamela Paxton, Melanie M. Hughes, and Matthew Painter, "Growth in Women's Political Representation: A Longitudinal Exploration of Democracy, Electoral System and Gender Quotas," *European Journal of Political Research*, 49 (January 2010), 25–52; Melanie M. Hughes, "Intersectionality, Quotas, and Minority Women's Political Representation Worldwide," *American Political Science Review*, 105 (August 2011), 604–20.

2. e.g., Susan Franceschet and Jennifer M. Piscopo, "Equality, Democracy, and the Broadening and Deepening of Gender Quotas," *Politics and Gender*, 9 (2013), 310–16; Amanda Clayton, "Electoral Gender Quotas and Attitudes toward Traditional Leaders: A Policy Experiment in Lesotho," *Journal of Policy Analysis and Management* 33 (Fall 2014), 1007–26. For a review, see Melanie M. Hughes, Pamela Paxton, and Mona Lena Krook, "Gender Quotas for Legislatures and Corporate Boards," *Annual Review of Sociology*, 43 (2017), 331–52.

3. Hughes, Paxton, and Krook, 2017.

4. e.g., Drude Dahlerup, ed., *Women, Quotas, and Politics* (New York: Routledge, 2006); Mona Lena Krook, *Quotas for Women in Politics: Gender and Candidate Selection Reform Worldwide* (New York: Oxford University Press, 2009).

5. We use the term "gender quotas," which is typical of the vast majority of research on these policies to date. However, gender quotas as they are currently conceived use a binary concept of gender that is tightly linked to biological sex and does not engage with contemporary understandings of gender as fluid or as a principle of social organization.

6. Our definition excludes rules that solely impact the political pipeline, without requiring women to be on the final roster of candidates or legislators. For instance, Panama regulates women's inclusion only in primary and internal party elections. Such pipeline measures ultimately offer no guarantee that women will appear on the ballot in the general election. Tricia J. Gray, "Quota Mechanics in Panamá, 1999–2014: 'Se obedece, pero no se Cumple,'" *Bulletin of Latin American Research*, 34 (July 2015), 289–304.

7. Data on party quotas cannot be created for all years in the QAROT dataset. Reliable data on party quotas prior to the 1990s for all parties and all countries are simply not available. Because individual political parties, large and small, introduce these measures, information on exact years of their adoption is often not available. Further, coding party quotas at the country level introduces numerous challenges. For instance, party quotas may be used by dominant parties, on the fringes by small parties, at the same time that thresholds for women's inclusion may vary across political parties. For a recent cross-sectional snapshot of party quotas around the world, researchers should use the Quota Database. International IDEA, "Quota Database," <http://www.quotaproject.org>, 2016.

8. Of the remaining articles, 6 percent were regional studies, and 13 percent were theoretical, conceptual, or review articles. Hughes, Paxton, and Krook, 2017.

9. Melanie M. Hughes, Mona Lena Krook, and Pamela Paxton, "Transnational Women's Activism and the Global Diffusion of Gender Quotas," *International Studies Quarterly*, 59 (June 2015), 357–72.

10. But see Nélide Archenti and Niki Johnson, "Engendering the Legislative Agenda with and without the Quota: A Comparative Study of Argentina and Uruguay," *Sociologia, Problemas e Práticas*, 52 (September–December 2006), 133–53.

11. Pamela Paxton and Melanie M. Hughes, "The Increasing Effectiveness of National Gender Quotas, 1990–2010," *Legislative Studies Quarterly*, 40 (August 2015), 331–62.

12. e.g., Drude Dahlerup and Lenita Freidenvall, "Quotas as a 'Fast Track' to Equal Representation for Women," *International Feminist Journal of Politics*, 7 (2005), 26–48; Elin Bjarnegård and Pär Zetterberg,

“Why Are Representational Guarantees Adopted for Women and Minorities? Comparing Constituency Formation and Quota Design within Countries,” *Representation*, 50 (September 2014), 307–20.

13. e.g., Tripp and Kang, 2008; Mona Lena Krook and Diana O’Brien, “The Politics of Group Representation: Quotas for Women and Minorities Worldwide,” *Comparative Politics*, 42 (April 2010), 253–72; Sarah Sunn Bush, “International Politics and the Spread of Quotas for Women in Legislatures,” *International Organization*, 65 (Winter 2011), 103–37; Hughes 2011; Amanda Clayton and Pär Zetterberg, “Quota Shocks: Electoral Gender Quotas and Government Spending Priorities Worldwide,” *Journal of Politics*, 80 (July 2018), 916–32; Hughes, Krook, and Paxton, 2015.

14. International IDEA 2016.

15. Jennifer M. Piscopo, “When Informality Advantages Women: Quota Networks, Electoral Rules and Candidate Selection in Mexico,” *Government and Opposition*, 51 (July 2016), 487–512.

16. Lisa Baldez, “Elected Bodies: The Gender Quota Law for Legislative Candidates in Mexico,” *Legislative Studies Quarterly*, 29 (May 2004), 231–58.

17. In some cases, quota rules are included both in the constitution and in secondary law: the general rule is established in the constitution and the details are specified in the electoral law or in a law on political parties, etc. Whenever quotas are included both in constitution and in secondary law and the years of adoption vary, we code adoption in the first of the two years.

18. e.g., Bush, 2011; Hughes, Krook, and Paxton, 2015.

19. Our use of quota implementation differs from some others. Although there is agreement that quota implementation refers to the process of applying the quota rule and that this process follows quota adoption, scholars’ operationalization of quota implementation varies. Some scholars focus on political parties’ level of compliance with the law. Others equate implementation with the outcome of quota provisions, that is, how well quota laws increase women’s political representation in different countries. Dahlerup, 2006; Krook, 2009; Susan Franceschet, Mona Lena Krook, and Jennifer M. Piscopo, *The Impact of Gender Quotas* (New York: Oxford University Press, 2012). We prefer to refer to quota implementation as the year in which the quota policy was first applied in an election and determine empirically whether quotas of different types produce gains in women’s representation, changes in policy, or other outcomes.

20. One way to think about quota adoption vs. implementation in research is as dependent vs. independent variables. Quota adoption dates are most likely to be used as the dependent variable, whereas quota implementation dates are more likely to be used as an independent variable.

21. Suzanne Mettler, “The Polyscape and the Challenges of Contemporary Politics to Policy Maintenance,” *Perspectives on Politics*, 14 (June 2016), 369–90.

22. Mark P. Jones, “Quota Legislation and the Election of Women: Learning From the Costa Rican Experience,” *Journal of Politics*, 66 (November 2004), 1203–23.

23. Jones, 2004.

24. Paxton and Hughes, 2015; Schwandt-Bayer, 2009.

25. Paxton and Hughes, 2015.

26. Dahlerup and Freidenvall, 2005; Schwandt-Bayer, 2009.

27. Some countries are also beginning to use the carrot instead of the stick, offering financial incentives to parties for fielding women candidates. Jennifer M. Piscopo, “State as Gender Equality Activists: The Evolution of Quota Laws in Latin America,” *Latin American Politics and Society*, 57 (Fall 2015), 27–49. Not all incentives are tied to quotas, however; Georgia has no national quota but offers public funding to parties to run women candidates.

28. Rainbow Murray, “Why Didn’t Parity Work? A Closer Examination of the 2002 Election Results,” *French Politics*, 2 (December 2004), 347–62; Krook, 2009.

29. For a notable exception, see Schwandt-Bayer, 2009.

30. The effects of fines and the withdrawal of public funds likely vary across parties. For instance, less institutionalized and newer parties may be harder hit by fines than well-established or incumbent parties.

31. See, however, Bjarnegård and Zetterberg, 2014.

32. Amanda Clayton, “Women’s Political Engagement under Quota-Mandated Female Representation: Evidence from a Randomized Policy Experiment,” *Comparative Political Studies*, 48 (March 2015), 333–69.

33. In the dataset we make even finer-grained distinctions among these three major reserved seat types. For example, for indirect reserved seats we distinguish between appointments and political party elections.

34. Paxton and Hughes, 2015.

35. Ki-young Shin, “Women’s Sustainable Representation and the Spillover Effect of Electoral Gender Quotas in South Korea,” *International Political Science Review*, 35 (January 2014), 80–92.

36. Clayton and Zetterberg, 2018.

37. Gregory D. Schmidt and Kyle L. Saunders, "Effective Quotas, Relative Party Magnitude, and the Success of Female Candidates Peruvian Municipal Elections in Comparative Perspective," *Comparative Political Studies*, 37 (August 2004), 704–34; Mark P. Jones, "Gender Quotas, Electoral Laws, and the Election of Women: Evidence from the Latin American Vanguard," *Comparative Political Studies*, 42 (January 2009), 56–81; Schwindt-Bayer, 2009; Paxton and Hughes, 2015.

38. Paxton, Hughes, and Green, 2006.

39. In 2014, the *Atlas of Electoral Gender Quotas* reported five countries with both reserved seats and legislated candidate quotas. Drude Dahlerup, Zeina Hilal, Nana Kalandadze, and Rumbidzai Kandawasvika-Nhundu, *Atlas of Gender Quotas* (Stockholm: IDEA, 2014). In addition to Rwanda and Mauritania, they also code Algeria, Iraq, and Kenya. They appear to code Kenya as both because of a requirement that other reserved seats (e.g. for youth, people with disabilities, etc.) also comprise half women. We do not count this type of quota within a quota. Algeria and Iraq are differences in judgement / coding rules.

40. If a quota is repealed or otherwise ceases to be a part of the codified electoral process, we code any subsequent quota adoptions as new adoptions rather than reforms. This applies to the following cases: Bangladesh, Bolivia, China, Colombia, Egypt, Ghana, Pakistan, Sudan, and Venezuela.

41. Vague placement mandates may make it easier for parties to fail to meet quota targets or may delay compliance if parties contest what is a "winnable position."

42. Paxton, Hughes, and Painter, 2010; Paxton and Hughes, 2015.

43. Clayton and Zetterberg, 2018.

44. International IDEA, 2016.

45. Krook, 2009; Bush, 2011; Dahlerup et al., 2014.

46. Gloria Bonder and Marcela Nari, "The 30 Percent Quota Law: A Turning Point for Women's Political Participation in Argentina," in Alida Brill, ed., *Rising Public Voice: Women in Politics Worldwide* (New York: Feminist Press, 1995); Mark P. Jones, "Gender Quotas, Electoral Laws, and the Election of Women: Lessons from the Argentine Provinces," *Comparative Political Studies*, 31 (February 1998), 3–21; Tricia J. Gray, "Electoral Gender Quotas: Lessons from Argentina and Chile," *Bulletin of Latin American Research*, 22 (2003), 52–78.

47. Paxton and Hughes, 2015.

48. Paxton and Hughes, 2015.

49. Namely: Chile, El Salvador, Eritrea, Ireland, Nicaragua, Samoa, Togo, and Vietnam.

50. Notably, our "no quota group" includes cases with substantial political party quotas, such as Sweden, South Africa, and Mozambique, which all have over 40 percent women's representation. Excluding countries with voluntary party quotas from the "no quota group" would make the observed discrepancy between the quota and no quota groups even more pronounced.

51. Clayton and Zetterberg, 2018.