Dynamic Impact of Legislative Gender Quotas on Female Representation in Cabinets
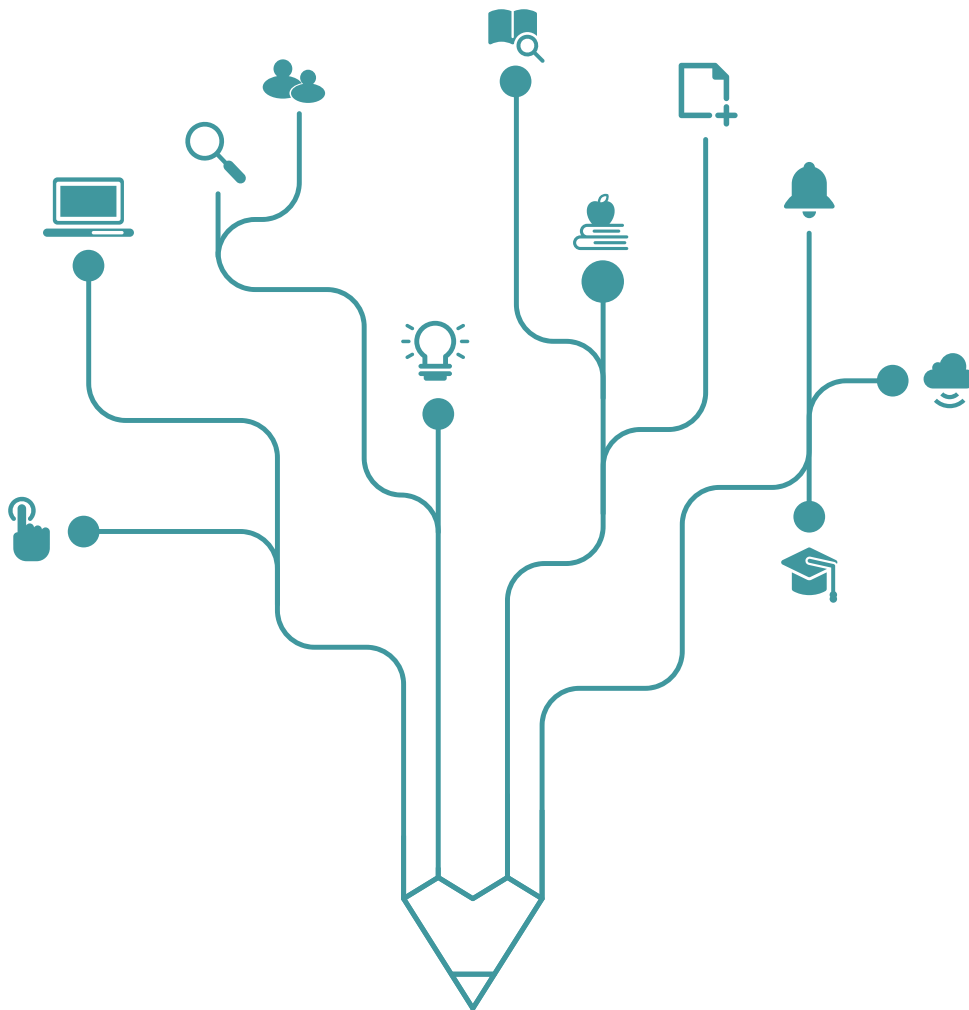
Dongil Lee (KDI School of Public Policy and Management)

KDI SCHOOL
KDI School of Public Policy and Management

Dynamic Impact of Legislative Gender Quotas on Female Representation in Cabinets[*]

Dongil Lee

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Abstract

Do gender quotas increase female representation in government cabinets? Informal theories suggest a supply shock of female legislators enhances women's presence at higher levels of power. I analyze the gradual implementation of *effective* gender quotas across 154 countries (1966–2015) using a staggered difference-in-differences design. Quotas increase the share of female ministers by 2–4 percentage points over 20 years of reform, with a 6–12 percentage point increase over 15–20 years. Using a novel dataset of ministers in 14 African countries, I show that quotas increase the share of ministers with prior legislative experience. I also find no negative impact on ministerial competence or ethnic diversity of cabinets. These findings highlight the importance of *sustained* affirmative action in breaking the glass ceiling.

Keywords: Gender quota, Affirmative action, Gender inequality, Political representation, Ministerial Appointment

1 Introduction

Female representation in cabinets, the highest levels of state power, is a central topic in the study of political representation (Nyrup et al. 2024; Armstrong et al. 2024; Krook and Diana Z O'Brien 2012; Tiffany D Barnes and Diana Z O'Brien 2018). While legislatures in emerging democracies are often regarded as "rubber stamps," cabinets are seen by scholars as arenas where power-sharing among diverse social groups can be observed in all political regimes (Francois et al. 2015; Nyrup and Bramwell 2020; Arriola and Johnson 2014; Woldense and Kroeger 2024). However, as of 2021, the global average share of women in cabinets remained at 23%, suggesting a high inequality level in representation (Nyrup et al. 2024).

A prevalent approach to analyzing female political representation is the supply and demand model of the political selection (Ashworth et al. 2024; Lawless and Fox 2005; Norris and Lovenduski 1995; Escobar-Lemmon and Taylor-Robinson 2005). Among the key supply factors influencing female cabinet representation is adopting national electoral gender quotas (Clayton 2021; Paxton and Hughes 2015). Those quotas, enacted through constitutional or legal measures, mandate that a share of candidates or legislators be women (Hughes et al. 2019).[1] Previous literature implies that because they can expand the pool of potential candidates for ministerial positions, this supply shock would lead to a better representation of women politicians in cabinets in the longer run (Kerevel 2019; Clayton 2021; Diana Z O'Brien and Rickne 2016; Thomsen and King 2020). For example, Krook and Diana Z O'Brien (2012, p. 853) note that in most cases, women's cabinet appointments were attributed to a higher presence of women among political elites.

To empirically test the hypothesis, I employ a staggered difference-in-differences (DiD) design that examines the gradual implementation of *effective* legislative gender quotas across 154 countries from 1966 to 2015. Effective gender quotas are those meeting a minimum *de facto* threshold of 10 percent for candidate or reserved seat quotas, accompanied by strong sanctions for noncompliance and/or stringent placement mandates (Hughes et al. 2019). This approach distinguishes *de*

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[1]Specifically, they take two forms: reserved seats, which guarantee seats for women, and candidate quotas, which require parties to field a certain percentage of women without ensuring their election.

facto from *de jure* affirmative action. In some cases, though countries may adopt gender quotas through constitutional or secondary laws and implement them in elections, those gender quotas have very low thresholds or lack robust enforcement mechanisms. This distinction is theoretically essential for addressing the potential for window-dressing practices by political leaders (Bush and Zetterberg 2021), which could lead to underestimating the true effect size.

I find that effective gender quotas increase the share of female ministers in government cabinets by 2-4 percentage points over 20 years of reform. More interestingly, the event-study plot indicates that those effects are more pronounced in the long term (after 10 years of reform). For instance, 15-20 years post-reform, the treatment effect ranges from a 6-12 percentage point increase. This is a substantial gain, considering that the global average proportion of female cabinet members in 2015 was 19.7 percent. However, I do not find a similar effect for positions with high-prestige portfolios, such as finance and foreign affairs, which are characterized by high visibility and significant control over policy decisions (Nyrup et al. 2024). Notably, the results remain robust after excluding parliamentary systems, indicating that the dynamic effects are not driven by cabinet formation within the legislature in Westminster systems (Tiffany D Barnes and Diana Z O'Brien 2018; Blondel 1987; Escobar-Lemmon and Taylor-Robinson 2005).

As the key mechanism, I offer a *direct* evidence for the role of a supply shock in female representation in cabinets. Using a novel dataset of African ministers from 14 countries, I find that quotas increase the share of ministers with previous legislative experience. I also find that gender quotas do not negatively impact the ethnic diversity and ministerial competence of cabinets, measured by educational attainment and prior career experience. This evidence alleviates concerns over quotas' potential side effects on the quality (Besley et al. 2017; Weeks and Baldez 2015; Diana Z. O'Brien 2012; Baltrunaite et al. 2014) and diversity of cabinets (Karekurve-Ramachandra and Lee 2020; Folke et al. 2015; Tiffany D. Barnes and Holman 2020).

This paper contributes to the literature on affirmative action and political representation. To my knowledge, this study is among the first to examine the spillover effects of legislative gender quotas on female representation in other domains of power on a global scale. While previous research has

focused on single-country cases, such as Sweden (Diana Z O'Brien and Rickne 2016; Besley et al. 2017), Mexico (Kerevel 2019) and India (O'Connell 2020; Bhavnani 2009), this work reconciles their mixed findings by enhancing external validity.[2] Another key contribution of this paper is demonstrating that gender quotas do not diminish the ethnic diversity or ministerial competence of cabinets, aligning with prior findings on legislatures.

One important exception is Tiffany D. Barnes et al. (2024), which asks a similar question using the same datasets.[3] They take a comprehensive approach, exploring institutional differences across countries with rigorous methods and rich findings. This paper complements their work by focusing on the *dynamic* effects of *effective* gender quotas, offering a nuanced understanding of legislative gender quotas. Specifically, my findings underscore the importance of *sustained* affirmative action in breaking the glass ceiling, given the greater returns in the long run. In addition, using a unique African ministers dataset, this article directly demonstrates the supply channel's workings[4] and finds that effective quotas do *not* lead to unintended negative impacts on political representation or selection, even in weak institutional contexts.

2 Data

In this section, I describe the data sources of the treatment (legislative gender quotas) and outcome (female minister share in cabinets) variables. The unit of analysis is country-year, and the sample is 154 countries from 1966 to 2015.[5]

Gender quota. The data source for legislative gender quotas is Quota Adoption and Reform Over Time (QAROT), 1947-2015 (Hughes et al. 2019).[6] Specifically, effective legislative gender

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[2]There exist extensive studies on the appointments of female ministers across the globe without a specific focus on causal effects of gender quotas: Nyrup et al. (2024); Armstrong et al. (2024); Krook and Diana Z O'Brien (2012); Tiffany D Barnes and Diana Z O'Brien (2018).

[3]These projects were conducted independently, and I became aware of their work when we each produced working papers.

[4]In particular, this complements the causal mediation analysis presented by Tiffany D. Barnes et al. (2024) on pp. 32–33.

[5]The sample excludes small island nations. For more details, see Sections A and B in the Supporting Information (SI).

[6]Six countries with non-consecutive effective quotas are dropped out of the sample: Bangladesh, Bolivia, Egypt, South Korea, Pakistan, and Portugal. This is because the CS estimator (Callaway and Sant'Anna 2021) does not allow the

quota is a binary indicator that equals 1 if a country implements a legislative gender quota meeting a minimum threshold of 10 percent for candidate or reserved seat quotas, accompanied by strong sanctions for noncompliance and/or stringent placement mandates (Hughes et al. 2019). In contrast, implemented legislative gender quota (i.e., *de jure*) refers to the implementation of gender quotas in an election–whether the law was followed or not.
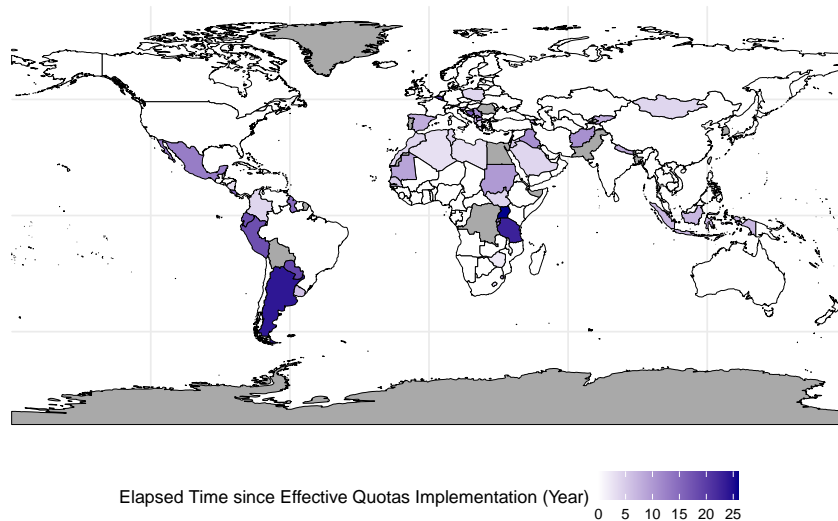

Elapsed Time since Effective Quotas Implementation (Year)

0   5   10   15   20   25

Figure 1: Elapsed Time since Effective Legislative Gender Quota (Year)

Notes: Effective legislative gender quotas meet a minimum threshold of 10 percent for candidate or reserved seat quotas, accompanied by strong sanctions for noncompliance and/or stringent placement mandates (Hughes et al. 2019). The dark gray color denotes missing values.

Female minister share. I use Nyrup et al. (2024), which computes the share of female ministers drawing upon the WhoGov dataset (Nyrup and Bramwell 2020), which contains data on 58,670 cabinet members in 177 countries from 1966 to 2023. Besides gender, the dataset contains information on portfolio type, allowing for computing the share of women ministers attaining high-prestige cabinet positions.[7]

Ministers' competence and ethnic diversity. To investigate the potential adverse effects of gender quotas, I supplement the WhoGov dataset (Nyrup and Bramwell 2020) by collecting additional variables on individual ministers' ethnic identity, educational attainment, and pre-

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switching from being treated to being untreated.

[7]For more details, see Section A.2 in the SI.

appointment professional career experiences. This enriched dataset includes approximately 5,000 unique ministers across 14 African countries.[8] To assess ministerial competence at the country-year level, I calculate the proportion of ministers with (1) an undergraduate degree or higher, (2) Western tertiary education, and (3) prior experience in central government roles, such as top-ranking public officials. Additionally, I compute the Ethnolinguistic Fractionalization (ELF) index to quantify the ethnic diversity of cabinet compositions. Because the dataset also includes information on former legislative work experience, it enables a direct test of the supply channel mechanism.[9]

3 Empirical Strategy

Event-study Model Specification. To identify the *dynamic* effects of effective legislative gender quotas on female representation in cabinets, I estimate the following two-way fixed effects (TWFE) OLS model specification:

$$Y_{it} = \sum_{k=-20}^{20+} \mathbf{1}(E_{it} = k)\beta_k + \gamma X_{it} + \delta_i + \lambda_t + \varepsilon_{it}.$$

The primary outcome of interest Y is the share of female ministers in cabinets in a country i and a year t. δ_i is country-fixed effects capturing time-invariant country-level variables; λ_t is year-fixed effects. Let Q_i denote the year in which a country i implements an effective legislative gender quota (i.e., the first year of effective quota implementation). E_{it} represents time relative to effective quota implementation for each country; specifically, $E_{it} = t - Q_i$. All event-study dummy variables are set to zero for those countries that remained without an effective quota by 2015.[10] The coefficients β_k on the set of event-study dummy variables capture the effects k years ($k \neq -1$) before and after the effective quota adoption, relative to one year before its implementation (i.e., $k = -1$).

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[8]The dataset includes Benin, Cameroon, Cote d'Ivoire, Gabon, Ghana, Guinea, Kenya, Liberia, Nigeria, Republic of Congo, Sierra Leone, Tanzania, Togo, and Uganda.

[9]For further details, see Section A.3 in the SI.

[10]The dataset covers the period from 1966 to 2015.

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Recent research highlights that in contexts with staggered treatment timing and the presence of time-varying treatment effects (i.e., heterogeneous dynamic treatment effects), the TWFE OLS estimation may produce misleading results (Goodman-Bacon 2021). To address this concern, I complement the OLS estimator with two heterogeneity robust estimators: the CS estimator (Callaway and Sant'Anna 2021) and the CH estimator (de Chaisemartin and D'Haultfœuille 2020).

Identifying assumption. The key identifying assumption is the parallel trends assumption (PTA) that, without effective quotas, the share of female ministers in government cabinets would have followed parallel trends. Figure 2 shows the effects of effective legislative quotas on the share of female ministers using both unconditional (Panel a) and conditional (Panel b) PTAs. The pretreatment estimates in both panels suggest that the parallel trends assumption mostly holds but one has to be cautious in interpreting the main results as causal estimates. Across all three types of estimates and two PTAs, the size of the point estimates is close to zero, and most of them are individually not significant at the 5 percent level despite the long pretreatment period (20 years). However, in some years, those individual estimates are different from zero and estimates are jointly significant at the conventional level.[11]

4 Results

4.1 Dynamic Effects of Gender Quotas

In this section, I perform event-study regressions to examine the dynamic effects of legislative gender quotas. As a first-stage result, I find that effective quotas increase the supply of female ministerial candidates, with Figure A4 showing an immediate posttreatment rise in female legislators.

Main results. The overall effect in the posttreatment period (20 years) ranges from a 2-percentage point increase (CH estimates) to a 4-percentage point increase (CS estimates), statistically significant at the conventional level. More importantly, Figure 2 reports the *dynamic* effects

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[11]For more details, see Tables A6, A7, and A8.

of effective legislative quotas.[12] The quotas do not have tangible impacts in the shorter run (within 10 years of reform); point estimates are close to zero and not significant at the conventional level. However, the size of the effects gradually increases over time, and the positive effects emerge 10 years after the quota adoption. For example, 15-20 years after the reform, the OLS estimates correspond to an increase of 6-12 percentage points. The CS and CH estimators yield a similar range of estimates. This represents a substantial gain, especially given that the global average proportion of female cabinet members was 19.7 percent in 2015. One caveat is that for some years (esp., 12-15 posttreatment years), the causal estimates are either marginally significant or not significant at the conventional level. However, I do not observe a comparable long-term dynamic effect for high-prestige positions, such as finance and foreign affairs, which are notable for their high visibility and considerable influence (Nyrup et al. 2024) (see Figure A5).

In Section E of the SI, I present robustness checks. Notably, the main results remain consistent even after excluding parliamentary system countries, indicating that the dynamic effects are not primarily driven by the direct supply of ministers from the legislature in the Westminster system (Blondel 1987).

Mechanism: I directly test for the supply mechanism using the original African ministers dataset and the TWFE OLS estimation. Column 1 in Table 1 shows that effective gender quotas have positive effects on the share of ministers with prior legislative experience. Interestingly, gender quotas not only increase the proportion of former-legislator ministers among all and female ministers (Panels A and C), but they also increase it among male ministers (Panel B).

4.2 Effects on Ministerial Competence and Ethnic Diversity

In this section, I examine whether gender quotas adversely impact ministerial competence and ethnic diversity in cabinets. Instead, Table 1 shows that, using TWFE OLS estimation, quotas increase the educational attainment of all ministers, measured with college degrees and Western education (Columns 2 and 3, respectively). Although the share of female ministers with college

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[12]For more details, see Tables A9, A10, and A11.

degrees slightly diminishes under gender quotas, the overall increase in college-educated ministers is driven by a significant rise among male ministers (Panels B and C in Column 2). Meanwhile, quotas do not have any impact on ministers' prior work experience for the central government in top positions (Column 4).[13] Likewise, quotas do not change the ethnic diversity of cabinets, measured by the ELF index (Column 5). Taken together, these results show that gender quotas do not negatively affect ministers' abilities or ethnic representation in cabinets, even in contexts with weak institutions—alleviating concerns about their potential side effects. If anything, quotas may positively impact overall ministerial competence, especially by significantly increasing competence among male ministers.

5   Discussion

In sum, gender quotas increase the share of female ministers by 2–4 percentage points over 20 years and 6–12 percentage points over 15–20 years. In 14 African countries, quotas do not reduce ministerial competence or cabinet diversity. However, the presented results should be interpreted with caution for two reasons. First, only 15 countries in the sample sustained effective gender quotas for over 10 years, limiting the external validity of the findings beyond primarily developing countries.[14] Second, investigating the potential adverse effects of quotas is based on 14 African countries, which limits external validity.

One key takeaway is that gender quotas have a dynamic effect over the long run, which aligns with the supply channel. Female politicians require time to develop the political connections and expertise necessary for leadership roles, and quotas serve as a mechanism to foster a pipeline of qualified candidates over the long term (Thomsen and King 2020; Diana Z O'Brien and Rickne 2016). Other mechanisms influencing ministerial selection likely exist, though further research is needed to uncover these dynamics. For example, quotas might reshape public perceptions, in-

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[13]In the SI, I analyze outcomes on education (Table A12) and experience (Table A13), yielding consistent results.
[14]Uganda, Argentina, Tanzania, Belgium, Paraguay, Ecuador, Peru, Costa Rica, Guyana, Mexico, Rwanda, Afghanistan, Iraq, Burundi, and Sudan.

creasing demand for female ministers (Escobar-Lemmon and Taylor-Robinson 2005), while simultaneously inspiring female aspirants with greater political ambitions (Diana Z O'Brien and Rickne 2016), fueled by strengthened grassroots women's activist networks (Goyal 2024).

Another key finding is that quotas, as shown in prior studies on legislatures, do not harm ministerial quality or cabinet diversity.[15] If anything, quotas appear to strengthen overall cabinet competence, primarily by significantly raising the quality of male ministers.[16] Though it requires more research in future studies, this might be explained by "the crisis of the mediocre man" (Besley et al. 2017). Specifically, quotas limit mediocre male party leaders' capacity to sustain their influence by appointing equally mediocre followers, which often secures their political survival. As a result, quotas encourage the resignation of these leaders, create opportunities for more capable male legislators, and ultimately lead to the selection of more competent male ministers.

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[15]See Weeks and Baldez (2015) and Diana Z. O'Brien (2012).
[16]Baltrunaite et al. (2014) documents a similar finding among Italian legislators.

(a) Unconditional Parallel Trends

(b) Conditional Parallel Trends

● de Chaisemartin-D'Haultfoeuille   ◇ Callaway-Sant'Anna   △ OLS
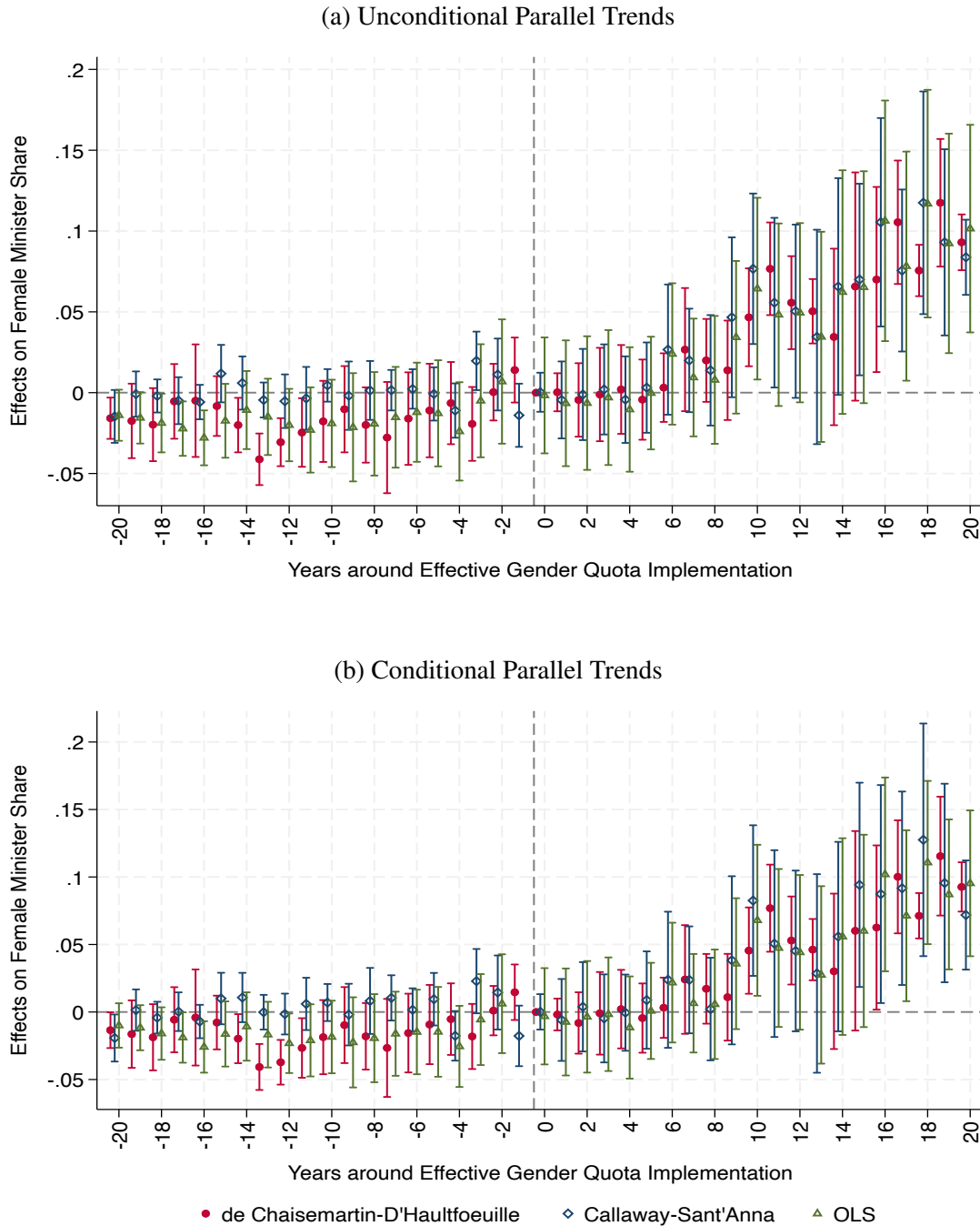
Figure 2: Effects of Effective Legislative Gender Quota on Share of Female Ministers

Notes: The outcome variable is the share of female ministers in government cabinets. The figure shows point estimates and 95% confidence intervals from 3 on a two-year bin. Panel A is without controls; Panel B includes *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*. CH estimates (de Chaisemartin and D'Haultfœuille 2020) are denoted by solid circle markers in red. CS estimates (Callaway and Sant'Anna 2021) are denoted by hollow diamond markers in blue, using doubly robust inverse probability weighting, and observations never treated and those not yet treated as control. OLS estimates are denoted by hollow triangle markers in green.

Table 1: Effects of Legislative Gender Quota on Ministers' Competence and Diversity

Outcome	Share of Ministers with				Ethnic
	Legislator Exp.	College Deg.	Western Edu.	Central Gov.	Diversity
	(1)	(2)	(3)	(4)	(5)
Panel A. All ministers					
Gender Quota	0.27***	0.16**	0.14***	0.03	0.00
	(0.06)	(0.07)	(0.04)	(0.03)	(0.02)
Panel B. Male ministers only					
Gender Quota	0.23***	0.17**	0.15***	0.02	0.00
	(0.06)	(0.07)	(0.04)	(0.03)	(0.02)
Panel C. Female ministers only					
Gender Quota	1.33***	-0.02*	0.20	0.15	-0.19
	(0.21)	(0.01)	(0.13)	(0.22)	(0.13)
Country FE	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓
Control Var.	✓	✓	✓	✓	✓
No Quota Mean	0.25	0.93	0.63	0.26	0.80
R^2	0.74	0.43	0.67	0.76	0.54
N	684	682	654	684	688

Notes: Two-way fixed effects OLS estimation. Outcome is the share of ministers with (1) pre-appointment legislative experience, (2) college degree, (3) Western education, and (4) central government experience; and (5) ethnic diversity. Sample is limited to 14 African countries from 1966 to 2015. Country- and year-fixed effects are included. Controls include *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*. Note the caveat that the female ministers only sample is smaller than the full sample. Standard errors are clustered at the country level.

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Supporting Information

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Representation in Cabinets

Dongil Lee

A Data

A.1 Data Source

Table A1: Data Source

N	Variable name	Data source	Original source
1	Share of female ministers	Nyrup et al. (2024)	WhoGov 2.0
2	Share of female ministers (high-prestige)	Nyrup et al. (2024)	WhoGov 2.0
3	Share of female ministers (weighted)	Nyrup et al. (2024)	WhoGov 2.0
4	Effective legislative gender quota	Hughes et al. (2019)	Hughes et al. (2019)
5	Log Population	Nyrup et al. (2024)	Penn World Table 10.0
6	GDP per capita	Nyrup et al. (2024)	Penn World Table 10.0
7	GDP growth rate	Nyrup et al. (2024)	Penn World Table 10.0
8	Female leader	Nyrup et al. (2024)	WhoGov 2.0
9	Democracy–V-DEM	Nyrup et al. (2024)	Teorell et al. (2019)
10	Democracy–Polity IV	Nyrup et al. (2024)	Marshall et al. (2019)
11	Democracy–Cheibub et al. (2010)	Nyrup et al. (2024)	Cheibub et al. (2010)
12	Democracy–Boix et al. (2013)	Nyrup et al. (2024)	Boix et al. (2013)
13	Democracy–Stock of polyarchy	Nyrup et al. (2024)	Marshall et al. (2019)
14	Parliamentary system	Mattes et al. (2016)	Mattes et al. (2016)
15	African ministers-related variables	Author	Author

A.2 WhoGov Dataset

When Nyrup et al. (2024) compute the main outcome variable, the authors focus on all full-ranking cabinet members, excluding junior ministers, the head of state, and non-cabinet officials from the calculation. Nyrup et al. (2024) also construct two additional measures of female representation in cabinets. First, they calculate the proportion of high-prestige ministerial positions held by women, using the WhoGov classification as the reference. High-prestige roles are defined by their visibility and substantial policy influence, including positions such as minister of defense, finance, foreign affairs, and home/interior, as well as the deputy prime minister and, in presidential systems, the prime minister. Second, they create a weighted measure of female ministers, assigning a score of 3 to high-prestige roles, 2 to medium-prestige roles, and 1 to low-prestige roles. They then calculate the total score for positions held by women each year and divide it by the overall score for the cabinet in that year.

A.3   African Ministers Dataset

In this section, I describe in detail how I constructed the African ministers dataset for 14 select countries: Benin, Cameroon, Cote d'Ivoire, Gabon, Ghana, Guinea, Kenya, Liberia, Nigeria, Rep. of Congo, Sierra Leone, Tanzania, Togo, and Uganda. I chose those countries primarily because Francois et al. (2015) provides minister ethnicity data for them from their independence year to 2004. First, I started with the list of ministers from the WhoGov dataset v2 (Nyrup and Bramwell 2020) and then collected their educational attainment, pre-appointment career experiences, and ethnicity information. Following Francois et al. (2015), Arriola and Johnson (2014), and Ricart-Huguet (2021), student RAs used various resources, such as historical dictionaries for each country, World Biographical Information System (WBIS), African Confidential, AllAfrica.com, Wikipedia, and country-specific websites and sources described in Rainer and Trebbi (2016). Regarding ethnic identity, I followed Rainer and Trebbi (2016) and extended their data until 2015. I compute the share of ministers with a characteristic at the country and year level, where the characteristic is operationalized as Table A2. I calculate the ELF index to measure the level of ethnic diversity of a cabinet in a country in a year.

Table A2: African Ministers Dataset Description

N	Variable name	Operationalization
1	Ethnic identity	Ethnicity defined as Francois et al. (2015).
2	High school degree or higher	1 if a minister had a high school degree or higher before appointment; 0 otherwise.
3	College degree or higher	1 if a minister had a high school degree or higher before appointment; 0 otherwise.
4	Graduate degree or higher	1 if a minister had a graduate degree or higher before appointment; 0 otherwise.
5	Western tertiary education	1 if a minister received Western tertiary education before appointment; 0 otherwise.
5	Legislator experience	1 if a minister served as a member of parliament (either in the lower or upper house) before appointment; 0 otherwise. Ministers who served at the state/province/region level in the past are also counted as an elected politician (e.g., State House of Assembly in Nigeria)
6	Minister experience	1 if a minister served as a minister before appointment; 0 otherwise. This includes various rankings of ministers, such as Prime minister, Minister (incl. acting/interim), Deputy minister, Vice minister, Assistant minister, Minister delegate, and Minister without portfolio.
7	Central government experience	1 if a minister served as a top-ranking official in the central/federal government before appointment; 0 otherwise. The position includes: top-ranking cabinet officials, such as permanent secretary, secretary-general, and director of cabinet affairs; top-ranking staff of the presidential office, such as cheif of staff and government spokesperson; leadership roles in government agency, such as national electoral commission, and director general of health, cheif executive of the environment agency.
8	Local government experience	1 if a minister served as a top-ranking official in the local government before appointment; 0 otherwise. The position includes leadership positions in state, province, region, or city, such as state governor, prefect, premier, regional president, regional commissioner, minister of a provincial government, mayor, and related deputy roles. The position does not include leadership positions at lower levels, such as municipality, county, or district.

B Descriptive Statistics

B.1 Summary Statistics

This table is for the sample of 154 countries from 1966 to 2015. The sample excludes the following 22 small island nations: Antigua and Barbuda, Bahamas, Barbados, Cabo Verde, Cayman Islands, Comoros, Dominica, Fiji, Grenada, Kiribati, Maldives, Marshall Islands, Nauru, Palau, Samoa, Sao Tome and Principe, Seychelles, Singapore, Solomon Islands, Tonga, Tuvalu, and Vanuatu.

Table A3: Summary Statistics for the World Ministers dataset

Variable name	All					Treatment	Control
	Mean	Std. Dev.	Min.	Max.		Mean	Mean
Effective legislative gender quota	0.07	0.26	0.00	1.00		1.00	0.00
Share of female ministers	0.09	0.11	0.00	0.63		0.18	0.08
Share of female ministers among high-prestige portfolios	0.04	0.11	0.00	1.00		0.09	0.03
Share of female ministers (portfolio importance weighted)	0.08	0.10	0.00	0.59		0.16	0.07
Log Population	15.89	1.61	11.69	21.06		16.19	15.86
GDP pc	8.86	1.29	5.51	12.15		8.96	8.86
GDP growth rate	3.85	6.74	-66.12	106.28		4.17	3.82
Female leader	0.03	0.18	0.00	1.00		0.04	0.03
Democracy: Polyarchy index (V-DEM)	0.44	0.30	0.01	0.93		0.55	0.43
Democracy: Polity IV index	0.55	0.37	0.00	1.00		0.70	0.54
Democracy: Cheibub, Ghandi, Vreeland (2010)	0.45	0.50	0.00	1.00		0.58	0.44
Democracy: Boix, Miller, Rosato (2013)	0.45	0.50	0.00	1.00		0.59	0.44
Democracy: Polyarchy stock (95% depreciation rate)	0.40	0.28	0.02	1.00		0.49	0.39
N	6780					474	6306

A5

This table is for the sample of 14 African countries from 1966 to 2015.

Table A4: Summary Statistics for the African Ministers dataset

Variable name	All				Treatment	Control
	Mean	Std. Dev.	Min.	Max.	Mean	Mean
Effective legislative gender quota Legislative Gender Quota	0.07	0.26	0.00	1.00	1.00	0.00
Share of ministers with high school or higher educational attainment	0.99	0.02	0.75	1.00	1.00	0.99
Share of ministers with undergraduate or higher educational attainment	0.94	0.15	0.00	1.00	0.98	0.93
Share of ministers with graduate educational attainment	0.58	0.28	0.00	1.00	0.70	0.57
Share of ministers with Western education (undergraduate or higher)	0.61	0.27	0.00	1.00	0.36	0.63
Share of ministers with previous legislator experience	0.28	0.30	0.00	1.00	0.70	0.25
Share of ministers with previous ministerial appointment experience	0.16	0.16	0.00	0.88	0.19	0.16
Share of ministers with previous central gov't work experience	0.25	0.22	0.00	1.00	0.03	0.26
Share of ministers with previous local gov't work experience	0.07	0.09	0.00	0.50	0.06	0.07
Ethnic diversity of ministers (ELF index)	0.81	0.10	0.00	0.94	0.89	0.80
Log Population	15.90	1.21	13.22	18.99	17.21	15.80
GDP per capita	7.80	0.73	5.67	10.40	7.22	7.84
GDP growth rate	3.97	8.00	-51.03	106.28	6.25	3.79
Female leader	0.02	0.13	0.00	1.00	0.00	0.02
Democracy: Polyarchy index (V-DEM)	0.29	0.16	0.08	0.78	0.38	0.28
N	688				51	637

B.2   Effective Gender Quota

Figure A1 displays the global proportion of (1) implemented and (2) effective legislative gender quotas over time. First, legislative gender quotas have been widely adopted since the late 1990s, with the share of implemented quotas rising from under 5% in 1997 to over 35% by 2015, a significant increase within less than two decades. Second, the proportion of effective quotas is generally slightly lower than that of implemented quotas. As described earlier, effective (*de facto*) quotas are subject to stricter criteria, which often exclude some legally established (*de jure*) quotas in most years.
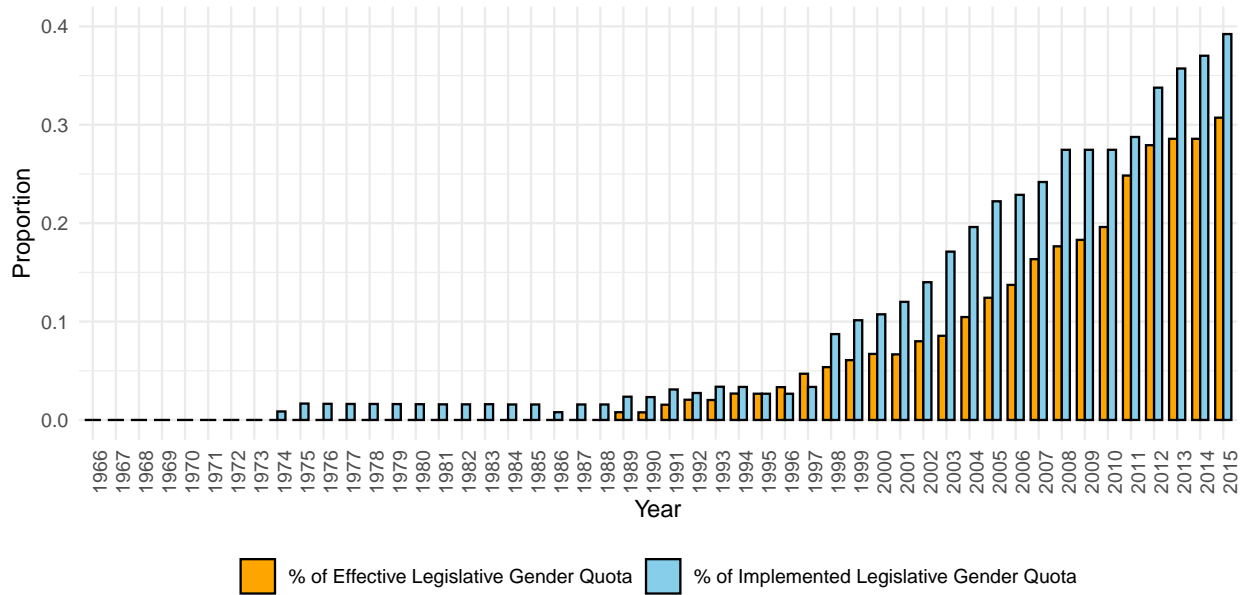
Figure A1: Proportion of Legislative Gender Quotas across the Globe

Notes: Effective legislative gender quota refers to *de facto* affirmative action where the binary indicator equals 1 if a country implements a legislative gender quota meeting a minimum threshold of 10 percent for candidate or reserved seat quotas, accompanied by strong sanctions for noncompliance and/or stringent placement mandates (Hughes et al. 2019). Implemented legislative gender quota refers to the implementation of gender quotas in an election–whether the law was followed or not. White empty cells denote missing values in the dataset.

Table A5: Elapsed Time for Quotas by Country

N	Country	Effective Quota First Year	Years Since First Year
1	Uganda	1989	26
2	Argentina	1991	24
3	Tanzania	1992	23
4	Belgium	1994	21
5	Paraguay	1996	19
6	Ecuador	1997	18
7	Peru	1997	18
8	Bosnia & Herzegovina	1998	17
9	Costa Rica	1999	16
10	Guyana	2000	15
11	Mexico	2002	13
12	North Macedonia	2002	13
13	Rwanda	2003	12
14	Afghanistan	2004	11
15	Iraq	2004	11
16	Serbia	2004	11
17	Burundi	2005	10
18	Eswatini	2005	10
19	Sudan	2005	10
20	Mauritania	2006	9
21	Slovenia	2006	9
22	Armenia	2007	8
23	Kyrgyzstan	2007	8
24	Nepal	2007	8
25	Spain	2007	8
26	Albania	2008	7
27	Indonesia	2008	7
28	Uruguay	2009	6
29	Jordan	2010	5
30	Senegal	2010	5
31	Colombia	2011	4
32	Lesotho	2011	4
33	Mongolia	2011	4
34	Montenegro	2011	4
35	Morocco	2011	4
36	Poland	2011	4
37	Saudi Arabia	2011	4
38	South Sudan	2011	4
39	Tunisia	2011	4
40	Algeria	2012	3
41	Greece	2012	3
42	Libya	2012	3
43	Nicaragua	2012	3
44	Zimbabwe	2013	2
45	Angola	0	0
46	Australia	0	0

N	Country	Effective Quota First Year	Years Since First Year
47	Austria	0	0
48	Azerbaijan	0	0
49	Bahrain	0	0
50	Belarus	0	0
51	Benin	0	0
52	Bhutan	0	0
53	Botswana	0	0
54	Brazil	0	0
55	Brunei	0	0
56	Bulgaria	0	0
57	Burkina Faso	0	0
58	Cambodia	0	0
59	Cameroon	0	0
60	Canada	0	0
61	Central African Republic	0	0
62	Chad	0	0
63	Chile	2015	0
64	China	0	0
65	Congo - Brazzaville	0	0
66	Croatia	2015	0
67	Cuba	0	0
68	Cyprus	0	0
69	Czechia	0	0
70	Côte d'Ivoire	0	0
71	Denmark	0	0
72	Djibouti	0	0
73	Dominican Republic	0	0
74	El Salvador	0	0
75	Equatorial Guinea	0	0
76	Eritrea	0	0
77	Estonia	0	0
78	Ethiopia	0	0
79	Finland	0	0
80	France	0	0
81	Gabon	0	0
82	Gambia	0	0
83	Georgia	0	0
84	Germany	0	0
85	Ghana	0	0
86	Guatemala	0	0
87	Guinea	0	0
88	Guinea-Bissau	0	0
89	Haiti	0	0
90	Honduras	0	0
91	Hungary	0	0
92	Iceland	0	0

Table A5: Elapsed Time for Quotas by Country *(continued)*

N	Country	Effective Quota First Year	Years Since First Year
93	India	0	0
94	Iran	0	0
95	Ireland	0	0
96	Israel	0	0
97	Italy	0	0
98	Jamaica	0	0
99	Japan	0	0
100	Kazakhstan	0	0
101	Kenya	0	0
102	Kuwait	0	0
103	Laos	0	0
104	Latvia	0	0
105	Lebanon	0	0
106	Liberia	0	0
107	Lithuania	0	0
108	Luxembourg	0	0
109	Madagascar	0	0
110	Malawi	0	0
111	Malaysia	0	0
112	Mali	0	0
113	Malta	0	0
114	Mauritius	0	0
115	Moldova	0	0
116	Mozambique	0	0
117	Myanmar (Burma)	0	0
118	Namibia	0	0
119	Netherlands	0	0
120	New Zealand	0	0
121	Niger	0	0
122	Nigeria	0	0
123	North Korea	0	0
124	Norway	0	0
125	Oman	0	0
126	Panama	0	0
127	Papua New Guinea	0	0
128	Philippines	0	0
129	Qatar	0	0
130	Russia	0	0
131	Sierra Leone	0	0
132	Slovakia	0	0
133	Somalia	0	0
134	South Africa	0	0
135	Sri Lanka	0	0
136	Suriname	0	0
137	Sweden	0	0
138	Switzerland	0	0

Table A5: Elapsed Time for Quotas by Country *(continued)*

N	Country	Effective Quota First Year	Years Since First Year
139	Syria	0	0
140	Tajikistan	0	0
141	Thailand	0	0
142	Togo	0	0
143	Trinidad & Tobago	0	0
144	Turkey	0	0
145	Turkmenistan	0	0
146	Ukraine	0	0
147	United Arab Emirates	0	0
148	United Kingdom	0	0
149	United States	0	0
150	Uzbekistan	0	0
151	Venezuela	2015	0
152	Vietnam	0	0
153	Yemen	0	0
154	Zambia	0	0

Notes: Effective legislative gender quota refers to *de facto* affirmative action where the binary indicator equals 1 if a country implements a legislative gender quota meeting a minimum threshold of 10 percent for candidate or reserved seat quotas, accompanied by strong sanctions for noncompliance and/or stringent placement mandates (Hughes et al. 2019).
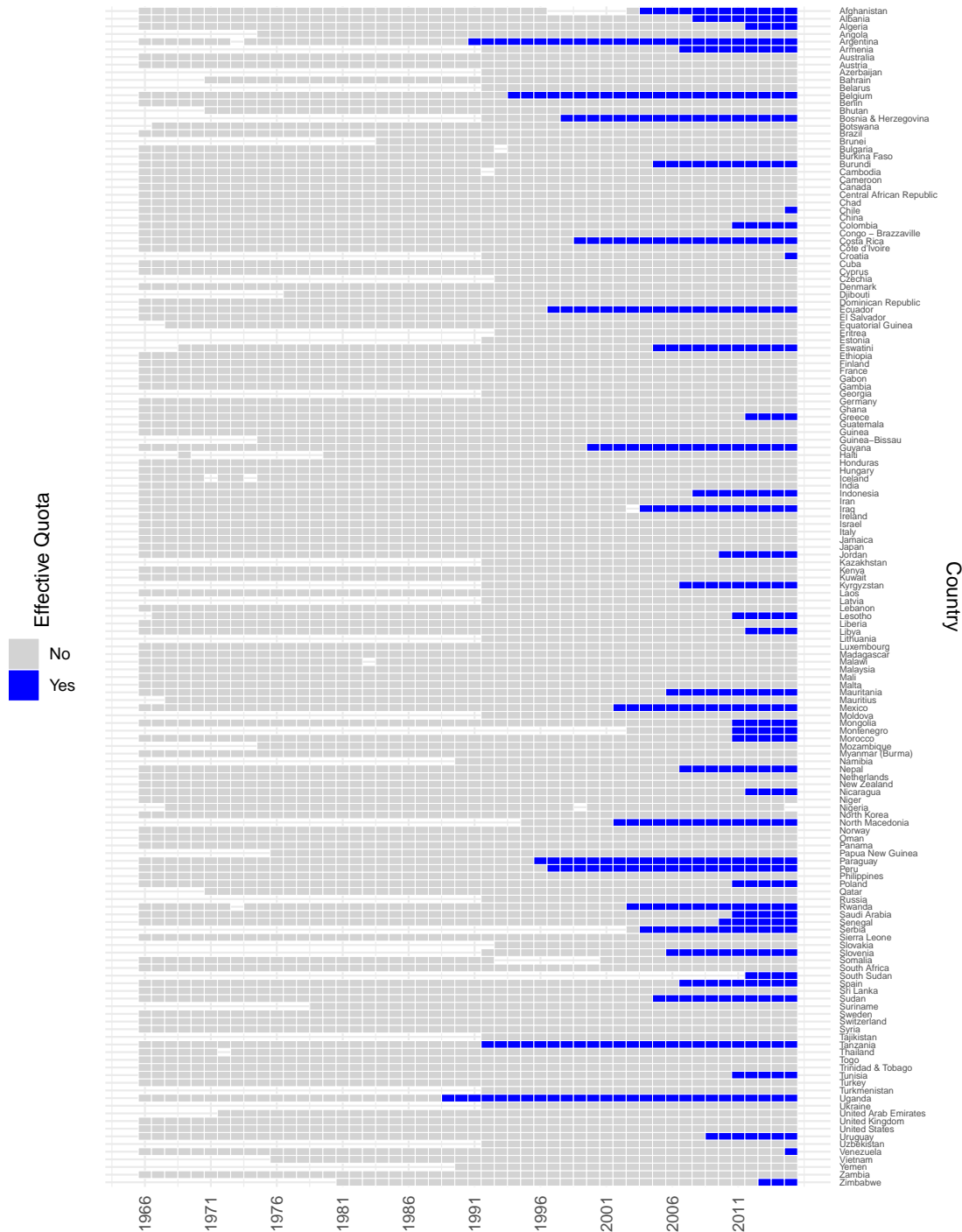
Figure A2: Effective Legislative Gender Quota across the Globe

Notes: Effective legislative gender quota refers to *de facto* affirmative action where the binary indicator equals 1 if a country implements a legislative gender quota meeting a minimum threshold of 10 percent for candidate or reserved seat quotas, accompanied by strong sanctions for noncompliance and/or stringent placement mandates (Hughes et al. 2019). Countries with non-consecutive effective quotas are dropped out of the sample: Bangladesh, Bolivia, Egypt, South Korea, Pakistan, and Portugal. White empty cells denote missing values in the dataset.
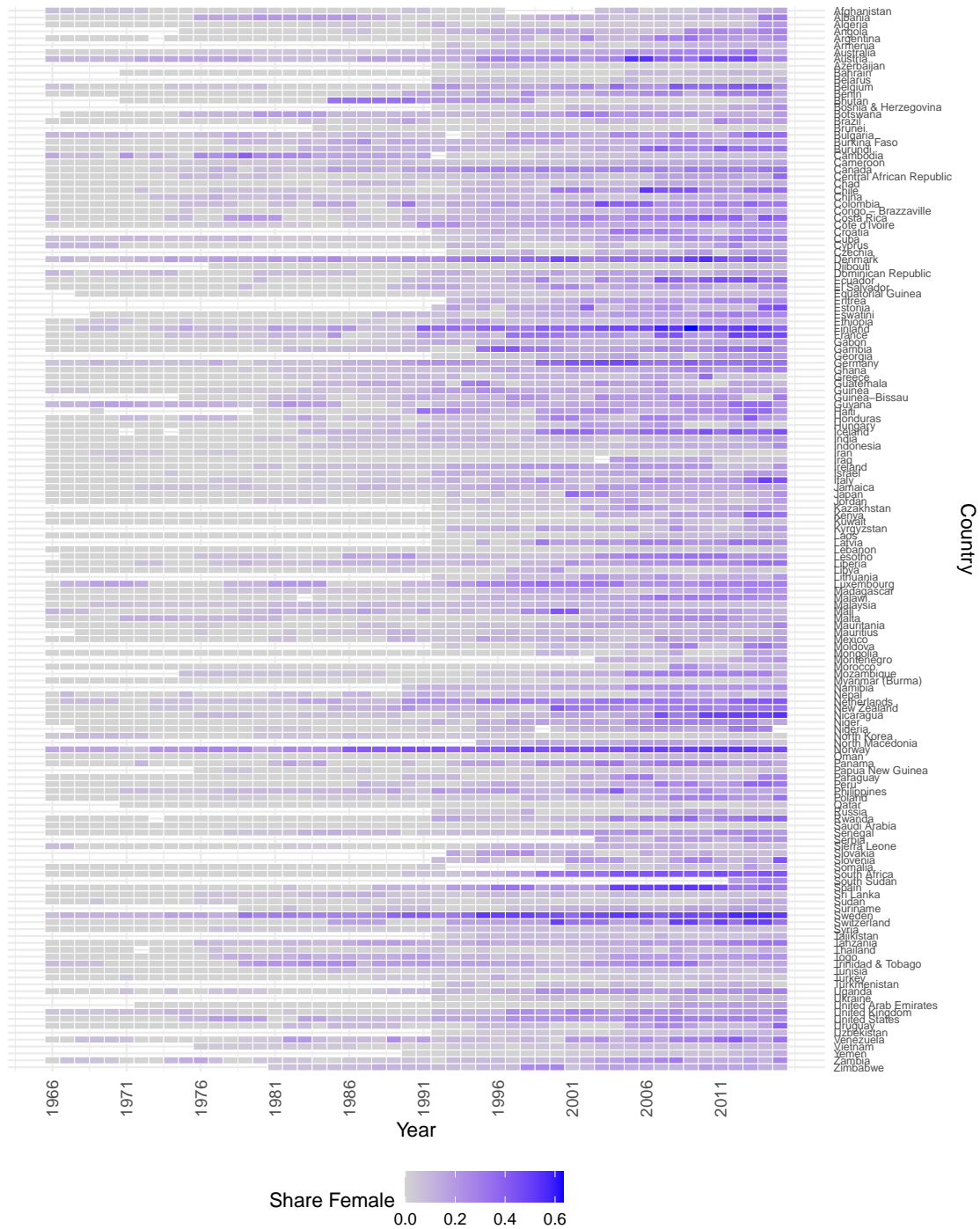
B.3 Share of Female Ministers

Figure A3: Share of Female Ministers across the Globe

Notes: The outcome is the share of female ministers in cabinets (Nyrup et al. 2024). White empty cells denote missing values in the dataset.

C Identification Assumption

Table A6: Pretreatment Effects of Legislative Gender Quota on Share of Female Ministers (OLS Estimates)

Outcome	Share of Female Ministers	
	(1)	(2)
F2event	0.01	0.01
	(0.02)	(0.02)
F3event	-0.01	-0.01
	(0.02)	(0.02)
F4event	-0.02	-0.03*
	(0.02)	(0.02)
F5event	-0.01	-0.01
	(0.02)	(0.02)
F6event	-0.01	-0.01
	(0.02)	(0.02)
F7event	-0.02	-0.02
	(0.02)	(0.02)
F8event	-0.02	-0.02
	(0.02)	(0.02)
F9event	-0.02	-0.02
	(0.02)	(0.02)
F10event	-0.02	-0.02
	(0.01)	(0.01)
F11event	-0.02*	-0.02
	(0.01)	(0.01)
F12event	-0.02*	-0.02**
	(0.01)	(0.01)
F13event	-0.01	-0.02
	(0.01)	(0.01)
F14event	-0.01	-0.01
	(0.01)	(0.01)
F15event	-0.02	-0.02
	(0.01)	(0.01)
F16event	-0.03***	-0.03***
	(0.01)	(0.01)
F17event	-0.02**	-0.02**
	(0.01)	(0.01)
F18event	-0.02**	-0.02
	(0.01)	(0.01)
F19event	-0.02*	-0.01
	(0.01)	(0.01)
F20event	-0.01*	-0.01
	(0.01)	(0.01)
Country FE	✓	✓
Year FE	✓	✓
Control Var.		✓
R^2	0.64	0.66
N	6780	6370

Notes: Staggered difference-in-differences with OLS estimator. Controls include *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*. The OLS F-tests of joint significance: $F = 1.60$ and $p = 0.0618$ (unconditional) and $F = 1.48$ and $p = 0.1024$ (conditional).

Table A7: Pretreatment Effects of Legislative Gender Quota on Share of Female Ministers (CS Estimates)

Outcome	Share of Female Ministers	
	(1)	(2)
Pre_avg	-0.00	0.00
	(0.00)	(0.00)
Tm20	-0.01*	-0.02**
	(0.01)	(0.01)
Tm19	-0.00	0.00
	(0.01)	(0.01)
Tm18	-0.00	-0.00
	(0.01)	(0.01)
Tm17	-0.00	0.00
	(0.01)	(0.01)
Tm16	-0.01	-0.01
	(0.01)	(0.01)
Tm15	0.01	0.01
	(0.01)	(0.01)
Tm14	0.01	0.01
	(0.01)	(0.01)
Tm13	-0.00	-0.00
	(0.01)	(0.01)
Tm12	-0.01	-0.00
	(0.01)	(0.01)
Tm11	-0.00	0.01
	(0.01)	(0.01)
Tm10	0.00	0.01
	(0.01)	(0.01)
Tm9	-0.00	-0.00
	(0.01)	(0.01)
Tm8	0.00	0.01
	(0.01)	(0.01)
Tm7	0.00	0.01
	(0.01)	(0.01)
Tm6	0.00	0.00
	(0.01)	(0.01)
Tm5	-0.00	0.01
	(0.01)	(0.01)
Tm4	-0.01	-0.02*
	(0.01)	(0.01)
Tm3	0.02**	0.02*
	(0.01)	(0.01)
Tm2	0.01	0.01
	(0.01)	(0.01)
Tm1	-0.01	-0.02
	(0.01)	(0.01)
Country FE	✓	✓
Year FE	✓	✓
Control Var.		✓

Notes: Staggered difference-in-differences with CS estimator (Callaway and Sant'Anna 2021). Controls include *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*. The pretrend Chi-square tests of joint significance: $\chi^2 = 5.81 \times 10^{11}$ and $p = 0.0000$ (unconditional) and $\chi^2 = 7.46 \times 10^5$ and $p = 0.0000$ (conditional).

Table A8: Pretreatment Effects of Legislative Gender Quota on Share of Female Ministers (CH Estimates)

Outcome	Share of Female Ministers	
	(1)	(2)
Placebo_1	0.01	0.01
	(0.01)	(0.01)
Placebo_2	0.00	0.00
	(0.01)	(0.01)
Placebo_3	-0.02*	-0.02
	(0.01)	(0.01)
Placebo_4	-0.01	-0.01
	(0.01)	(0.01)
Placebo_5	-0.01	-0.01
	(0.01)	(0.01)
Placebo_6	-0.02	-0.02
	(0.01)	(0.01)
Placebo_7	-0.03	-0.03
	(0.02)	(0.02)
Placebo_8	-0.02*	-0.02
	(0.01)	(0.01)
Placebo_9	-0.01	-0.01
	(0.01)	(0.01)
Placebo_10	-0.02	-0.02
	(0.01)	(0.01)
Placebo_11	-0.02**	-0.03**
	(0.01)	(0.01)
Placebo_12	-0.03***	-0.04***
	(0.01)	(0.01)
Placebo_13	-0.04***	-0.04***
	(0.01)	(0.01)
Placebo_14	-0.02**	-0.02**
	(0.01)	(0.01)
Placebo_15	-0.01	-0.01
	(0.01)	(0.01)
Placebo_16	-0.00	-0.00
	(0.02)	(0.02)
Placebo_17	-0.01	-0.01
	(0.01)	(0.01)
Placebo_18	-0.02*	-0.02
	(0.01)	(0.01)
Placebo_19	-0.02	-0.02
	(0.01)	(0.01)
Placebo_20	-0.02**	-0.01**
	(0.01)	(0.01)
Country FE	✓	✓
Year FE	✓	✓
Control Var.		✓

Notes: Staggered difference-in-differences with CH estimator (de Chaisemartin and D'Haultfœuille 2020). Controls include *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*. Test of joint nullity of the placebos: $p = 0$ (unconditional) and $p = 0$ (conditional).

D   Main Results

D.1   Share of Female Legislators

(a) Unconditional Parallel Trends

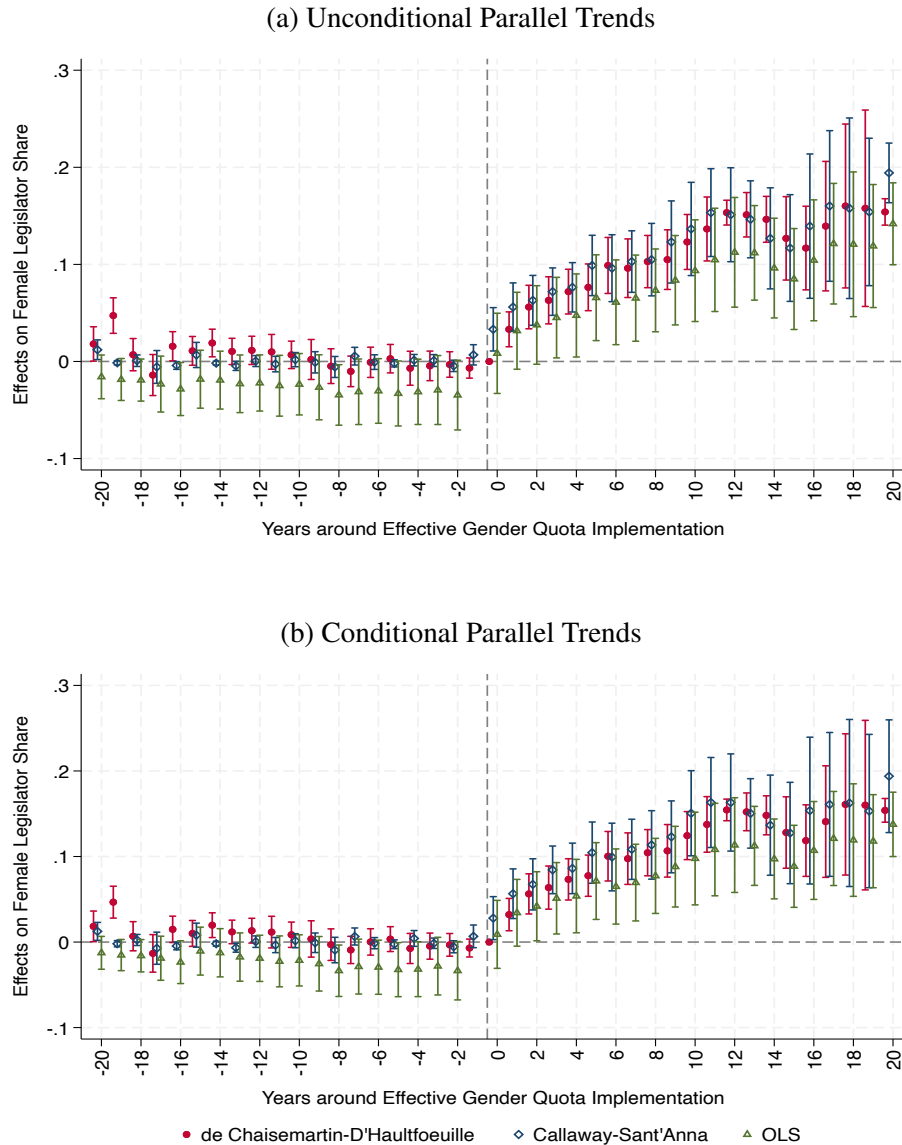
(b) Conditional Parallel Trends

Figure A4: Effects of Effective Legislative Gender Quota on Share of Female Legislators

Notes: The outcome variable is the share of female legislators in national legislatures. The figure shows point estimates and 95% confidence intervals from 3. Panel A is without controls; Panel B includes *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*. CH estimates (de Chaisemartin and D'Haultfœuille 2023) are denoted by solid circle markers in red. CS estimates (Callaway and Sant'Anna 2021) are denoted by hollow diamond markers in blue, using doubly robust inverse probability weighting, and observations never treated and those not yet treated as control. OLS estimates are denoted by hollow triangle markers in green.

D.2 Share of Female Ministers

Table A9: Dynamic Effects of Legislative Gender Quota on Share of Female Ministers (OLS Estimates)

Outcome	Share of Female Ministers	
	(1)	(2)
L0event	-0.00	-0.00
	(0.02)	(0.02)
L1event	-0.01	-0.01
	(0.02)	(0.02)
L2event	-0.01	-0.00
	(0.02)	(0.02)
L3event	-0.00	-0.00
	(0.02)	(0.02)
L4event	-0.01	-0.01
	(0.02)	(0.02)
L5event	-0.00	0.00
	(0.02)	(0.02)
L6event	0.02	0.02
	(0.02)	(0.02)
L7event	0.01	0.01
	(0.02)	(0.02)
L8event	0.01	0.01
	(0.02)	(0.02)
L9event	0.03	0.04
	(0.02)	(0.02)
L10event	0.06**	0.07**
	(0.03)	(0.03)
L11event	0.05*	0.05
	(0.03)	(0.03)
L12event	0.05*	0.04
	(0.03)	(0.03)
L13event	0.03	0.03
	(0.03)	(0.03)
L14event	0.06	0.06
	(0.04)	(0.04)
L15event	0.07*	0.06
	(0.04)	(0.04)
L16event	0.11***	0.10***
	(0.04)	(0.04)
L17event	0.08**	0.07**
	(0.04)	(0.03)
L18event	0.12***	0.11***
	(0.04)	(0.03)
L19event	0.09***	0.09***
	(0.03)	(0.03)
L20event	0.10***	0.10***
	(0.03)	(0.03)
Country FE	✓	✓
Year FE	✓	✓
Control Var.		✓
R^2	0.64	0.66
N	6780	6370

Notes: Staggered difference-in-differences with OLS estimator. Controls include *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*.

Table A10: Dynamic Effects of Legislative Gender Quota on Share of Female Ministers (CS Estimates)

Outcome	Share of Female Ministers	
	(1)	(2)
Post_avg	0.04***	0.04***
	(0.01)	(0.02)
Tp0	0.00	0.00
	(0.01)	(0.01)
Tp1	-0.00	-0.01
	(0.01)	(0.02)
Tp2	-0.00	0.00
	(0.01)	(0.02)
Tp3	0.00	-0.00
	(0.01)	(0.02)
Tp4	-0.00	-0.00
	(0.01)	(0.01)
Tp5	0.00	0.01
	(0.01)	(0.02)
Tp6	0.03	0.02
	(0.02)	(0.03)
Tp7	0.02	0.02
	(0.02)	(0.02)
Tp8	0.01	0.00
	(0.02)	(0.02)
Tp9	0.05*	0.04
	(0.03)	(0.03)
Tp10	0.08***	0.08***
	(0.02)	(0.03)
Tp11	0.06**	0.05
	(0.03)	(0.04)
Tp12	0.05*	0.05
	(0.03)	(0.03)
Tp13	0.03	0.03
	(0.03)	(0.04)
Tp14	0.07*	0.06
	(0.03)	(0.04)
Tp15	0.07**	0.09**
	(0.03)	(0.04)
Tp16	0.11***	0.09**
	(0.03)	(0.04)
Tp17	0.08***	0.09**
	(0.03)	(0.04)
Tp18	0.12***	0.13***
	(0.04)	(0.04)
Tp19	0.09***	0.10**
	(0.03)	(0.04)
Tp20	0.08***	0.07***
	(0.01)	(0.02)
Country FE	✓	✓
Year FE	✓	✓
Control Var.		✓

Notes: Staggered difference-in-differences with CS estimator (Callaway and Sant'Anna 2021). Controls include *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*.

Table A11: Dynamic Effects of Legislative Gender Quota on Share of Female Ministers (CH Estimates)

Outcome	Share of Female Ministers	
	(1)	(2)
Av_tot_eff	0.02**	0.02*
	(0.01)	(0.01)
Effect_1	0.00	-0.00
	(0.01)	(0.01)
Effect_2	-0.00	-0.01
	(0.01)	(0.01)
Effect_3	-0.00	-0.00
	(0.01)	(0.02)
Effect_4	0.00	0.00
	(0.01)	(0.01)
Effect_5	-0.00	-0.00
	(0.01)	(0.01)
Effect_6	0.00	0.00
	(0.01)	(0.01)
Effect_7	0.03	0.02
	(0.02)	(0.02)
Effect_8	0.02	0.02
	(0.01)	(0.01)
Effect_9	0.01	0.01
	(0.02)	(0.02)
Effect_10	0.05***	0.05***
	(0.02)	(0.02)
Effect_11	0.08***	0.08***
	(0.01)	(0.02)
Effect_12	0.06***	0.05***
	(0.01)	(0.02)
Effect_13	0.05***	0.05***
	(0.01)	(0.01)
Effect_14	0.03	0.03
	(0.03)	(0.03)
Effect_15	0.07*	0.06
	(0.04)	(0.04)
Effect_16	0.07**	0.06**
	(0.03)	(0.03)
Effect_17	0.11***	0.10***
	(0.02)	(0.02)
Effect_18	0.08***	0.07***
	(0.01)	(0.01)
Effect_19	0.12***	0.12***
	(0.02)	(0.02)
Effect_20	0.09***	0.09***
	(0.01)	(0.01)
Country FE	✓	✓
Year FE	✓	✓
Control Var.		✓

Notes: Staggered difference-in-differences with CH estimator (de Chaisemartin and D'Haultfœuille 2020). Controls include *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*.

D.3 Share of High-prestige Female Ministers

I do not observe a comparable effect for high-prestige positions, such as finance and foreign affairs, which are notable for their high visibility and considerable influence over policy decisions (Nyrup et al. 2024) (see Figure A5). First, I focus on the CS estimates (blue-colored hollow diamond marker) due to the violations of parallel trends assumption over numerous pretreatment periods in the case of the CH estimates. Figure A5 shows that the ATT estimates are positive but not distinguishable from zero for most years during the post-reform period for both unconditional and conditional parallel trends. While the estimates are marginally statistically significant for a few years, I do not find strong evidence in favor of the positive effects of gender quotas on female representation in high-prestige portfolio positions.[1] Taken together, the staggered DiD results imply the positive effects of effective gender quotas on the female minister share in cabinets but not in high-prestige portfolio positions.

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[1]Specifically, the CS estimates are statistically significant at $t = 1, 3, 6, 10$ for unconditional parallel trends and at $t = 10, 11, 16, 18$ for conditional parallel trends at the conventional level.
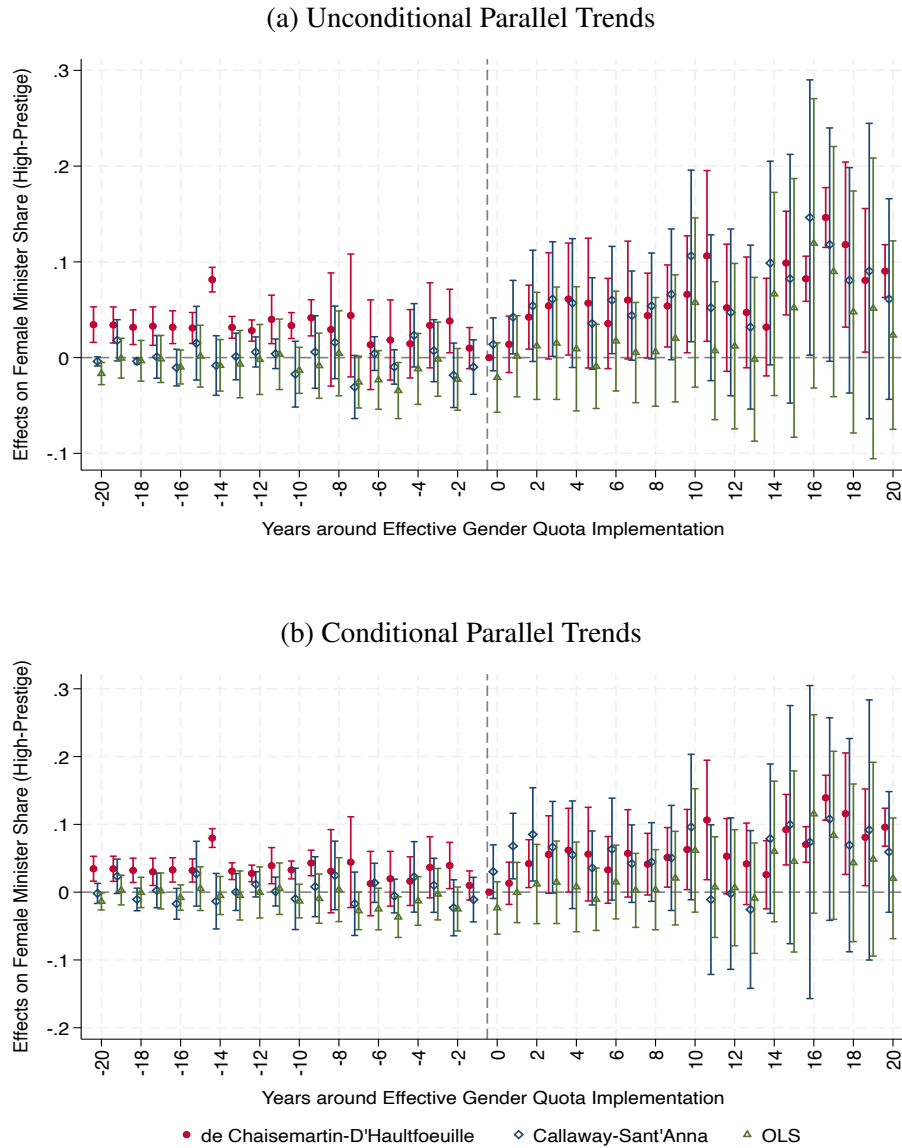
Figure A5: Effects of Effective Legislative Gender Quota on Share of Female Ministers in High-Prestige Portfolios

Notes: The outcome variable is the share of female ministers in high-prestige portfolio ministerial positions, such as finance and defense. The figure shows point estimates and 95% confidence intervals from 3. Panel A is without controls; Panel B includes *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*. CH estimates (de Chaisemartin and D'Haultfœuille 2023) are denoted by solid circle markers in red. CS estimates (Callaway and Sant'Anna 2021) are denoted by hollow diamond markers in blue, using doubly robust inverse probability weighting, and observations never treated and those not yet treated as control. OLS estimates are denoted by hollow triangle markers in green.

E   Robustness Check

I use an alternative outcome–the weighted share of female ministers by portfolio prestige–and find that the main results remain robust (see Figure A6).[2] To address concerns about the measurement of democracy, I employ four alternative variables in addition to the V-DEM measure (Teorell et al. 2019): the Polity IV index (Marshall et al. 2019), Cheibub et al. (2010), Boix et al. (2013), and the Stock of Polyarchy (Nyrup et al. 2024). Figures A7 and A8 confirm the robustness of the results.

Finally, I rerun the analysis excluding the parliamentary system countries and find that the main results are robust. Specifically, the alternative sample excludes countries with a parliamentary system in place for more than 90% of the time where the parliamentary system binary indicator is from the CHISOLS dataset (Mattes et al. 2016). These 24 parliamentary system countries are: Australia, Belgium, Botswana, Canada, Czechia, Denmark, Estonia, Germany, Greece, India, Israel, Italy, Jamaica, Japan, Latvia, Mauritius, Montenegro, the Netherlands, New Zealand, Norway, South Africa, Sweden, Trinidad and Tobago, and the United Kingdom.

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[2]See more details in Section A.2.

E.1 Alternative Outcome

(a) Unconditional Parallel Trends

● de Chaisemartin-D'Haultfoeuille   ◇ Callaway-Sant'Anna   △ OLS
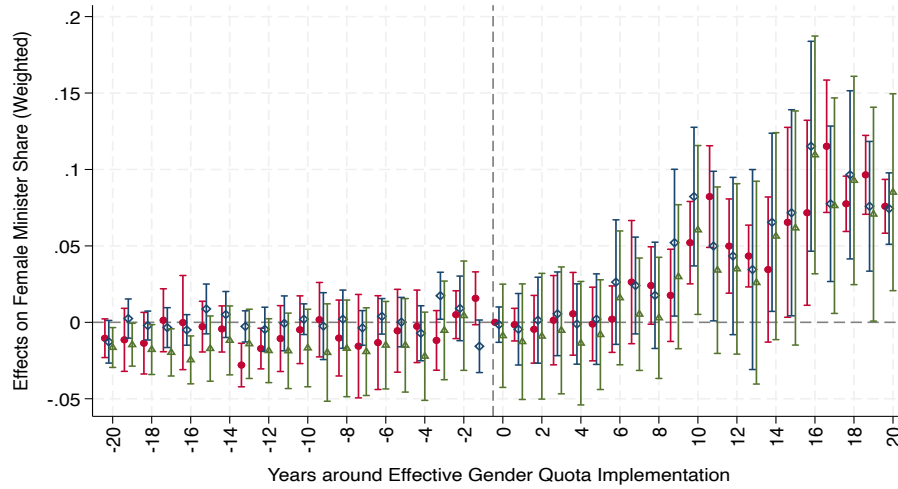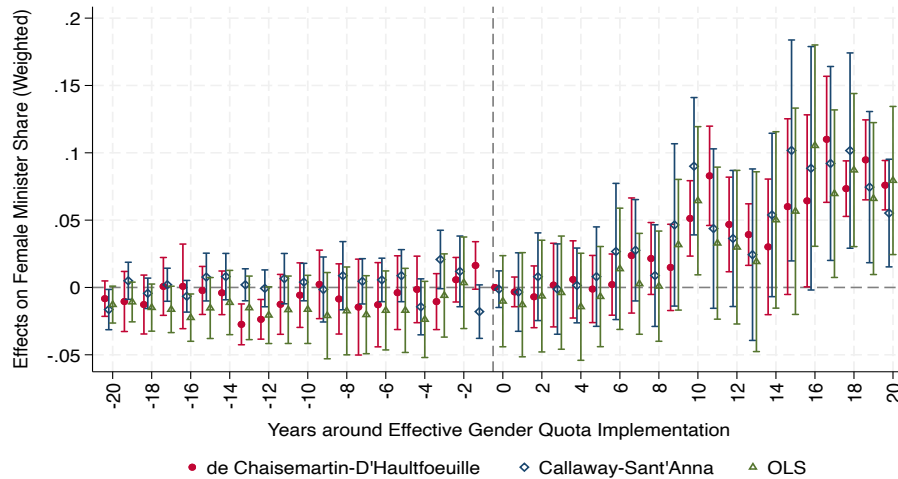
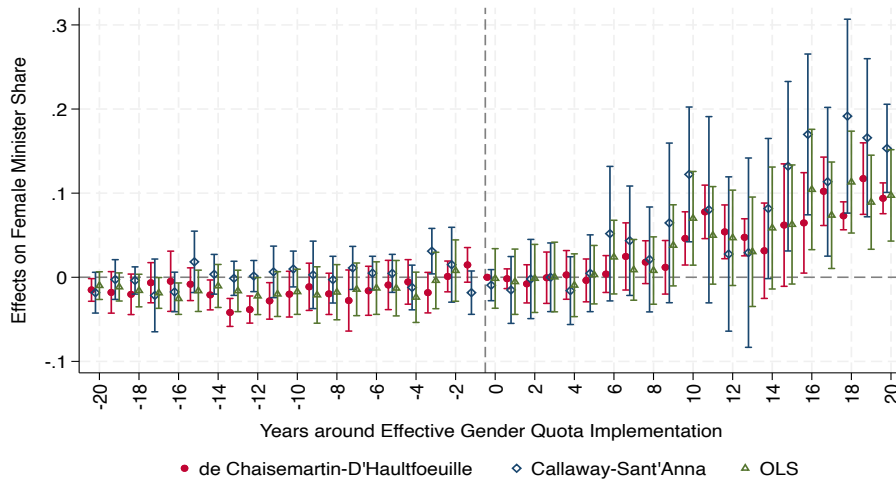(b) Conditional Parallel Trends

Figure A6: Effects of Effective Legislative Gender Quota on Weighted Share of Female Ministers

Notes: The outcome variable is the share of female ministers in government cabinets weighted by portfolio prestige (Nyrup et al. 2024). The figure shows point estimates and 95% confidence intervals from the event study model specification. Panel A is without controls; Panel B includes *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*. CH estimates (de Chaisemartin and D'Haultfœuille 2023) are denoted by solid circle markers in red. CS estimates (Callaway and Sant'Anna 2021) are denoted by hollow diamond markers in blue, using doubly robust inverse probability weighting, and observations never treated and those not yet treated as control. OLS estimates are denoted by hollow triangle markers in green.
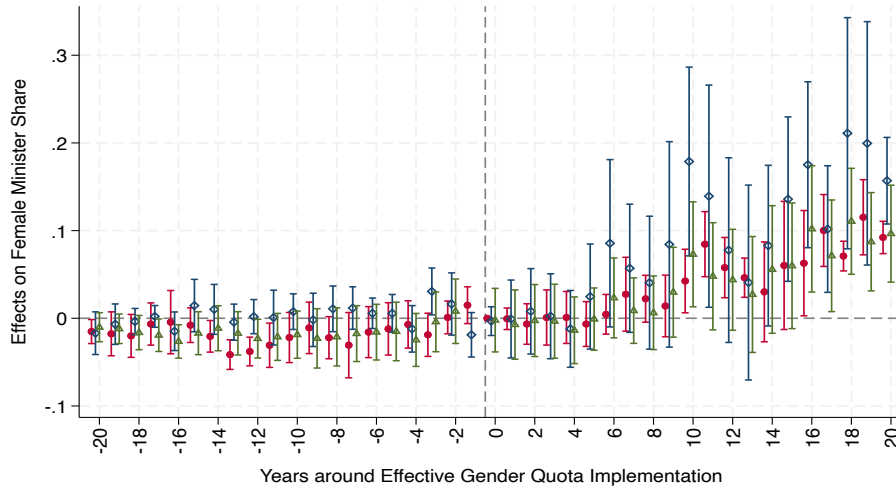
E.2 Alternative Democracy Measurement
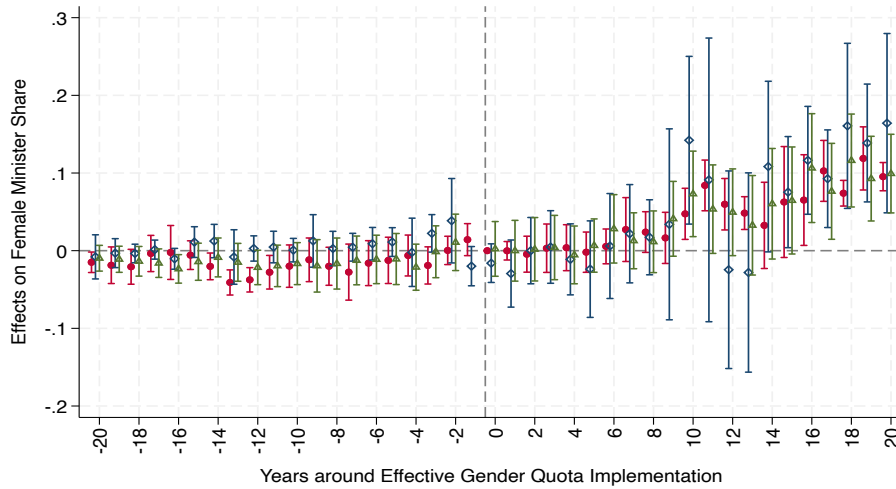
(a) Polity index (Marshall et al. 2019)

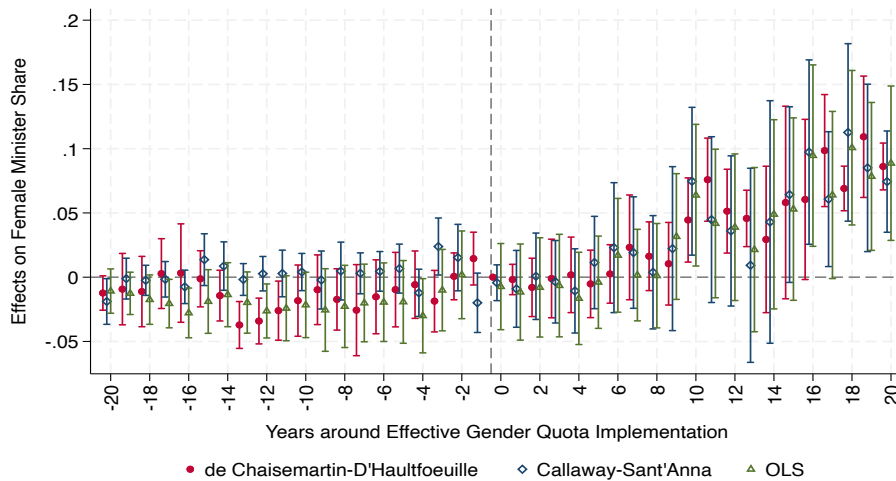● de Chaisemartin-D'Haultfoeuille   ◇ Callaway-Sant'Anna   ▲ OLS

(b) Cheibub et al. (2010)

Figure A7: Effects of Effective Legislative Gender Quota using Alternative Democracy Measurement I

Notes: The outcome variable is the share of female ministers in government cabinets weighted by portfolio prestige (Nyrup et al. 2024). The figure shows point estimates and 95% confidence intervals from the event study model specification. Panel A is without controls; Panel B includes *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*. CH estimates (de Chaisemartin and D'Haultfœuille 2023) are denoted by solid circle markers in red. CS estimates (Callaway and Sant'Anna 2021) are denoted by hollow diamond markers in blue, using doubly robust inverse probability weighting, and observations never treated and those not yet treated as control. OLS estimates are denoted by hollow triangle markers in green.

(a) Boix et al. (2013)

● de Chaisemartin-D'Haultfoeuille   ◇ Callaway-Sant'Anna   ▲ OLS

(b) Stock of polyarchy with 95% depreciation rate (Nyrup et al. 2024)

Figure A8: Effects of Effective Legislative Gender Quota using Alternative Democracy Measurement II

Notes: The outcome variable is the share of female ministers in government cabinets weighted by portfolio prestige (Nyrup et al. 2024). The figure shows point estimates and 95% confidence intervals from the event study model specification. Panel A is without controls; Panel B includes *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*. CH estimates (de Chaisemartin and D'Haultfœuille 2023) are denoted by solid circle markers in red. CS estimates (Callaway and Sant'Anna 2021) are denoted by hollow diamond markers in blue, using doubly robust inverse probability weighting, and observations never treated and those not yet treated as control. OLS estimates are denoted by hollow triangle markers in green.

E.3 Alternative Sample

(a) Unconditional Parallel Trends

- de Chaisemartin-D'Haultfoeuille ◇ Callaway-Sant'Anna △ OLS
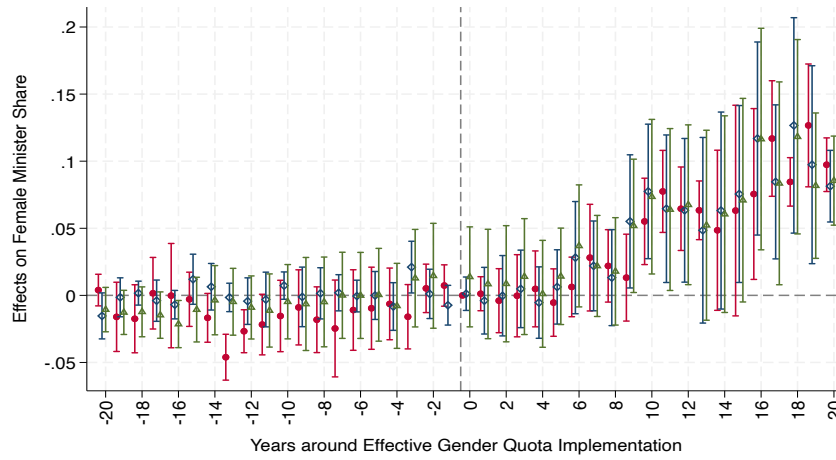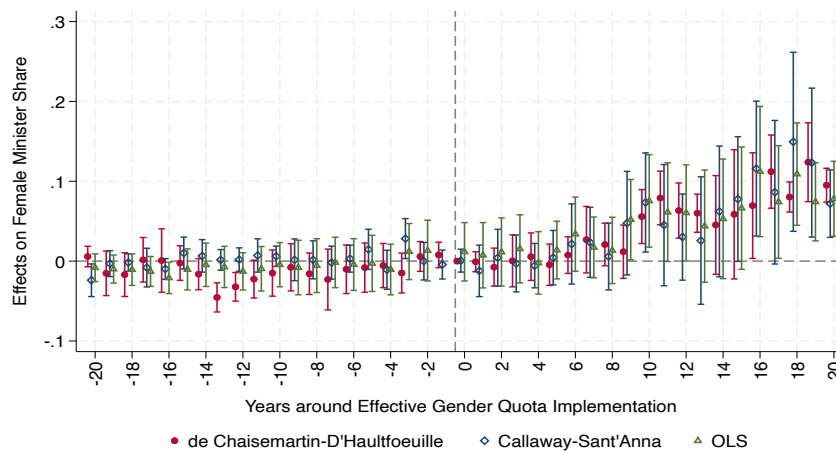
(b) Conditional Parallel Trends

Figure A9: Effects of Effective Legislative Gender Quota on Share of Female Ministers (without Parliamentary System Countries)

Notes: The outcome variable is the share of female ministers in government cabinets. The figure shows point estimates and 95% confidence intervals from the event study model specification. Panel A is without controls; Panel B includes *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*. CH estimates (de Chaisemartin and D'Haultfœuille 2023) are denoted by solid circle markers in red. CS estimates (Callaway and Sant'Anna 2021) are denoted by hollow diamond markers in blue, using doubly robust inverse probability weighting, and observations never treated and those not yet treated as control. OLS estimates are denoted by hollow triangle markers in green. The sample excludes countries with a parliamentary system in place for more than 90% of the time (Mattes et al. 2016). These 24 parliamentary system countries are: Australia, Belgium, Botswana, Canada, Czechia, Denmark, Estonia, Germany, Greece, India, Israel, Italy, Jamaica, Japan, Latvia, Mauritius, Montenegro, the Netherlands, New Zealand, Norway, South Africa, Sweden, Trinidad and Tobago, and the United Kingdom.

F   Effects on Ministerial Competence and Ethnic Diversity

Table A12: Effects of Legislative Gender Quota on Ministers' Education

Outcome	Share of Ministers with			
	High School	College Deg.	Graduate Deg.	Western Edu.
	(1)	(2)	(3)	(4)
Panel A. All ministers				
Gender Quota	0.00	0.16**	0.23	0.14***
	(0.01)	(0.07)	(0.14)	(0.04)
Panel B. Male ministers only				
Gender Quota	0.00	0.17**	0.26	0.15***
	(0.01)	(0.07)	(0.17)	(0.04)
Panel C. Female ministers only				
Gender Quota	-0.02*	-0.02*	0.02	0.20
	(0.01)	(0.01)	(0.28)	(0.13)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Control Var.	✓	✓	✓	✓
No Quota Mean	0.99	0.93	0.57	0.63
R^2	0.22	0.43	0.71	0.67
N	682	682	682	654

Notes: Two-way fixed effects OLS estimation. Outcome is the share of ministers with (1) a high school diploma or higher, (2) a college degree or higher, (3) a graduate degree, and (4) Western tertiary education. Sample is limited to 14 African countries from 1966 to 2015. Country- and year-fixed effects are included. Controls include *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*. Note the caveat that the female ministers only sample is smaller than the full sample. Standard errors are clustered at the country level.

Table A13: Effects of Legislative Gender Quota on Ministers' Prior Career Experience

Outcome	Share of Ministers with			
	Legislator Exp.	Minister Exp.	Central Gov.	Local Gov.
	(1)	(2)	(3)	(4)
Panel A. All ministers				
Gender Quota	0.27***	0.02	0.03	0.01
	(0.06)	(0.05)	(0.03)	(0.02)
Panel B. Male ministers only				
Gender Quota	0.23***	-0.06	0.02	-0.03
	(0.06)	(0.10)	(0.03)	(0.02)
Panel C. Female ministers only				
Gender Quota	1.33***	0.52***	0.15	0.28
	(0.21)	(0.15)	(0.22)	(0.17)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Control Var.	✓	✓	✓	✓
No Quota Mean	0.25	0.16	0.26	0.07
R^2	0.74	0.59	0.76	0.45
N	684	684	684	684

Notes: Two-way fixed effects OLS estimation. Outcome is the share of ministers with (1) pre-appointment legislative experience, (2) minister experience, (3) central government work experience, and (4) local government work experience (top-ranking positions in the case of 3 and 4). Sample is limited to 14 African countries from 1966 to 2015. Country- and year-fixed effects are included. Controls include *Population*, *GDP pc*, *GDP growth rate*, *Female leader*, and *Level of Democracy (V-DEM)*. Note the caveat that the female ministers only sample is smaller than the full sample. Standard errors are clustered at the country level.

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