# Consolidating Progress: The Selection of Female Ministers in Autocracies and Democracies 

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#### Abstract

$T$Though governments historically have been a men's club, women are increasingly gaining access. We argue that democratic institutions are important drivers of women's inclusion in government. This stems from the rationales of autocratic versus democratic leaders when selecting ministers. Autocrats fear a coup by inner-circle elites, who are mostly men, incentivizing them to assign ministerial positions as co-optation. In contrast, democratic leaders are accountable to the citizenry through elections and must satisfy increasing demands for gender equality. Furthermore, we argue that it is historical experience with democracy that matters, rather than the level, as it takes time to create an even playing field, change attitudes, and generate trust in democracy. To support this, we contribute with the first study using the most comprehensive dataset, WhoGov, on women's access to cabinets. Overall, we show that democracy is a process that gradually enables women to enter the highest echelons of power.


## INTRODUCTION

0ne of the most remarkable political developments over the last century has been the increase in women who hold political office. At the executive level, the average share of women in cabinets worldwide increased from $1 \%$ in 1966 to $23 \%$ in 2021. There is, on average, greater gender balance in cabinets in democratic governments than in their autocratic counterparts, but progress has been uneven across time and place (Nyrup and Bramwell 2020). This raises the question: do democratic institutions aid women in accessing the most important political offices?

The literature has yet to offer a clear answer as to whether democratic institutions support women attaining positions of formal political power. While some scholars see democratization as an opportunity for female advancement in politics and find that democracy promotes women (Arriola and Johnson 2014; Lindberg 2004; Rai 1994), others find ambivalent results (Donno and Kreft 2019; Htun and Weldon 2012; Stockemer 2017; Stockemer and Kchouk 2017). Others have pointed to the lackluster performance of many emerging democracies and the fact that several

[^0]autocracies, such as Uganda and Rwanda, lead in the descriptive advancement of women into politics (Bauer 2012; Blankenship and Kubicek 2018; Donno, Fox, and Kaasik 2021). This article contributes to this discussion by arguing that a country's historical experience with democratic institutions increases women's access to government.

The cabinet is a compelling level for comparative analysis relative to other levels of political office. An explanation for the inconclusive results in extant crosscountry studies focusing on national legislatures could be the varied role of legislative members across countries. Many autocracies have "rubber-stamp" legislative assemblies where members have limited influence (Bjarnegård and Melander 2013; Truex 2014). On the other hand, cabinet members hold significant decisionmaking power in most, if not all, countries and thus are more comparable across regimes. Furthermore, cabinets provide a distinct insight into the composition of power in the highest echelons of government. Even when democratic institutional features such as the expansion of the electorate are introduced, cabinets can function as change-resistant, insulated centers of power upholding legacies of social exclusion (Albertus and Menaldo 2018). Lastly, there has been comparatively less research on women's access to government positions due to, until recently, little available data. We utilize a new dataset, WhoGov, to fill this gap (Nyrup and Bramwell 2020).

We base our argument on a new theoretical framework of gender and ministerial selection across regime types. Following Norris (1987; 1997), EscobarLemmon and Taylor-Robinson (2005), and Bego (2014), we divide the cabinet recruitment market into supply and demand dynamics. In this framework, the pressures for and against women's representation in the
cabinet can either come from the preferences or strategic considerations of the government leader (i.e., the demand side) or the gender composition of potential ministerial candidates (i.e., the supply side). We assume that the central goal of leaders is to stay in power. From there, different political regimes shape the ministerial selection incentives of leaders.

For autocratic leaders, staying in power is a game of minimizing threats from their inner circle and outside influences (Geddes, Wright, and Frantz 2018; Svolik 2012). Autocratic leaders fear being overthrown in a coup, leading them to bias cabinet appointments toward inner-circle elites who can potentially form coup coalitions. Inner-circle elites in autocracies are typically drawn from male-dominated organizations that can credibly threaten the leader, such as the military, authoritarian parties, and to a lesser extent, royal families (Gandhi 2008; Geddes, Wright, and Frantz 2018). As a result, we would expect governments in autocracies to be predominantly male.

For democratic leaders, staying in power is determined by winning elections. These leaders usually choose cabinet ministers from among members of parliament, party members, business leaders, or technocrats with expert knowledge. These professions are more open to change than the elite groups in autocracies, offering women more pathways to power. Furthermore, feminist activists shift public perceptions of legitimacy to incorporate the criteria of women's political inclusion, inducing leaders to use their power to incorporate more women into the executive (Annesley, Beckwith, and Franceschet 2019; Franceschet, Annesley, and Beckwith 2017). When accountability to the electorate is institutionalized, female politicians provide an electoral advantage for democratic governments (Dolan 2010; Huddy and Terkildsen 1993; Schwarz and Coppock 2022). Thus, democracies hold more favorable conditions for women's promotion to cabinet positions through both the public demand for gender-balanced cabinets and the underlying composition of the groups that typically make up the cabinet.

However, these rationales are based on two ideal types of regimes. In reality, most regimes are somewhere in between. Furthermore, when democracy is first implemented, demand and supply forces are tilted to favor the original, male-dominated elite.

On the demand side, feminist mobilization of public support for women's political inclusion (Annesley, Beckwith, and Franceschet 2019) is a process that gains potency as democratic liberties, such as freedom of expression and freedom of organization, enable women to express their preferences, organize, and connect to networks (Kuran 1997; Rai 1994; Wang et al. 2017). On the supply side, former authoritarian elites play a significant role after the transition to democracy (Albertus and Menaldo 2018), often securing positions of political power that limit the ability of a new political elite to gain power (Miller 2021). In addition, the emergence of a pipeline of qualified women "ministrables" (Annesley, Beckwith, and Franceschet 2019, 212-36) is also gradual. Many women will already have made life choices and arrangements that maximize their personal interests
under the previous autocratic regime. Thus, changes may be better observed over time.

Therefore, we argue that the effect of democracy on gender balance in government is better captured as a historical phenomenon taking place over the long run rather than as a level at a given point in time (Gerring et al. 2020; Gerring, Thacker, and Alfaro 2012). As a result, we follow Gerring, Thacker, and Alfaro (2012) in operationalizing democracy as a "stock" variable, in essence adding up the years with which a country has had experience with democracy.

We test our hypothesis using a new dataset of cabinet ministers worldwide, WhoGov, which has yearly data on cabinet compositions from 1966 to 2021 (Nyrup and Bramwell 2020). ${ }^{1}$ We find that democracies, on average, have approximately twice the share of women in cabinet compared with autocracies. However, using fixed effects, we also show that the pattern of gender balance is not explained by the level of democracy per se. Instead, when we operationalize democracy as a stock variable and thereby as a cumulative process, we find a strong association between democracy and the share of women ministers. The results are robust to a range of extra tests and controls, such as women's empowerment or the level of development, ruling out the possibility that the results are an artifact of modernization (Lipset 1959).

Furthermore, we test the implications of our model and show that only measures of real electoral competition (such as clean elections) are related to an increase of women in cabinet and that there is no association for more "hollow" measures (such as the mere existence of elections). In addition, we find that the effect sizes are larger for non-OECD countries, poorer countries, and in more recent years, which suggests that our theory better captures developments in countries that tend to receive less attention in the literature. In sum, we show that democratization does not instantly or deterministically empower women. Instead, it is a system that enables more women to enter the highest echelons of power gradually.

The article contributes to the literature on regime types and the study of politics and gender. We leverage a new dataset, WhoGov, which has global data on governments over a 55-year period (Nyrup and Bramwell 2020), resulting in the most granular analysis of women's access to governments to date. Our contributions, however, go beyond using a new dataset. There is a rich and ongoing discussion on the advantages of democracy relative to autocracy in areas such as economic growth (Acemoglu et al. 2019; Przeworski et al. 2000) and human development (Gerring, Thacker, and Alfaro 2012; Sen 2001). We contribute to this literature by arguing that democratic experience is one of the main drivers for allowing women to access political power at the highest levels. This is important not only for descriptive reasons but also for policy outcomes. Female politicians tend to care more about gender

[^1]equality and gendered public goods (Chattopadhyay and Duflo 2004; Lovenduski and Norris 2003), be less corrupt when in public office (Bauhr, Charron, and Wängnerud 2019; Dollar, Fisman, and Gatti 2001), are more likely to fulfill policy promises (Homola 2021), and are linked to economic growth (Dahlum, Knutsen, and Mechkova 2022). Furthermore, research shows that female political leaders inspire political interest among young women (Campbell and Wolbrecht 2006) and empower female legislators (Blumenau 2021; Wahman, Frantzeskakis, and Yildirim 2021).

## PREVIOUS RESEARCH ON THE SELECTION OF FEMALE POLITICIANS ACROSS AUTOCRACIES AND DEMOCRACIES

Does democracy promote women into holding political office? History does not offer a clear answer. From ancient Athens (Osborne 2010) to early modern democracies in Europe, and the Americas (Caraway 2004), women were initially barred from formally participating in politics. However, women made significant gains with the opening of political forums by the end of the Second World War (Paxton 2000).
The advancement of gender balance in politics has not been a solely democratic feature. While democratic institutions sustain the advancement of women through solidifying norms of gender balance for democratic legitimacy (Annesley, Beckwith, and Franceschet 2019), factors such as communist ideology (Harsch 2014) and external pressure from international institutions have led to autocratic regimes extending positions of power to women as well (Donno, Fox, and Kaasik 2021; Fallon, Swiss, and Viterna 2012; Kroeger and Kang 2022). The role of women in autocratic cabinets has been varied: while dictatorships drew the political elite heavily from maledominated organizations such as the military (Gandhi 2008; Geddes, Wright, and Frantz 2018), the rise of electoral or competitive authoritarianism has seen an increase in female political participation while at the same time witnessing an eschewing of fair elections (Bauer 2012; Blankenship and Kubicek 2018; Donno, Fox, and Kaasik 2021; Kroeger and Kang 2022). Thus, it is unclear whether democracy promotes women into cabinet.
One reason for this may be significant variation in how democracy and women's political empowerment are discussed and operationalized. Regime type is either operationalized as a binary category (e.g., Stockemer 2017) or as existing on a continuum that runs from ideal-type autocracies to ideal-type democracies (e.g., Arriola and Johnson 2014). While many studies have posited that democracy impacts women's representation, whether positively or negatively, autocracy is often treated as a residual category rather than a distinct political regime (e.g., Paxton, Hughes, and Painter 2010). We address this lacuna by theorizing differences in elite-level political competition between the two regimes, as dealt with extensively in the
political regimes literature (e.g., Geddes, Wright, and Frantz 2018; Wintrobe 2000).

While many scholars of democratization are cognizant of the fact that empowering hitherto marginalized groups such as women is unlikely to happen overnight (e.g., Dahl 1971; Gerring, Thacker, and Alfaro 2012; Rai 1994), many studies on women's representation assume that the effect of democracy is the same in newly democratizing countries as it is in consolidated democracies (e.g., Arriola and Johnson 2014; Stockemer 2017). By contrast, studies that treat democracy as a time-varying phenomenon find more consistently positive and significant results (Fallon, Swiss, and Viterna 2012; Jacob, Scherpereel, and Adams 2014; Paxton, Hughes, and Painter 2010). We provide theoretical context as to why this may be the case, positing that path dependencies from the previous authoritarian regime exist, which structurally hinder the emergence of new female elites.

While we locate our contribution in the gender and political power-sharing literature, our theoretical framework intersects with deeper theoretical insights found within feminist insights on gender, critical views of democratization, and epistemic justice (Fricker 2007). We contend, much like Rai (1994), that democracy helps women identify exclusion from power as an injustice that, consequently, needs to be addressed through political processes which aim to dismantle entrenched patriarchal norms. Insights from the regional- and country-level studies of democracies have convincingly shown the importance of government formation processes and elite actors (Krook and O'Brien 2012), and how democratic competition for legitimacy can gradually build a "concrete floor" of gender balance that is difficult to reverse once established (Annesley, Beckwith, and Franceschet 2019; Davis 1997).

Generally, political office-holding at the national level can be distinguished between two branches or levels of representation: legislative and executive. While both forms of political power are essential to study, we propose that the executive level is a better comparative measure of women's political empowerment for two reasons. First, cabinets play a more consistent role across political regimes. Legislatures often vary dramatically in the level of autonomy enjoyed by the executive, with some acting as rubber stamps for decisions made by the executive, whereas others have the power to remove the political leader (Bjarnegård and Melander 2013; Truex 2014). Second, cabinet appointments can be seen as more prized by political elites when compared with legislative seats. The individuals appointed to the cabinet draw considerable public attention, make important decisions, and, in most cases, manage large budgets.

However, due to limited data, econometric analyses of cabinet appointments are less developed than those of legislative seats. As a result, such analyses are either purely cross-sectional (Krook and O'Brien 2012), collected at 5-year or irregular intervals (Jacob, Scherpereel, and Adams 2014; Stockemer 2017), limited to specific regions (Arriola and Johnson 2014; Claveria

2014; Escobar-Lemmon and Taylor-Robinson 2005), include only democracies (Claveria 2014; EscobarLemmon and Taylor-Robinson 2005), or focus on specific portfolios (Barnes and O'Brien 2018). By contrast, we leverage yearly data on a globally representative sample of countries. In doing so, we can make more credible cross-sectional and temporal inferences about the relationship between democracy and female participation in cabinets compared with previous studies.

## A THEORY OF GENDERED CABINET SELECTION ACROSS POLITICAL REGIMES

Despite the far-reaching research on women in politics, we have limited knowledge about whether democracy supports women's access into government. We address this research gap by proposing and testing an original theoretical framework that argues that democratic institutions, over time, tend to foster more opportunities for the inclusion of women in the cabinet.

The gender composition of cabinets is determined by the processes of supply and demand, as proposed by previous studies of ministerial candidate selection (e.g., Escobar-Lemmon and Taylor-Robinson 2005; Norris 1987; 1997). The demand side is defined by the incentives of the leader, who selects the cabinet. The supply side consists of the pool of potential ministers.

The primary objective of the leader is to survive in office (De Mesquita et al. 2005). ${ }^{2}$ However, the modality of political competition fundamentally differs in autocracies compared with democracies (Svolik 2012), creating different incentives for autocratic and democratic leaders.

Using a Dahlian approach, we define democracy as a political regime where contestation in the form of free and fair elections occurs in the context of widespread public participation (Dahl 1971). This shapes the composition of the groups to whom the political elite are held accountable. The political elite in autocracies is accountable to a narrow winning coalition with whom they share power (De Mesquita et al. 2005; Svolik 2012), whereas the political elite in democracies is accountable to their party, coalition partners, and, ultimately, the broader electorate, thus adding the importance of the general public's demands (Annesley, Beckwith, and Franceschet 2019; Krook and O'Brien 2012; Randall 1982; Strom, Budge, and Laver 1994; Tremblay 2012).

To contextualize our argument, we start the discussion with two ideal types of regime: (1) an autocracy, where elections either are not held or are so flawed that

[^2]the results are essentially meaningless, causing the opposition to have no institutionalized influence, and (2) a democracy with free and fair elections, universal suffrage, freedom of expression, and a functioning opposition.

## The Inclusion of Women in Cabinets under Autocracy

We start with the ideal-type autocracy. Since elections only serve as pro forma acclamations, political competition is characterized by an evolving balance of power under conditions of anarchy (Svolik 2012). Therefore, the primary threats to the ruler come through extralegal methods, either from the regime in the form of coups or from the broader civil society in the form of revolutions (De Mesquita et al. 2005; Geddes, Wright, and Frantz 2014; Svolik 2012).

We expect the demand for women in cabinet to be low in autocracies. This is not to say that the underlying gender-related attitudes of the general public are antagonistic toward women. Instead, private attitudes are effectively crowded out by other issues that relate more directly to the leader's survival. Therefore, autocrats must first and foremost appoint individuals who can help them survive threats.

Research in authoritarian politics has firmly established that coups by elites represent the most common threat that autocrats face (Svolik 2012). To keep the elite under control, the autocrat has an incentive to appoint loyal individuals (Egorov and Sonin 2011) and co-opt potentially dangerous groups into organizations such as the cabinet, legislatures, and the party (Arriola, DeVaro, and Meng 2021; Arriola and Johnson 2014; Blaydes 2010; De Mesquita et al. 2005; Gandhi 2008; Lust-Okar 2006).

The autocrat can avoid a revolution by using repression (Gerschewski 2013). This causes them to rely on people who can keep "subversive" parts of the population subdued (Scharpf and Gläßel 2020). This often involves using violence on a mass scale to subdue real or perceived enemies of the revolution (Kim 2018). Due to historical processes and discrimination, men may be more readily available to occupy positions based on perceptions of credible threats of violence, making them more suitable (in the eyes of the leader) for governance in a repressive regime.

By contrast, organizations in which women have been more prominent, such as popular movements (Beckwith 2001), typically exert power through nonviolent means and so cannot ransom the autocrat to the same degree. While we do not claim that women are intrinsically less violent than men, we contend that social pressures tend to restrict women from using violent tactics to achieve political ends to a greater degree than men (Best, Shair-Rosenfield, and Wood 2019). Without being able to threaten violence credibly, we posit that women will be unable to extract concessions from the leader under an ideal-type autocracy. Additionally, public feminist movements are less prevalent to begin with in autocracies, given preference
falsification of private attitudes in the face of social pressures (Kuran 1997).
Nonetheless, autocrats can have reasons to pick women to serve in the cabinet. They may want to positively signal to international donors, lenders, and investors by appointing women (Donno, Fox, and Kaasik 2021; Fallon, Swiss, and Viterna 2012; Kroeger and Kang 2022). Furthermore, as we argue later on, autocrats will have incentives to pick female leaders from popular movements to incorporate those groups into their support coalition if the regime evolves toward a more competitive form of authoritarianism. Despite these reasons, there is little pressure on the autocrat to select female ministers on the whole.
The main sources of potential cabinet ministers in autocracies are usually groups of inner-circle elites since these groups have resources and are willing to use violence to unseat the leader through a coup. Innercircle elites typically come from the military, the ruling party, or the royal family (Barnes and O'Brien 2018; Gandhi 2008; Geddes, Wright, and Frantz 2018), all groups that are predominantly male. The military is the clearest example of an organization in which men dominate the upper echelons and upon which the autocrat relies to keep the population in line through repression (Barnes and O'Brien 2018; Svolik 2012).
Autocratic parties are designed to extend autocratic power and durability (Geddes 1999). They can do so by improving elite cohesion, monitoring citizens, providing patronage, co-opting opposition groups, and funneling state benefits to the elite (Magaloni and Kricheli 2010; Miller 2020; Slater 2010). Therefore, they serve a very different purpose compared with parties in democracies where they are vehicles for electoral competition, meaning that parties need to be responsive and help mobilize voters (Aldrich 1995; Downs 1957). As a result, autocratic parties are less susceptible to change, and promotion within the party will be based on different criteria such as loyalty to the leader, willingness to commit violence, participation in corruption, and, to a lesser degree, competence (Egorov and Sonin 2011; Scharpf and Gläßel 2020). Autocratic parties have, therefore, in many cases devolved into de facto old boys' clubs. While women can join authoritarian parties, they are often placed in legislative positions with little real influence or pigeonholed into gendered roles (Bjarnegård and Melander 2013; Fallon, Swiss, and Viterna 2012; Harsch 2014; Stockemer 2017; Tripp 2001).
Dynastic ties have been shown to help women access political office (Baturo and Gray 2018). This could be a factor in monarchies, where bloodline trump social forces, and the supply pool, therefore, are primarily the leader's family. However, most of the world's remaining monarchies are located in Middle Eastern countries (Gerring et al. 2021), where many regimes actively promote highly patriarchal norms, with some even continuing to bar women from public office at the turn of the century (Norris and Inglehart 2001). As a result, it is reasonable to assume that the supply pools of ministerial candidates in autocracies are overwhelmingly male.

## The Inclusion of Women in Cabinets in Democracies

In the ideal-type democracy, power is transferred according to the results of free and fair elections, and accountability is institutionalized (e.g., Dahl 1971). ${ }^{3}$ Therefore, democratic leaders need to pick cabinet members who can contribute toward re-election, which may pressure the leader to select more women for four reasons.

First, the establishment of civil liberties that accompany democratization provides opportunities to politicize women's interests. The full inclusion of women into formal democratic institutions requires a shift whereby women's interests, previously constrained in the private sphere, are imagined as a matter of rights in the public political sphere (Rai 1994). Civil rights counter the social pressures that lead to the falsification of true preferences (Kuran 1997), enabling feminist organizing (Wang et al. 2017).

Second, the entrepreneurial force that materializes this fuel of (less organized) preferences is feminist activists (Annesley, Beckwith, and Franceschet 2019). Scholars studying cabinet selection processes in democracies demonstrate how gender in cabinets gains electoral salience as gender balance gets established as part of public perceptions of representational legitimacy (Annesley, Beckwith, and Franceschet 2019; Franceschet, Annesley, and Beckwith 2017, 235). While we do not suggest that democracies deterministically increase female cabinet ministers, we argue akin to Annesley, Beckwith, and Franceschet (2019) that democratic elections establish "concrete floors" of cabinet participation through which incumbent and opposition leaders face punishment at the polls should they fall short. Moreover, as Annesley, Beckwith, and Franceschet (2019) and other authors (e.g., Bauer and Darkwah 2022) also demonstrate, this concrete floor tends to rise as contenders for office propose more gender-inclusive cabinets. While democracies may be limited in enabling constituent principals to monitor their representative agents, they can facilitate the struggle for collective principles such as inclusion (Hayward 2007).

Third, once selectors use their power to include more women in cabinets, further electoral benefits arise in appointing women. ${ }^{4}$ Women make up around $50 \%$ of the population in all countries and, as such,

[^3]constitute the single biggest national cross-cutting cleavage (Teele 2018). A group of studies examining gender effects in more generalized candidate choice scenarios has revealed that female candidates and politicians are just as favored or slightly more favored relative to their male counterparts regardless of the gender of the respondent (e.g., Bridgewater and Nagel 2020; Dassonneville, Quinlan, and McAllister 2021; Schwarz and Coppock 2022). Furthermore, women are perceived to be more competent in areas relating to social policy (Dolan 2010; Huddy and Terkildsen 1993). A large body of research further suggests that significant differences in policy preferences exist between men and women (e.g., Aidt and Dallal 2008; Kittilson 2011) and that social policy becomes more balanced between these competing preferences when more women attain positions of political power (Atchison 2015; Clayton and Zetterberg 2018; Kittilson 2011). All this leads gender-parity cabinets to receive public praise and positive media coverage (Beckwith and Franceschet 2022).

Fourth, the portfolio specificity of cabinet positions can insulate the executive arena from some of the demand-side social expectations that hold women back in arenas such as the legislature (e.g., Dolan 2010; Huddy and Terkildsen 1993; Teele, Kalla, and Rosenbluth 2018). If gender-based social roles operate as a heuristic in the absence of candidate quality information (e.g., Alexander and Andersen 1993), the specification of portfolio and expertise in cabinet positions may dampen the relevance of social roles, stereotypes, and statistical discrimination. In fact, examining party leaders, Dassonneville, Quinlan, and McAllister (2021) find that female party leaders are more favored than their male counterparts among experienced politicians.

Overall, there are substantial reasons to expect that democratic leaders have incentives to appoint women to the cabinet. This will particularly be the case where traditional gender norms and associated constraints have declined.

We also contend that democratic institutions foster conditions that result in an increased supply of female cabinet members. Cabinet ministers in democracies are usually selected from among members of parliament, party members, business leaders, or technocrats with expert knowledge (Escobar-Lemmon and TaylorRobinson 2016). Although men have traditionally dominated these groups, they are more open to change than elite groups in autocracies, offering women more pathways to power. As a result, democracies are better than their autocratic counterparts at capturing developments at a mass level.

While democratic parties vary substantially to the degree to which they promote women (Caul 1999), all significant parties are vote-seeking organizations (Aldrich 1995; Downs 1957). ${ }^{5}$ Consequently, we expect them to be more open toward change, easier to join,

[^4]and more responsive toward pressure for including underrepresented candidates compared with their autocratic counterparts. In short, we expect that they will include women to greater degrees.

Along with joining a political party, women can also be assigned cabinet appointments based on expertise in a given subject and can thus be drawn from academia, the civil service, or third-sector charities (e.g., Tripp 2001). Over the last decades, we have seen women increasingly access the labor force and, in many places, match or surpass the educational attainment of men. We also see developments at the elite level. Countries around the world are electing an increasing number of women to their parliaments (Wängnerud 2009) and women are increasingly obtaining leadership positions in the public sector, business, and academia (Huang et al. 2020). Therefore, there is a larger share of women in the supply pool of candidates in democracies relative to their autocratic counterparts, particularly in recent years. ${ }^{6}$

Taken together, democracies hold more favorable conditions for women's promotion to cabinet positions both through the voter-derived demand for balanced cabinets and the underlying composition of societal groups that typically make up the cabinet. Our main points are summarized in Table 1.

## Transition, Consolidation, and Gender Equality

The previous sections argued that the nature of political competition in democracies should result in higher levels of female participation in government relative to autocracies. However, autocracies are increasingly adopting democratic institutions, blurring the line between the two regime types, meaning that the ideal types used to construct our theoretical argument rarely exist. Instead, we are seeing countries moving along a continuum (Levitsky and Way 2010). Furthermore, most countries have not been democratic throughout, but have instead experienced transitions from autocracy. While democratization opens a path for women to access political offices that were essentially built in their absence, new democracies and old democracies are not the same. Instead, new democracies have path dependencies from previous authoritarian regimes which hold back increased gender equality in government. We point to three factors that hold women back in new democracies.

First, a history of autocracy can depress the number of women in the pipeline to power (Lawless and Fox 2005). This is particularly challenging in new democracies where existing structures and patriarchal social norms may have stunted women's potential political careers (Lee and McClean 2022). In the early days of democracy, women will have rationally made life

[^5]TABLE 1. Demand and Supply Forces in Cabinet Selection of Female Ministers

|  | Demand | Supply |
| :--- | :--- | :--- |
| Autocracies | Low demand <br> (need loyalty, co-optation, and <br> repression) | Low supply <br> (ministers drawn from the military, the autocratic party, or the <br> family) |
| Democracies | Medium demand <br> (need good governance, popularity, and <br> representativeness) | Medium supply <br> (ministers drawn from the parliament, the democratic party, <br> business elites, or technocrats) |

choices and arrangements that maximize their interests under the old, male-centric regime. Women might have falsified private preferences due to repression (Kuran 1997), calculated that pursuing a political career is too risky, and accrued sunk costs. In addition, women may not be connected to the political networks that serve as pathways to power, and political entrepreneurs may not approach women if they are not a part of the political system (Goyal 2019). However, certain components of democracies can decrease the costs facing women. For example, freedom of expression and freedom of organization can give women opportunities to speak about their preferences and drop pretenses of preference falsification. Moreover, continued experience of democracy generates more viability and trust in the institution, resulting in more women opting for careers in politics. In addition, democratization and political change enable women's organizations to push for greater political representation at lower levels (Hughes and Tripp 2015). Thus, although women often play a significant role in democratization and women's organization is pivotal in putting pressure on the authoritarian regime, men tend to have a head start in the pipeline to power after democratization.

Second, authoritarian elites may cling to power despite democratization. Authoritarian elites often play a significant role in writing national constitutions before transitions occur in such a way that political competition is limited, albeit legally (Albertus and Menaldo 2018). Furthermore, authoritarian elites also secure positions of political power which limits the ability of a new political elite to gain power (Loxton and Power 2021; Miller 2021). A regime transition may not necessarily entail a transition of members of the elite, at least in the short run. Nevertheless, as authoritarian influence in executive politics wanes, the previous elite may give way to a new and potentially more gender-balanced elite.
Third, as the relative proportion of women increases in the pool of qualified ministerial candidates, a dynamic previously perceived as women's underrepresentation may be reappraised as the overrepresentation of relatively less talented men (Murray 2014). At the same time, voters may find it easier to punish the overrepresentation of less qualified men when the alternative (more qualified female candidates) becomes apparent. Furthermore, establishing and elevating concrete floors may reduce the political
knowledge gap between men and women, particularly among younger cohorts less affected by authoritarian legacies (Dassonneville and McAllister 2018), creating a virtuous cycle of younger voters challenging male overrepresentation in politics to a greater extent than voters of previous generations.

Consequently, democracy is, in the light of our research question, better captured as a historical phenomenon, taking place over the long run rather than as a level defined cross-sectionally (Gerring et al. 2020; Gerring, Thacker, and Alfaro 2012). Thus, we expect the closest association between regime type and gender balance in cabinets to be in a country's historical experience of democracy. As a result, we follow Gerring, Thacker, and Alfaro (2012) in operationalizing democracy as a "stock" variable, in essence adding up the years for which a country has had the experience of democracy. In summary, our main hypothesis is the following:

Hypothesis: When countries gain more experience of democracy, the proportion of women in cabinets will increase.

## DATA AND EMPIRICAL METHODS

## Measuring Women's Representation in Cabinet

To test whether democracies select more women than autocracies, we use a new dataset on cabinet members, WhoGov (Nyrup and Bramwell 2020). The dataset contains detailed information on cabinet members for every July in the period of 1966-2021 in all countries with a population of more than four hundred thousand citizens. In total, the dataset contains yearly information on 56,063 cabinet members in 177 countries, adding up to 8,814 country years, although not all are included throughout the analysis due to missingness on other variables. In addition to gender, the dataset includes information on the type of portfolio, enabling us to look at whether women gain access to highprestige cabinet positions.

Throughout the analysis, we primarily rely on the share of female cabinet members as the dependent variable. To construct this measure, we select all fullranking cabinet members and calculate the female share for every country in every year. Thus, we exclude
junior ministers, the leader herself, and noncabinet officials when constructing the measure.

While the theory focuses on the share of female ministers, we triangulate our results using two alternative measures of female representation that are sensitive to the importance of the different ministries. Thereby, we are able to show that women are also qualitatively assigned more power in democracies.

First, we calculate the share of high-prestige ministerial posts occupied by women. We use the classification included in WhoGov as a baseline. Here, portfolios are divided into three levels. High-prestige portfolios are positions distinguished in terms of their visibility and significant control over policy. The minister of defense, finance, foreign affairs, and home/interior are included in this category. This also includes the deputy prime minister and, in presidential systems, the prime minister. Ministries that control significant resources, but have lesser status, are classified as medium prestige. These are, for example, agriculture, education, and transportation. Lastly, low-prestige positions are characterized by less resources and refer to ministries like youth, culture, and sports. ${ }^{7}$ We make some exceptions to the general classification. For example, the minister of natural resources is considered highly prestigious in OPEC + countries (including former members of OPEC). For more details on the coding, see Appendix A of the Supplementary Material. If the same person controls multiple portfolios or ministries, we only include the most prestigious position.

Lastly, we create a weighted share of female ministers. We give high-prestige portfolios a score of 3 , medium-prestige portfolios a score of 2 , and lowprestige a score of 1 . Then we add all scores that are held by women in a given year and divide it by the total sum for a cabinet in a given year. An example is shown in Appendix B of the Supplementary Material.

## Measuring Democracy

There are many indexes of democracy and the choice of an index can be important for results (Gerring et al. 2020; Munck and Verkuilen 2002). We rely on the V-Dem project's Polyarchy measure, which is based on Dahl (1971) and has five components that are combined into the Polyarchy scale, which ranges from 0 (most autocratic) to 1 (most democratic). We choose this measure because it has broad coverage (covering the same period as WhoGov, 1966-2021), distinguishes between democracies and autocracies based on both the contestation and participation criteria, is continuous (since our theory perceives regime types as levels rather than binary categories), is comparatively transparent, and is gathered in a rigorous manner (Teorell et al. 2019). Furthermore, we can deconstruct the measure, allowing us to look at different components of democracy.

[^6]To ensure that our results are not driven by the choice of democracy index, we triangulate the main findings using one additional continuous measure of democracy, namely Polity (Marshall, Gurr, and Jaggers 2019), and two binary measures, namely Boix, Miller and Rosato (2013) and the Democracy-Dictatorship Index (Cheibub, Gandhi, and Vreeland 2010). The results are almost identical and can be found in Appendix C of the Supplementary Material.

To test our theory, we operationalize democracy both as a level and as a stock. Similarly to Gerring, Thacker, and Alfaro (2012), we create the stock measure of democracy by summing up each country's score from 1900 (or, if the country gained independence after the year 1900, the first year) to the given year, applying an annual depreciation rate. We mainly rely on a depreciation rate of $95 \%$, but vary it to show that the results are consistent. ${ }^{8}$ Substantively, the stock variable implies that a country's stock of democracy stretches back over time but that recent years receive more weight than distant years. We standardize the stock variable to a bound from 0 to 1 to ease interpretation and comparability. Thus, a score of 1 or close to 1 represents countries with the most democratic history, such as Sweden or Denmark, whereas the countries with a low stock of democracy, such as North Korea or Eritrea, get a score of 0 or close to 0 . In Appendix D of the Supplementary Material, we provide simulations to give the reader an impression of how the stock of democracy varies dependent on the depreciation rate.

## Estimation

The empirical analysis consists of both descriptive statistics and time-series cross-national estimations in which we regress the measures of female representation on measures of democracy, along with controls and fixed effects. We mainly focus on the determinants of the within-country variation over time in the share of female ministers, $w$, in country $c$ at date $t$ using a linear model. The estimated equation is

$$
\begin{equation*}
w_{c t}=\theta d_{c t-1}+\gamma x_{c t-1}+\mu_{c}+a_{t}+\eta_{c t} \tag{1}
\end{equation*}
$$

where $w_{c t}$ is the share of female ministers in country $c$ at year $t$. The main independent variable of interest is the lagged measure of democracy denoted by $d_{c t-1} \cdot \mu_{c}$ is a country-fixed effect, $a_{t}$ is a year dummy, $\gamma x_{c t-1}$ are other time-variant controls lagged by 1 year, and $\eta_{c t}$ is the error term. We cluster the standard errors by country to allow for arbitrary within-country correlations in the errors.

By including country and year dummy variables in all specifications, we control for fixed country characteristics, such as history and culture, which might affect the share of women in government, and global macro-trends,

[^7]such as rising levels of women's representation. In addition, we include a battery of controls. These are discussed and presented in the analysis. We refer to Appendix B of the Supplementary Material for a detailed description of each variable, Appendix E for links to all datasets used in the analysis, and Appendix F for descriptive statistics on all variables used in the analysis.

## DO DEMOCRACIES SELECT MORE FEMALE MINISTERS?

Figure 1 shows the share of women in government over time divided by regime type using the binary measure provided by Boix, Miller and Rosato (2013). In 1966, only $1 \%$ of cabinet members were women across both regime types, but the share of

FIGURE 1. Trends in the Share of Women in Cabinet
30\%
women has steadily increased since. This is particularly the case in democracies where more than a quarter of all ministers were female in 2020. The relative increase in the share of female ministers in democracies is reflected in the bottom panel of Figure 1, which shows the difference in the share of female ministers between democracies and autocracies. The gap has increased from less than 1 percentage point in 1966 to more than 10 percentage points in 2020. The growing disparity between regime types indicates that democracies are better at capturing developments favoring women at the elite level.

In the bottom part of Figure 1, we use a trichotomous regime rating that divides regimes into electoral autocracies (e.g., regimes that allow flawed multiparty elections), closed autocracies (e.g., regimes without multiparty elections), and electoral democracies (Bjørnskov and Rode 2020; Cheibub, Gandhi, and Vreeland 2010). Research has shown that electoral institutions in autocracies can be important for outcomes such as economic growth and human development (Gandhi 2008; Miller 2015). We find that electoral autocracies have higher levels of female cabinet participation than closed autocracies after 1990 but at lower levels than democracies. This indicates that if ordinary citizens participate in selecting their leaders in some way, then those leaders, to some degree, need to demonstrate that they represent a significant cross-section of the population to justify
their rule. Therefore, and in line with our theory, pressure to select more women in cabinet has a larger impact on the share of women in cabinet in electoral autocracies than in closed autocracies.

However, the descriptive analysis does not tell us whether more women are included in cabinet as a function of democracy or whether some countries inherently are both more democratic and have a higher degree of gender equality due to other unaccounted-for factors. Hence, we utilize the panel structure of the data to investigate further the relationship between democracy and women's representation in government.

## Democratization and the Proportion of Women in Government

Figure 2 plots the proportion of women in cabinet, the level of polyarchy, and the stock of polyarchy in 20 countries that have democratized since 1966 . The countries are selected to secure diversity in geography, time of democratization, and prior type of authoritarian regime. In many countries, for example, Argentina, Bulgaria, and Indonesia, we see a rapid increase in the polyarchy score but a comparatively slow increase in both the stock of polyarchy and the proportion of female ministers. This suggests that the effect of democracy on the share of female cabinet members is not

FIGURE 2. Share of Women in Cabinet during Democratization across 20 Countries


FIGURE 3. Regression Analysis on the Three Measures of Female Representation


Note: Independent variable is level or stock of Polyarchy. The models are based on an OLS with country-clustered standard errors. The thick bars show the $90 \%$ confidence intervals, whereas the thin bars show the $95 \%$ confidence intervals. The measure of Polyarchy is lagged by 1 year and no other controls are included. For full model results, see Supplementary Table G1 for "Share female" ( $N=8,388$ country years), Supplementary Table G2 for "Share female weighted" ( $N=8,388$ country years), and Supplementary Table G3 for "Share female high prestige" ( $N=8,365$ country years).
immediate but rather the result of a process where women gradually gain access to government.
Next, we test this systematically. The results are reported graphically in Figure 3. The figure shows the regression coefficients when we regress the three measures of female government representation on both the level and the stock of Polyarchy.
In the first model, we include only the level of democracy. Here, we see that democracy is significantly and positively correlated with women's representation in government. This finding is independent of how we measure female representation. Substantively, we see that the most democratic country, on average, has 19\% more female ministers than the least democratic.
In the second model, we include year-fixed effects. This takes into account longitudinal trends. Most importantly, we have seen an increase in both the number of democratic countries and the proportion of women in government across the world. Not surprisingly, including year-fixed effects decreases the size of the coefficient, albeit remaining statistically significant. Thus, women's higher representation in government in democracies is not just an artifact of the rise of democracy (Huntington 1993; Teorell et al. 2019).

Third, we include country-fixed effects and, therefore, take into account time-invariant country-specific variables such as history or culture, meaning that we only look at variation in women's representation and democracy within the same country. This diminishes the size of the coefficient, causing the effect of democracy to lose significance. Thus, we do not find that a country, on average, has significantly more women in government when it has a higher level of democracy.
However, when we operationalize democracy as a stock in the fourth model, we find that democracy is highly predictive of the share of women in government. In other words, when a country has more experience with democracy, the share of women in government increases. Furthermore, as shown in model 5 relative to model 4, the effects are larger as we place more emphasis on the past by reducing the depreciation rate. When using the $95 \%$ stock measure, a country with the democratic history of Denmark (in 2021) is predicted to have a $16 \%$ higher proportion of female cabinet members, relative to a country with the "democratic" history of North Korea, all else being equal.
We find that the results are substantively similar when using alternative measures of women's representation
that take into account the importance of the portfolios women are assigned to, meaning that women are assigned more portfolios, but also more important portfolios, when a country has more experience with democracy.

## Testing for Potential Confounders

Many other factors could confound the relationship, even when including two-way fixed effects. We may particularly worry about time-variant variables, such as economic development, or other stock variables, such as GDP per capita. To counter some alternative explanations, we run a number of alternative specification tests in Table 2. Below, we only show the results for the share of female ministers, but in Appendixes H and I of the Supplementary Material, we find that the results are comparable when using the weighted share of female ministers and the share of female ministers in high prestige positions.

Model 1 shows the base model, where we only include the measure of the stock of democracy with country- and year-fixed effects. In model 2, we include the year as a trend instead of using fixed effects. This is another way of controlling for the effect of time by controlling for possibly spurious correlations between the measure of democracy and any similarly-trended independent variables. Using this measure of time increases the coefficient for the stock of democracy relative to the benchmark. Model 3 includes several time-varying measures of economic growth, such as GDP per capita and urbanization. Most importantly, we also include the log of GDP per capita, which also can be perceived as a stock measure for the level of development. ${ }^{9}$ Likewise, we include measures of human development in model 4. Democracy may be related to both economic development (Acemoglu et al. 2019; Przeworski et al. 2000) and human development (Gerring, Thacker, and Alfaro 2012). Furthermore, economic growth is known to be related to women's representation (Matland 1998). Coefficient estimates for the stock of democracy are stable across these tests and comparable in magnitude. Thus, the finding is not an artifact generated by increases in human development or economic capacity in democratizing countries and our findings are, therefore, not due to modernization (Lipset 1959).

In model 5, we control for other measures of women's empowerment, such as women's political empowerment index and the share of female legislators. These controls can, to some degree, be considered "bad controls," since, as discussed in the theory, it is likely that the effect of democratization runs through these variables. However, we want to ensure that the findings are not caused by women's general political empowerment in democratizing countries, but that there is something specific about democracy. We find

[^8]that the stock of democracy remains significant and that the share of female legislators and women's political rights are related to more female cabinet ministers. In contrast, the women's political empowerment index is, surprisingly, related to fewer women in government. It should be noted that the controls for women's empowerment are highly correlated and we should, therefore, be cautious when interpreting them in the same regression.

Model 6 includes several indices that focus on institutional capacity from the V-Dem dataset, such as property rights, the rule of law, judicial constraints, and party institutionalization, and shows a similar estimate for the measure of democracy. This suggests that the results are driven by the democratic feature and not other capacity-related features of institutions. Including these indices also mitigates a potential threat to inference stemming from country experts assigning a high score to a country along some institutional parameter during a period in which a country has more female ministers. If so, the relationship could be spurious and a product of coding circularity (Bizzarro et al. 2018).

In model 7, we include a lagged dependent variable. The coefficient for the lagged dependent variable is large (75.05), which is not surprising given that a country with more female ministers in one year will most likely have more ministers in the next year. The inclusion of the lagged dependent variable means that the coefficients for the stock of democracy capture only the short-term effects and we only estimate how the stock of democracy at $t-1$ affects the share of female ministers from $t-1$ to $t$. We find a strong, positive, and significant effect of the stock of democracy on the share of female ministers in the short run.

Lastly, in model 8, we include a number of fixed covariates to the benchmark model, such as ethnic fractionalization, percent Muslim, and the continent. These variables, which change little or not at all across the period of observation, lead us to replace countryfixed effects with a random-effects model. The coefficient for the stock of democracy remains significant in this specification.

While we include a long range of tests in Table 2, the list is not exhaustive. Hence, we include further robustness tests in the Supplementary Material. In Appendix J of the Supplementary Material, we show that the longer a view we have on history, that is, a lower deprecation rate, the stronger the association between the stock of democracy and the share of female ministers. Furthermore, we show that the results are comparable across different measures of democracy in Appendix C of the Supplementary Material, both when we use dichotomous measures, namely Boix, Miller and Rosato (2013) and the DD index (Cheibub, Gandhi, and Vreeland 2010), and another fine-grained measure, Polity IV (Marshall, Gurr, and Jaggers 2019). In addition, we find that the results are similar when using imputed data for missing values, as seen in Appendix K of the Supplementary Material.

The analysis supports our argument that it is not the level of democracy that explains women's access to

TABLE 2. Specification Tests

|  | Dependent variable: Share of female ministers |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Stock of Polyarchy (95\%) | $\begin{aligned} & 15.65^{*} \\ & (4.47) \end{aligned}$ | $\begin{aligned} & 18.03^{\star} \\ & (4.37) \end{aligned}$ | $\begin{aligned} & 15.34^{*} \\ & (5.03) \end{aligned}$ | $\begin{aligned} & 15.83^{\star} \\ & (4.70) \end{aligned}$ | $\begin{aligned} & 16.04^{*} \\ & (5.41) \end{aligned}$ | $\begin{aligned} & 16.50^{\star} \\ & (4.73) \end{aligned}$ | $\begin{aligned} & \text { 4.32* } \\ & \text { (1.22) } \end{aligned}$ | $\begin{aligned} & 16.49^{*} \\ & (1.33) \end{aligned}$ |
| Trend |  | $\begin{aligned} & 0.35^{*} \\ & (0.03) \end{aligned}$ |  |  |  |  |  | $\begin{aligned} & 0.37^{*} \\ & (0.01) \end{aligned}$ |
| Log of GDP per capita |  |  | $\begin{gathered} -3.65^{*} \\ (1.12) \end{gathered}$ |  |  |  |  |  |
| Oil rents (\% of GDP) |  |  | $\begin{aligned} & 0.07^{*} \\ & (0.02) \end{aligned}$ |  |  |  |  |  |
| GDP growth |  |  | $\begin{aligned} & -0.00 \\ & (0.02) \end{aligned}$ |  |  |  |  |  |
| Urbanization |  |  | $\begin{aligned} & -0.11 \\ & (0.07) \end{aligned}$ |  |  |  |  |  |
| Log of population |  |  | $\begin{gathered} -6.61^{*} \\ (2.14) \end{gathered}$ |  |  |  |  |  |
| Life expectancy |  |  |  | $\begin{gathered} 0.05 \\ (0.13) \end{gathered}$ |  |  |  |  |
| Infant mortality |  |  |  | $\begin{aligned} & 0.10^{*} \\ & (0.03) \end{aligned}$ |  |  |  |  |
| Primary school enrolment |  |  |  | $\begin{aligned} & 0.06^{\star} \\ & (0.02) \end{aligned}$ |  |  |  |  |
| Women political empowerment index |  |  |  |  | $-7.43$ |  |  |  |
| Lower chamber female legislators |  |  |  |  | $\begin{aligned} & (5.10) \\ & 0.40^{\star} \end{aligned}$ |  |  |  |
| Women's political rights |  |  |  |  | $\begin{aligned} & (0.05) \\ & 1.44^{*} \\ & (0.58) \end{aligned}$ |  |  |  |
| Women's economic rights |  |  |  |  | $\begin{aligned} & -0.39 \\ & (0.44) \end{aligned}$ |  |  |  |
| Female leader |  |  |  |  | $\begin{gathered} 0.81 \\ (1.32) \end{gathered}$ |  |  |  |
| Individual liberties |  |  |  |  |  | $\begin{aligned} & 11.92^{*} \\ & (4.62) \end{aligned}$ |  |  |
| Property rights |  |  |  |  |  | $\begin{gathered} 0.87 \\ (3.83) \end{gathered}$ |  |  |
| Rule of law |  |  |  |  |  | $\begin{gathered} -20.24^{\star} \\ (8.50) \end{gathered}$ |  |  |
| Judicial constraints |  |  |  |  |  | $\begin{gathered} 3.38 \\ (4.97) \end{gathered}$ |  |  |
| Legislative constraints |  |  |  |  |  | $\begin{aligned} & -2.65 \\ & (3.08) \end{aligned}$ |  |  |
| Political corruption |  |  |  |  |  | $\begin{gathered} -19.16^{\star} \\ (5.83) \end{gathered}$ |  |  |
| State ownership of economy |  |  |  |  |  | $\begin{aligned} & -0.15 \\ & (0.57) \end{aligned}$ |  |  |
| Core civil society |  |  |  |  |  | $\begin{gathered} -5.75^{*} \\ (2.48) \end{gathered}$ |  |  |
| Party institutionalization |  |  |  |  |  | $\begin{aligned} & -3.88 \\ & (3.25) \end{aligned}$ |  |  |
| Lagged dependent |  |  |  |  |  |  | $\begin{aligned} & 0.75^{\star} \\ & (0.02) \end{aligned}$ |  |
| Constant |  |  |  |  |  |  |  | $\begin{gathered} -737.91^{*} \\ (27.90) \end{gathered}$ |
| Latitude (In) |  |  |  |  |  |  |  | $\begin{aligned} & -3.90 \\ & (4.06) \end{aligned}$ |
| Muslim |  |  |  |  |  |  |  | $\begin{gathered} 0.01 \\ (0.02) \end{gathered}$ |
| Protestant |  |  |  |  |  |  |  | $\begin{aligned} & 0.08^{*} \\ & (0.02) \end{aligned}$ |

(Continued)

TABLE 2. (Continued)

|  | Dependent variable: Share of female ministers |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Ethnic fractionalization |  |  |  |  |  |  |  | $\begin{gathered} 0.71 \\ (1.94) \end{gathered}$ |
| Land area |  |  |  |  |  |  |  | $\begin{aligned} & -0.00 \\ & (0.00) \end{aligned}$ |
| State history |  |  |  |  |  |  |  | $\begin{aligned} & -0.00 \\ & (0.00) \end{aligned}$ |
| Americas (ref: Africa) |  |  |  |  |  |  |  | $\begin{gathered} 0.18 \\ (1.23) \end{gathered}$ |
| Asia (ref: Africa) |  |  |  |  |  |  |  | $\begin{aligned} & -1.99 \\ & (1.35) \end{aligned}$ |
| Europe (ref: Africa) |  |  |  |  |  |  |  | $\begin{gathered} 1.88 \\ (2.02) \end{gathered}$ |
| Oceania (ref: Africa) |  |  |  |  |  |  |  | $\begin{gathered} -9.12^{*} \\ (2.37) \end{gathered}$ |
| Estimation method: | FE | FE (only country) | FE | FE | FE | FE | FE | RE |
| No. of obs. | 8,388 | 8,388 | 6,597 | 6,480 | 4,173 | 7,691 | 8,369 | 6,632 |
| $R^{2}$ | 0.64 | 0.64 | 0.67 | 0.67 | 0.69 | 0.65 | 0.84 |  |
| Years | 55 |  | 50 | 51 | 31 | 55 | 55 |  |
| Countries | 169 | 169 | 159 | 166 | 168 | 169 | 169 | 123 |

Note: All right-side variables lagged by 1 year. Country-clustered standard errors in parentheses. Estimator: OLS (ordinary least squares). $\mathrm{FE}=$ fixed effects (country and year), $\mathrm{RE}=$ random effects. ${ }^{*} p<0.05$.
public office but rather the historical experience with democracy. However, to strengthen the credibility of our theory, we proceed by testing further implications of the theoretical model.

## Dividing Democracy into Its Composite Measures

In Figure 4, we split the measure of Polyarchy into its composite measures and run the models separately for the stock of each measure, including country- and yearfixed effects.

The measures of clean elections and freedom of expression are significantly and positively related to the share of female ministers, whereas associational autonomy is positive but outside conventional bounds for statistical significance. On the other hand, the measures of elected officials and suffrage are negative. At first, these results may seem puzzling, but elected officials and suffrage can be seen as minimum requirements for democracy and, therefore, "hollow" measures of democracy. A country can have sham elections with full suffrage, causing it to score high on these two measures, while having limited or no competition for power in reality. Meanwhile, the three measures focusing on whether the leader loses (at least some) control over the electoral process and, as a result, faces electoral competition, are all positive. This indicates that only real electoral competition changes the motives for selecting female ministers. This is in line with our theory and supports the idea that competitive
elections and "real" democracy are important for the inclusion of women in government.

## Transition to and from Democracy

Next, we investigate the implications of transitions to and from democracy on the share of female ministers when using a binary measure. This can be seen as a more general test of our main argument. Following our theoretical argument, we would not expect to see a drastic increase in the share of women being included in government immediately after democratization. Instead, the increase should be slow and gradual.

We test this in Figure 5, where we compare the share of female ministers before and after a country democratizes according to Boix, Miller, and Rosato (2013). We use the share of ministers relative to the year of a democratic transition (year 0 ) to better take into account that democratization is clustered in time (Huntington 1993) and to better isolate the "effect" of democratization. As predicted, there is no sudden, large jump in the proportion of female ministers immediately following democratization, albeit we do see a small and significant increase in the share of female ministers in the year of democratization compared with the preceding autocratic period. Interestingly, we see little to no increase in the share of female ministers in the years immediately after democratization. However, four years after democratization, the share of female ministers starts increasing markedly, and eight years after democratization, we find that there is a significantly larger

FIGURE 4. Which Component of Polyarchy Best Predicts the Share of Female Ministers?


Note: Share of female ministers. Based on separate models using an OLS regression with country- and year-fixed effects. Countryclustered standard errors in parentheses. The thin bars show the $95 \%$ confidence intervals, whereas the thick bars show the $90 \%$ confidence intervals. The measure of democracy is lagged by 1 year and no other controls are included. For full model results, see Supplementary Table L1: column 1 for Stock of Clean Elections ( $N=8,144$ ), column 2 for Stock of Freedom of Expression ( $N=8,304$ ), column 3 for Stock of Associational Autonomy ( $N=8,365$ ), column 4 for Stock of Elected Officials ( $N=8,082$ ), and column 5 for Stock of Suffrage ( $N=8,255$ ).

## FIGURE 5. Democratic Transitions and the Share of Female Ministers



Note: The share of female ministers relative to the year of a democratic transition according to Boix, Miller, and Rosato (2013) which have been merged with WhoGov, so the year of democratization corresponds to the first democratic cabinet. Ninety democratizations are included in the analysis. See Supplementary 96 M1 for full model results.
proportion of the cabinet that is female relative to the year of democratization. We may see these jumps because of four-year election cycles.

## Split Samples

In the last section of the analysis, we investigate the relationship between regime type and female cabinet
representation in subsets of the full sample to explore mechanisms further. The results are shown in Figure 6.

We begin by dividing the sample into countries in the OECD (in 2018) and those that are not. Countries in the OECD are mainly established democracies integrated in the global economic system and have no recent history of being colonized. Furthermore, these countries have received the bulk of scholarly attention. We do not find conclusive evidence of a significant

## FIGURE 6. Split Sample Tests



Note: Dependent variable is the share of female ministers. Independent variable is the stock of Polyarchy. The models are based on an OLS with country-clustered standard errors. The thick bars show the $90 \%$ confidence intervals, whereas the thin bars show the $95 \%$ confidence intervals. The measure of stock of Polyarchy is lagged by 1 year and no other controls are included. For full model results, see Supplementary Table N1: column 1 for OECD $(N=1,734)$, column 2 for Non-OECD $(N=6,654)$, column 3 for GDPpc $>7,000(N=4,000)$, column 4 for GDPpc $<7,000(N=3,616)$, column 5 for Pre-1993 ( $N=3,551$ ), and column 6 for Post-1993 $(N=4,837)$.
relationship between the stock of democracy and the share of female ministers in OECD countries. One possibility is that the result lacks statistical power because most OECD countries are older democracies (and, therefore, at the higher end of the global sample of stock of democracy). Thus, our independent variable may not capture enough variation within this narrower subset of well-established democracies. Here, other explanations, such as Franceschet, Annesley, and Beckwith's (2017) model of formal and informal selection rules, may be better at capturing the nuanced ways in which different types of established democracies continue on their paths to gender parity. In comparison, we see that the results are strongly significant in nonOECD countries, where most countries range from the lower to high-intermediate zone of global democratic stock. This suggests that our theoretical model is particularly well-suited to explain variation in this group of emerging democracies that are often overlooked in the literature.

Subsequently, we run the analysis within a sample of richer countries (GDP per capita $>\$ 7,000$ ) and poorer countries (GDP per capita $<\$ 7,000$ ) (in the given year) and find that democratic experience matters more in poorer countries. This reiterates that the finding has little to do with the level of development and highlights that democracy is of extra relevance in poorer countries for helping women access positions of power.

In the last two columns, we find that the point estimate is higher after the fall of the Soviet Union (1993-2021) than during the Cold War (1966-92). The fall of the Soviet Union was followed by democratic transition and consolidation in Africa, Eastern Europe, and elsewhere. Furthermore, there has been a higher demand for women in government in more recent years due to the decline in traditional gender norms, which, as discussed in the theory, should particularly have an impact on democracies. Lastly, some governments try to cater to international organizations and donors by appointing more women. For example, this was the case for a group of post-communist countries trying to obtain EU membership (Bego 2014). Combined, these factors push the estimate upward in the period after the Cold War.

## CONCLUSION

Women worldwide are increasingly gaining access to the highest positions of power-positions seldom intended for them to occupy. We posit that the historical nature of democracy is especially pertinent when explaining patterns of increasing inclusion.

The introduction of democratic institutions changes individual incentives to shift both demand and supply dynamics in favor of female ministers. Democracies
capture developments at the mass level through the political entrepreneurship of activists and selectorates. However, these factors are unlikely to take effect immediately. Instead, path dependencies from the previous authoritarian regime hinder women's access to the cabinet in democratizing countries. This means that the accumulation of democratic experiences, or the "stock" of democracy, shapes the patterns of gender balance in cabinets around the world.

Our analyses show that democracies indeed select more female ministers relative to autocracies. However, the association between the level of democracy and the share of female ministers disappears when comparing within country and year (meaning that we follow the same country as it democratizes, taking into account the global trend). However, when we instead operationalize democracy as a stock variable, we find a strong and robust relationship between democracy and the share of women in cabinets. Thus, democracy, working as a chisel, slowly helps chip away at the barriers facing women.

The results provide cause for both optimism and pessimism. While democracy became the dominant political regime as the twentieth century unfolded, progress has halted in later years, with democracy even in decline in some places (Hellmeier et al. 2021). The findings of this article suggest that democratic breakdown can close doors in the face of women trying to gain access to the highest political positions, resulting in less gender-diverse governments. Therefore, our article is ultimately an argument for democracy as an instrument for opening windows for previously marginalized groups to access power.

These findings have a number of implications for current and future research on gender and cabinet composition. The article mainly looks at the share of female ministers but also includes more qualitative measures of prestige to triangulate the results. However, future research could explore these qualitative measures further and also look into specific types of ministries. For example, are finance ministers in democracies more likely to be female? In addition, this article only focuses on the difference between autocracies and democracies. However, this leaves much variance within regime type unexplained. One may wonder how different democratic institutions (such as term limits, the type of electoral system, partisan ideology, or the strength of party system) impact women's access to government. Likewise, future research could explore the role of women in governments across autocratic regime types. Finally, the article does not deal with the consequences of having more women in executive positions. While a growing literature investigates these causes and consequences, there is still much ground to be covered in understanding gendered patterns of access to the highest echelons of power.

## DATA AVAILABILITY STATEMENT

Research data that support the findings of this study are openly available at the American Political Science Review Dataverse: https://doi.org/10.7910/DVN/ I9E6EX.

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## CONFLICT OF INTEREST

The authors declare no ethical issues or conflicts of interest in this research.

## ETHICAL STANDARDS

The authors affirm this research did not involve human subjects.

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[^1]:    ${ }^{1}$ The original dataset only contains data up to 2016. It has since been updated to 2021.

[^2]:    ${ }^{2}$ We expect our theory to extend to democratic systems with term limits. Party organizations constrain democratic leaders' choices to sustain electoral advantages into the next period (Alesina and Spear 1988). Democratic leaders may also care for selfish reasons, since the popularity and sustained power of their party can help maintain their own influence after leaving office. Furthermore, some leaders try to contravene term limits and rely on electoral trends to do so (McKie 2019). Lastly, maintaining popularity reduces the likelihood of potentially being removed from office before the end of their term (Llanos and Pérez-Liñán 2021).

[^3]:    ${ }^{3}$ In coalition governments, the prime minister delegates some of the control over the selection of cabinet ministers to the coalition partners which in turn reduces the number of positions available per party. This may reduce women's appointments to cabinet (Krook and O'Brien 2012). Nonetheless, the theory should still travel to coalition governments since they have to act with some unity (Fortunato 2021), and because many of the arguments, such as the groups from which the candidates are drawn from, still are valid.
    ${ }^{4}$ This effect should exist even in countries with high party polarization since candidates may propose a more gender-balanced cabinet to get out the women's vote among their own partisan support base. Furthermore, partisanship, ideology, and support for women's representation are not always congruent (Celis and Childs 2012), depending on nuances of individual voter utilities (West 2022).

[^4]:    ${ }^{5}$ Although all major parties, at least to some degree, try to gain votes, they may not want to maximize votes, and instead focus on maximizing policy or spoils from being in office (Strom 1990).

[^5]:    ${ }^{6}$ Additionally, the small size of the cabinet can give the leader more latitude in selection, in a kind of opposite dynamic found by Murray (2014) in legislatures where representational quality suffers from having to draw a large group from a narrow talent pool.

[^6]:    ${ }^{7}$ It should be noted that portfolios related to women's affairs and equality are classified as low prestige following the coding used in WhoGov (Nyrup and Bramwell 2020).

[^7]:    ${ }^{8}$ The variable stock $s$ of polyarchy $p$ at time $t$ is defined as $s_{t}=p_{t-1} \alpha+$ $p_{t}$, where $\alpha$ is a fixed depreciation rate. Note that when $\alpha=0, s_{t}=p_{t}$.

[^8]:    ${ }^{9}$ It should be noted that even though we only include the control for $\log$ of GDP per capita in this model, the analysis is consistent to including it throughout.

