

Understanding the Legislative Gender Gap: Evidence from U.S. States*

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Abstract

Women legislators are more likely to serve on committees related to women's issues and to sponsor women's issues bills, but it is unclear if these patterns are driven by district preferences, differences in background, or institutional factors. We introduce new data on the legislative activities of over 25,000 U.S. state legislators to help explain these patterns. After accounting for district preferences in a difference-in-differences design and for candidate backgrounds via campaign fundraising data, we find that women are still more likely to focus on women's issues. They are also less likely to serve on top-flight committees, chair those committees, or serve in leadership. However, once a woman joins the leadership, women's representation on top-flight committees appears to increase. Together, these results suggest that underlying structural features of the legislative environment are an important reason why men and women behave differently as lawmakers.

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1 Introduction

It is well known that women are underrepresented in legislatures across the world (e.g., Rosenbluth, Kalla, and Teele 2015) and run for office at lower rates than men (e.g., Fox and Lawless 2004; Lawless and Fox 2010; Carroll and Sanbonmatsu 2013; Fox and Lawless 2014).¹ In addition to normative reasons to prefer more descriptively representative legislatures, existing research suggests that women legislators who make it into office on average work harder and secure more resources for their constituents (Anzia and Berry 2011). The presence of more women in politics also improves representation for women constituents (Chattopadhyay and Duflo 2004) and increases the overall competence of representatives (Besley et al. 2017). At the same time, we know that women legislators tend to focus more on women’s issues and to serve on committees related to women’s issues (Huddy and Terkildsen 1993*a,b*; Fox and Smith 1998; Dolan 2010; Volden, Wiseman, and Wittmer 2016). But we know less about the causes of these gender differences in legislator behavior.² Are women choosing to focus on these issues due to their constituents’ preferences or their own pre-existing expertise, or because of institutional factors that constrain and shape their choices as legislators? The answer to this question may help to explain why women are underrepresented in legislative politics.

This paper uses fine-grained new data on the activities of approximately 25,000 U.S. state legislators combined with information on over 700,000 bills they sponsored in order to evaluate the extent to which women legislators focus on women’s issues because they come from districts that care more about these issues, because their professional and political backgrounds give them special expertise in these areas, or because institutional factors encourage them to do so. These are by no means the only relevant explanations for the

¹More broadly, many labor markets exhibit gender gaps in compensation (Goldin et al. 2017), promotion rates (Blau and DeVaro 2007; Bertrand, Goldin, and Katz 2010), and leadership roles (Bertrand and Hallock 2001; Blau and Kahn 2017). For a recent review, see Olivetti and Petrongolo (2016).

²To be clear, there is a body of important work that explores how gender dynamics shape women’s legislative activities (e.g., Thomas 1991; Kathlene 1994; Rosenthal 1998; Carey, Niemi, and Powell 1998; Poggione 2004; Volden, Wiseman, and Wittmer 2013; Provins 2017). But while descriptively and theoretically rich, this research has not focused on decomposing the various sources of these gender differences.

differences we observe between men and women legislators, but they are important ones. If men and women behave differently because they represent different constituents or have different personal backgrounds, then this would be a natural and normatively appropriate response according to many classic theoretical models of effective representation (e.g., Mansbridge 2003). If, on the other hand, structural factors appear to distort the options that women legislators enjoy inside the legislature, it might suggest that women are reluctant to seek political office in part because they anticipate these disparities.

In order to account for district selection effects, we employ a difference-in-differences design that examines within-district changes in the gender of legislators, holding fixed the underlying, time-invariant policy preferences of the district. Accounting for constituency preferences in this manner, we find almost no decrease in the size of the gender gap in terms of committee assignments and lawmaking behavior. The differing experience of men and women inside state legislatures does not appear to reflect differences in the constituencies that elect them.

Next, to account for self-selection on the basis of personal backgrounds, we use campaign fundraising as a proxy. The idea is that legislators who come from educational backgrounds, for example, are more likely to raise money from the educational sector; those with a background in healthcare are more likely to raise money from the health sector, and so forth. After validating this measure, we compare men and women with similar fundraising profiles and show that gender differences persist across a variety of outcomes. This suggests that the different experiences of men and women legislators probably reflect more than differences in their backgrounds.

Having found little evidence that district characteristics or fundraising backgrounds can explain the different policy focuses of men and women, we conclude that institutional factors within the legislature likely play an important role. We then document several additional gender gaps that seem to support the idea that underlying structural dynamics are at work. Using the same difference-in-differences setup, we demonstrate that women are less likely to

hold committee chair positions, serve on top-flight committees (defined to be the committees that appear to be most valued by campaign donors), and be promoted to legislative leadership positions. These patterns suggest that structural factors inside the legislature play a substantial role in the lawmaking careers of men and women. After all, we would not expect self-selection alone to explain why women are less likely to be members or chairs of the top-flight committees that confer the largest fund raising and electoral benefits for legislators.

In the final part of the paper, we consider how changes to the institutional environment might mediate the gender gap. We present speculative evidence that, when a chamber has at least one woman in leadership, more women receive positions on top-flight committees. If women leaders are likely to provide more opportunities for women legislators, then these patterns suggest that institutional factors rather than self-selection drive the gender disparities that we observe. Although these results are more tentative, they are consistent with work in economics that documents how women executives help to advance the careers of other women within the firm (e.g., Matsa and Miller 2011).

Overall, the evidence suggests that women face a more challenging environment in the legislature than men. The existing literature emphasizes several psychological and structural reasons why women don't run for office—demonstrating, for example, that women are less politically ambitious (Fox and Lawless 2014), less likely to be recruited to office (Sanbonmatsu 2006), face more primary competition (Lawless and Pearson 2008), and are less likely to benefit from the incumbency advantage (Lawless and Fox 2010). Our findings offer an additional and complementary explanation: women may run at lower rates because they anticipate fewer opportunities for professional growth once elected as representatives.

The remainder of the paper is organized as follows. In the next section, we lay out the new data that we have collected in order to study this topic. In section 3, we review existing theoretical perspectives on the gender gap in legislative politics, and we present our idea on the possible links between the institutional organization of the legislature and the decision

to seek political office. In section 4, we present our evidence that neither district preferences nor personal backgrounds explain the difference in legislative focus between men and women. In section 5, we document disparities in the committees and leadership positions that men and women legislators achieve. In section 6, we present some preliminary evidence on factors that appear to mitigate the legislative gender gap. Finally, we conclude.

2 New Data on Women in State Legislatures

To understand women’s careers in state legislatures, we assemble a new dataset that contains information on the committee service and electoral performance of roughly 25,000 state legislators during the years 1986–2014. Information on the committee assignments—including committee chairs—of state legislators comes from a dataset we constructed by keying in information from the *State Yellowbooks*. We merge this information by legislator to election data from Klarner et al. (2013) and campaign finance data from Follow the Money using legislator names. We add to this information on which legislators hold which leadership positions, which was gathered from primary sources in Fourinaies and Hall (2017). We also merge into this dataset information on the bills that legislators sponsor in 15 states for which we are able to gather the bill titles, summaries, and sponsors from on-line sources. Together, the merged dataset allows us to analyze gender differences over the full range of legislator activity, spanning committee service, legislation, and fundraising.

2.1 Estimating Candidate Gender

We use a standard Python software package, “gender-guesser,” to classify candidates’ gender based on their first names.³ The program uses administrative records on names and gender to determine which first names are most commonly used by men and women. This in turn allows us to predict which candidates are likely to be men or women. Table A.3 validates

³<https://pypi.org/project/gender-guesser/>

the procedure by comparing it to legislators' self-reported gender for the state of Wyoming. As the table shows, most legislators are correctly classified.

2.2 Classifying Women's Issues Committees and Bills

We follow a long line of research that studies the legislative issues most commonly associated with women. In a review of the literature on women in the state legislatures, Swers (2001: 217) discusses how female state legislators exhibit greater commitment to "issues of traditional concern to women, including education, health, and welfare." We adopt the standard classifications used in this literature; in particular, we consider health, education, and welfare committees to be women's issues committees for our analyses below.⁴

Different state legislatures use different names for their committees, which presents a challenge for identifying which committees in which states are concerned with health, education, and welfare. We follow Fourinaies and Hall (2017) in using a defined set of keywords to identify these committees in each state. Specifically, we count a committee as being concerned with health if we find any of the following word stems in the committee's official name: 'health', 'hosp,' 'medic.' For education, the word stems are: 'educ,' 'school,' 'univer,' 'teach,' 'child.' For welfare, we use only the word 'welfare.'

For consistency, we then use the exact same word stems to define legislation related to these issues. Specifically, we search for these same word stems in the summaries of each bill in our dataset, and we count any bill as a women's issues bill if it contains any of the health, education, or welfare word stems.

⁴For another way to classify committees as women's committees, see Provins (2017). The paper finds that health, education, and welfare committees are all associated with women, in addition to several other committees that are perceived as being women-related.

3 The Gender Gap in Legislative Careers: Theoretical Background

It is well-known that women legislators in the U.S. tend to focus on women's issues legislation and to serve on committees associated with women's issues (Huddy and Terkildsen 1993*a,b*; Fox and Smith 1998; Dolan 2010; Volden, Wiseman, and Wittmer 2016). We focus on three potential explanations for these patterns that are theoretically important to disentangle and which our data can speak to.

First, women legislators may be elected from districts with distinct policy preferences, which could lead women legislators to behave differently than men due to constituency demand (Poggione 2004; Burrell 1996; Carey, Niemi, and Powell 1998). If constituent differences drive the observed differences in behavior, it might suggest that the electoral system is a key barrier to the broader representation of women in the legislature, as it would indicate that women are only winning election in places focused on women's issues. We can test for this mechanism by accounting for unobserved district preferences in our difference-in-differences design, explained below.

Second, women may choose different focuses inside the legislature because they come from different backgrounds than men legislators (Fox and Lawless 2004; Lawless and Fox 2005; Burns, Schlozman, and Verba 2001). For example, if women who become legislators are more likely to have come from educational or health backgrounds, a gender-blind process in which legislators are matched to legislative roles in which they have pre-existing expertise would produce the kinds of gender differences inside the legislature that we observe. We can test for this mechanism by comparing the legislative service of men and women with similar campaign fundraising profiles, who likely come from similar backgrounds (a claim we discuss and validate below).

Finally, institutional factors may shape the opportunities that women receive and the choices they face inside the legislature (Lawless and Pearson 2008; Milyo and Schosberg

2000; Sanbonmatsu 2002, 2006). For a variety of reasons, legislative leaders, parties, and the legislature as a whole may channel women legislators into roles that are stereotyped for women—like health and education committee assignments—even if women legislators do not come from districts that care particularly about these issues, and even if they do not come from related professional backgrounds. To the extent this mechanism is at play, it indicates distortions that may make women legislators worse off, and may discourage some women from seeking office in the first place. We cannot test for this mechanism directly, but we are able to perform two suggestive analyses: first, we can evaluate how much district characteristics and personal backgrounds appear to explain the patterns of women service inside the legislature, and if they explain little of the gender gap we can suspect that institutional factors must be important; and second, we can examine whether the gender gap in service falls when women enter legislative leadership.

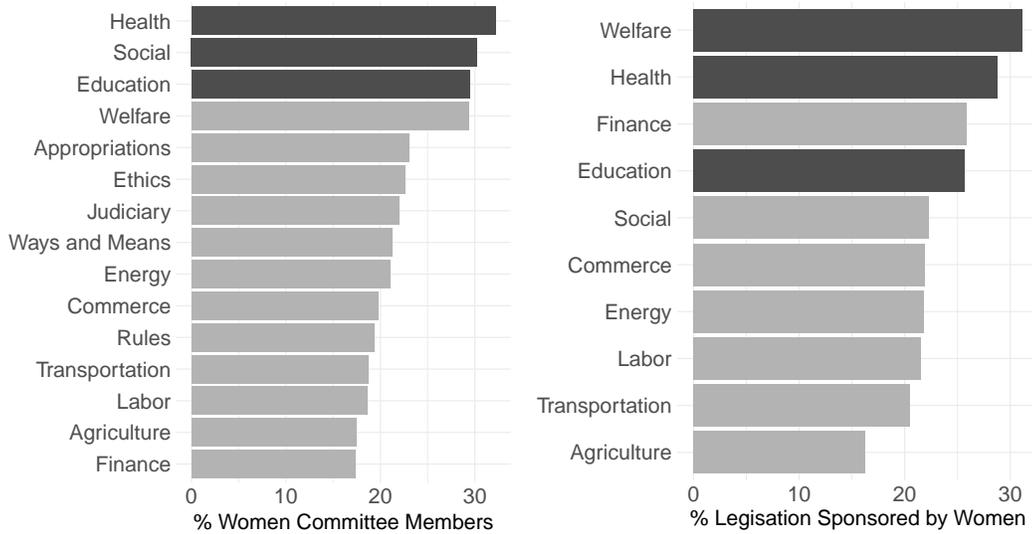
While not exhaustive, this list provides a starting point for thinking about the origins of the various gender gaps observed in the legislative careers of men and women. One of the contributions of this paper is that our data allows us to parse these mechanisms in a way not previously possible.

4 Women Are More Likely to Work on Women’s Issues

We begin by laying some basic descriptive groundwork about women in U.S. state legislatures. As has already been well documented in existing research, our data confirms that women and men differ in terms of their committee assignments and policy focus (e.g., Thomas 1991; Swers and Larson 2005; Volden, Wiseman, and Wittmer 2016; Provins 2017).

Figure 1 presents the percentage of women legislators in our data who serve on a variety of different committees, in the left panel, and who sponsor bills on a variety of different issue areas, in the right panel. The bars are highlighted in black for the issue areas we defined above to be women’s issues—education, health, and welfare. There are fewer bars in the

Figure 1 – Gender Composition of State Legislature Committees and Bill Sponsorship, 1990–2014. Committees and bill subjects in black are those the literature identifies as women-related.



Note: The left panel uses data on committee assignments from all state legislatures, while the right panel on bill sponsorship only uses data from the 15 states for which we have legislation data. Additional details are in the data section.

right panel because we cannot identify certain issue areas in the bill summary text (e.g., it is not clear what search terms to use to define ethics legislation; ethics committees are found using the word “ethics” but it is not clear that we can classify bills with only that word.)⁵ The specific word stems used for each search are shown in the Appendix.

As the left panel of the figure shows, women’s issues committees have a higher proportion of women members than other committees do. Roughly 23.5% of the legislators in our dataset are women, yet more than 30% of health committee members are women, and nearly 30% of education and welfare committee members are women. Conversely, women are underrepresented on many other committees. Fewer than 20% of the members of rules, transportation, labor, agriculture, and finance committees are women.

⁵Specifically, we do not attempt to classify bills for the following committees: appropriations, ethics, rules, judiciary, and ways and means.

As the right panel of the figure shows, the bills that women sponsor also focus, by and large, on women’s issues. Again, roughly 23.5% of legislators in our dataset are women, but more than 30% of bills categorized as concerning welfare are sponsored by women legislators, and roughly 28% of bills categorized as health-related are sponsored by women. Women also sponsor education bills at an unusually high rate. Women pursue other policy areas at lower rates—for example, only roughly 17% of agriculture bills are sponsored by women.

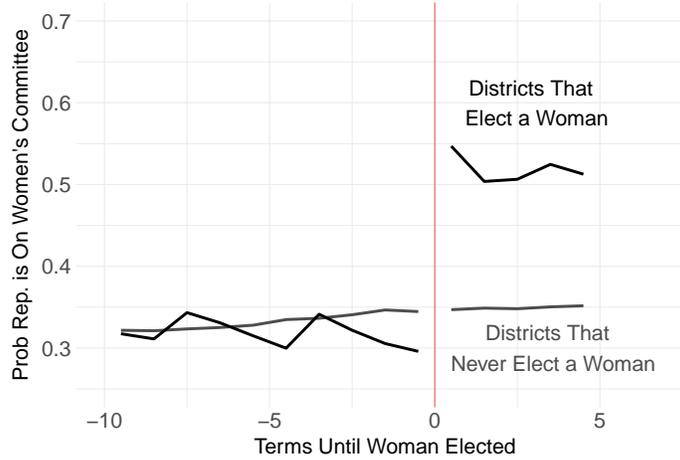
These are purely descriptive facts about women in U.S. state legislators. As we explained in the previous section, the differences between men and women in committee membership and policy focus could, among other things, reflect district selection, self-selection, or institutional incentives.

While descriptive facts are informative, they may conflate the fact that women tend to run and win office in a different set of districts, with different voter preferences, than men. Suppose, for example, that women are more likely to run in urban districts while men are more likely to run in rural districts, and that voters in rural districts care more about agriculture than those in urban districts. If we observe that women are less likely to serve on the agriculture committee, this could potentially reflect that women are elected in districts where agriculture is not a salient issue. Poggione (2004) summarizes how this type of selection issue may affect analyses of women’s legislative behavior, writing, “If systematic differences in men and women’s constituencies explain the relationship between gender and legislators’ preferences, rather than gender itself, then the impact of gender may have been overestimated in previous research.”

To address this issue, we compare the difference in committee service for men and women legislators who are elected from the same district at different times. Before moving to the formal estimates in this vein, we examine the effect of electing a woman legislator on observed committee assignments graphically. To simplify things, we group the committees the literature has identified as focused on women’s issues—education, health, and welfare—into a single dummy variable indicating that a legislator serves on at least one such committee.

Figure 2 – Women Are More Likely to Work on Women’s Issues.

The figure illustrates women are more likely to serve on women’s issues committees than men. The graph compares changes in incumbent committee positions related to women’s issues for the set of districts who elect a woman to changes in these committee positions for a comparable set of “control” districts who have never elected a woman. There is a sharp jump upwards in women-related committee positions after a district elects a woman representative.



We then plot the average of this variable for incumbents in two sets of districts: those that at some point elect a woman, and those that do not. Figure 2 plots the resulting trends. When a district switches from having a man incumbent to a woman incumbent, we observe a sharp jump in the average number of women-related committee positions. Women clearly serve on women-related committees at higher rates than men, and this phenomenon is not the result of women serving in different districts than men.

In Table 1, we analyze the gender gap in legislative careers more formally and in greater detail. In the first panel, we present the statistical analysis that corresponds to the graphical analysis presented in Figure 2. The simple cross-sectional results are presented in the first column, and these results indicate that women legislators are more likely than men to serve on women’s issues committees. In the second column, we include district fixed effects to examine whether the gap in careers can be attributed to district-level factors. The estimates barely change, suggesting that women are not simply serving on these committees because they represent districts interested in these issues.

Table 1 – Women Are More Likely to Work on Women’s Issues.

First column reflects the overall difference between men and women. Second column includes district fixed effects to account for district preferences. Third column adds control for money raised in first election from women issues donors as a proxy for background.

	(1)	(2)	(3)
	Member of Women’s Issues Committee		
Woman Legislator	0.15 (0.01)	0.14 (0.01)	0.14 (0.01)
# Observations	89,641	87,099	34,024
Baseline Mean	0.31	0.31	0.31
	Chair of Women’s Issues Committee		
Woman Legislator	0.02 (0.00)	0.02 (0.00)	0.02 (0.00)
# Observations	89,641	87,099	34,024
Baseline Mean	0.03	0.03	0.03
	Log # of Women’s Issues Bills		
Woman Legislator	0.18 (0.02)	0.12 (0.02)	0.07 (0.03)
# Observations	14,348	14,144	9,133
Baseline Mean	1.58	1.58	1.58
Chamber-by-Year FEs	Yes	Yes	Yes
District FEs	No	Yes	Yes
Log First-Election Donations from Health and Education	No	No	Yes

Robust standard errors clustered by district in parentheses.

The inclusion of district fixed effects means that we are implicitly performing a difference-in-differences design in which we compare changes in the probability of serving on a women’s issues committee for districts that switch to having a woman legislators and for districts that do not switch. In the Appendix, we perform standard tests of the parallel trends assumption for the difference-in-differences design. In particular, we add linear district-specific time trends, and we add a leading indicator for the election of a woman legislator. In both cases, the assumption appears sound.

In the third column, we control for donations from women’s issue industries in a legislators’ first electoral campaign. We use campaign donations in a candidate’s first election as a proxy for a legislator’s background in and connections to an industry (e.g., teachers who run for office often receive donations from teacher’s unions). Logically, candidates who come from a particular sector should be more likely to raise money from donors in that sector. We validate this idea in the Appendix in two ways. First, we show that raising money from a sector in your first election strongly predicts serving on the committee related to that sector if you win office. Second, we use data from California that indicates which state legislative candidates are former schoolboard members, and we show that schoolboard members are much more likely to raise money from the education sector than are other candidates. Although campaign finance is clearly not an exhaustive measure of legislators’ backgrounds, we believe it provides a useful signal of which legislators come from backgrounds in which sectors.

Even after controlling for legislator background with this proxy, when women are elected to represent a district they are still 14 percentage points more likely than men to serve on a women’s issues committee. This suggests that existing connections and previous career patterns do not explain the observed gender difference in committee assignments.

In the second panel, we elaborate on the results from the first panel. More specifically, we ask whether women legislators are more likely to attain a chair position on a women’s issue committee than men. The estimated coefficient is positive, suggesting that women are

more likely to chair a women’s issue committee than men. Again, the results are very stable across the different specifications, indicating that the gap is not driven by variation across districts or previous career paths.

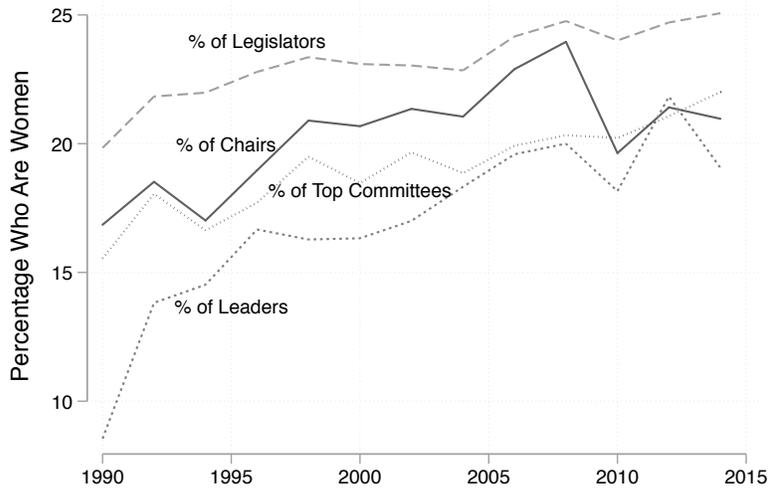
Finally, we ask whether women are more likely to sponsor women’s issues bills than men. The estimated effect is positive and quite precise, suggesting that women are more likely than men to sponsor legislation related to women’s issues. When one includes district-fixed effects and control for background as proxied by donations in the first election the results are weakened. This could mean that district-level factors and legislators’ backgrounds may matter for the bills they sponsor, even though they do not appear to matter for committee service. Put another way, it appears that a substantial portion of the difference between men and women in the rate at which they introduce legislation related to women’s issues is related to the differences in districts and backgrounds of men vs. women legislators—yet among men and women from similar districts and with similar backgrounds, women are still placed onto women’s issues committees at much higher rates.

5 Women Are Less Likely to Attain Powerful Positions

Another way to see that institutional factors may constrain women legislators’ choices is to examine gender differences in attaining highly sought-after committee and leadership positions. Thus far, we have documented that women legislators are more likely to work on women’s issues, and that this career path does not seem to be driven by differences in the districts that men and women are elected from, or differences in their backgrounds as proxied for with campaign fundraising. In this section, we examine whether women and men are equally likely to attain powerful positions in the legislature.

First, we present some simple descriptive facts. Figure 3 presents three trend lines from our data: the percent of state legislators who are women, the percent of all state legislative committee chairs who are women, and the percent of all state legislative leaders—defined

Figure 3 – Gender Composition Over Time, State Legislatures, 1990–2014.



to include anyone with the titles Speaker, Leader, or President in either the majority or minority parties—who are women.

As the graph shows, the percentage of state legislators who are women has grown from about 20% in 1990 to roughly 25% in 2015.⁶ But, as the second two lines show, fewer women are committee chairs and leaders than would be expected based on their numbers in the legislature. In 1990, while 20% of state legislators were women, fewer than 5% of legislative leaders were women. These percentages have converged in more recent years, but even today, roughly 4 percentage points still separate them.

Next, we investigate whether women serve in positions of power at different rates than men, accounting for district characteristics with the same difference-in-differences design. Table 2 presents difference-in-differences estimates of the effect of electing a woman on the probability of the legislator (a) serving on a top committee; (b) chairing a top committee; (c) chairing any committee; (d) serving in a party-leadership position.

⁶These numbers closely track those reported by the Center for American Women and Politics (CAWP), who report that the number is 24.8% for 2017. See <http://www.cawp.rutgers.edu/women-state-legislature-2017>.

Table 2 – Women Legislators Are Less Likely to Attain Top Legislative Positions. Women legislators are less likely to become members of top committees, attain committee chairs, and serve in leadership positions.

	Member of Top Committee	Chair of Top Committee	Chair of Any Committee	In Leadership
	(1)	(2)	(3)	(4)
Woman Legislator	-0.029 (0.006)	-0.010 (0.003)	-0.020 (0.006)	-0.015 (0.003)
Observations	87099	87099	87099	87099
Baseline Mean	0.252	0.030	0.057	0.056
Legislator Fixed Effects	Yes	Yes	Yes	Yes
Chamber-by-Year FEs	Yes	Yes	Yes	Yes

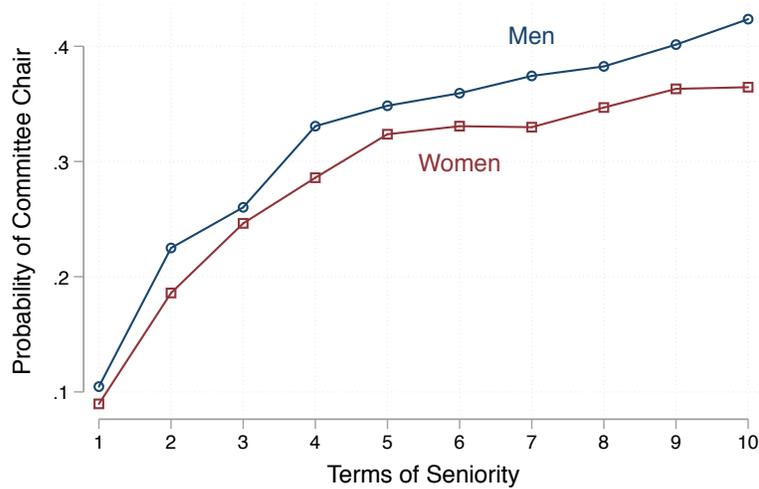
Robust standard errors clustered by district in parentheses.

In the Congressional context, the most prestigious committees are typically regarded as Ways and Means, Appropriations, Finance, Rules, and Budget (Fenno 1973). However, the hierarchy of committees is less clear in state legislatures. To define “top” committees, we examine which committees appear to produce the largest increases in campaign fundraising for members. This analysis, presented in the Appendix, concludes that Finance and Rules increase the fundraising of members by approximately \$75,000, on average, much larger than all other committees. Accordingly, we define top committees to be these two committees.

The results suggest that women are less likely to attain top legislative positions than men. All the coefficients are negative and precisely estimated. When a district elects woman, it is less likely that the legislator will serve on a top committee, chair a committee or serve in a leadership position.

Relative to the baseline, the estimated effects are quite substantial in magnitude. Take the analysis of leadership positions in column 4 as an example. Defining leadership to include legislators who serve as leader, president pro tem, or speaker in either the majority or minority party, we see a woman is 1 percentage-point less likely than a man to be in leadership, a 17% difference—again, accounting for district differences.

Figure 4 – Seniority and Committee Chair Positions by Gender, State Legislatures, 1990–2014.



5.1 Considering Seniority

What explains these discrepancies in committee chair service? In Congress, seniority has historically been the single most important factor in determining both committee assignments and chair positions, although the Republican Caucus grants its members more leeway in selecting committee chairs.⁷ But in state legislatures, seniority norms are much less prevalent, and party leaders have the authority to make committee and chair appointments in almost every state chamber (Francis 1989). Figure 4 shows descriptively that, even after accounting for seniority, women are still less likely to chair top committees at each stage of their legislative careers.

6 Institutional Factors and the Gender Gap: Preliminary Evidence

As we have seen, women legislators disproportionately are underrepresented on the committees that are most valuable to donors, and, partly as a consequence of this, raise less

⁷<https://www.senate.gov/artandhistory/history/common/briefing/Committees.htm>

money than men. In this section, we explore an institutional factor that might alter this gap: whether the the legislature’s leadership, who makes committee assignments and shape legislators’ careers in many important ways, contains any women.

To do so, we re-estimate the main diff-in-diff specification with the addition of an interaction term, the product of *Woman Legislator* and a new variable, *Woman Leader_{sct}*, which takes the value 1 if chamber *c* in state *s* has at least one woman in a leadership position at time *t*, and 0 otherwise. We define leadership to include the following titles, which are used in various state legislatures: leader, president pro tem, and speaker. We include leaders of both the majority and minority parties since minority-party leadership often influences the committee assignments received by members of the minority party.

Table 3 presents the results. The first row simply shows how underrepresented women legislators are on top-flight committees when leadership is all men, taking account of district preferences as in Table 1. As the second-row interaction terms in the first four columns show, we find consistent evidence that women legislators are less underrepresented on top-flight committees when women are present in leadership.⁸ Our preferred estimate containing the most rigorous set of fixed effects, in column 4, suggests that having at least one woman in leadership predicts that the underrepresentation of women on top-flight committees falls by 67%.

In sum, women do appear to gain access to top-flight committees—finance and rules—at a higher rate when a woman is in leadership, but these results are speculative. That said, they are consistent with existing research demonstrating that women managers can effectively reduce workplace gender bias. For example, when women become managers, the gender wage gap decreases in their firms (Cohen and Huffman 2007), and when women serve on corporate boards more women are promoted to top management positions (Matsa and Miller 2011).

⁸These results are also robust to the inclusion of a control for the number of women present in the legislature.

Table 3 – Women Membership on Top Committees With and Without Women Leadership. More women serve on top committees when the legislative leadership includes women.

	On Top Committee			
	(1)	(2)	(3)	(4)
Woman Legislator	-0.04 (0.01)	-0.04 (0.01)	-0.03 (0.01)	-0.03 (0.01)
Woman Leg \times Woman Leader	0.02 (0.01)	0.02 (0.01)	0.02 (0.01)	0.02 (0.01)
# Observations	87,103	87,099	87,099	87,099
District FEs	Yes	Yes	Yes	Yes
Year FEs	Yes	No	No	No
State-Chamber-Year FEs	No	Yes	Yes	Yes
Seniority FEs	No	No	Yes	Yes
Party FEs	No	No	Yes	Yes
District Trends	No	No	No	Yes

Robust standard errors clustered by district in parentheses.

A variety of mechanisms have been proposed to explain these findings. Women in leadership roles might help other women gain access to male-dominated professional networks and same-sex mentors (Athey, Avery, and Zemsky 2000), and female managers may be less likely to discriminate against women for career interruptions due to childbearing and family care obligations (Miller 2011). Women are also more likely to agree with the idea that employers should make “special efforts to hire and promote qualified women”— and this is especially true of women managers (*The General Social Survey* 1996).

At the same time, anecdotal evidence suggests that men in leadership may exclude women from informal networking activities in order to avoid the appearance of impropriety. Mike Pence has famously stated that he refuses to dine alone with women, and a survey of Capitol Hill staffers in 2015 found that “several female aides reported that they have been barred from staffing their male bosses at evening events, driving alone with their congressman or senator, or even sitting down one-on-one in his office for fear that others would get the wrong

impression.”⁹ Sexual harassment scandals have roiled a number of state legislatures in recent years; the state of California, for example, recently released records on 18 allegations of sexual harassment in its state legislatures.¹⁰ Collectively, there are a variety of formal and informal channels through which more women leaders in the legislature might help the careers of their fellow women.

7 Conclusion

According to Jane Mansbridge, “Descriptive representation by gender improves substantive outcomes for women in every polity for which we have a measure” (Mansbridge 2005). But despite the numerous benefits associated with gender parity in political representation, women continue to comprise a minority in every state legislative chamber in the U.S. Labor economists have made strides uncovering the origins of the various gender gaps that persist throughout women’s careers in the workplace (Blau, Ferber, and Winkler 2013; Olivetti and Petrongolo 2016), and political scientists have offered a variety of reasons why women don’t run for office and the types of issues they focus on when they do (Thomas 1998; Burns, Schlozman, and Verba 2001; Swers 2002; Sanbonmatsu 2006; Lawless and Fox 2010). But we still know relatively little about the root causes of the discrepancies in how men and women legislators experience the legislature, and about how these discrepancies might feed back into the decision to seek office in the first place.

This paper has offered comprehensive new data on U.S. state legislators, which we have used to provide a detailed account of the differences in the political careers of men and women. Consistent with existing literature, we started by showing descriptive evidence that women are underrepresented in state legislatures, are underrepresented in leadership inside the legislature, and disproportionately focus their political careers on women’s issues.

⁹<https://www.theatlantic.com/science/archive/2017/03/pences-gender-segregated-dinners/521286/>

¹⁰<http://www.latimes.com/politics/la-pol-ca-legislature-sexual-harassment-records-released-20180202-story.html>

Understanding what these differences mean requires understanding whether they are driven by differences in the types of districts from which men and women are elected, by differences in the motivations and backgrounds of men and women, or whether they indeed reflect institutional factors that distort legislators' choices.

A series of difference-in-differences designs, validated in a variety of ways, suggests that differences in the types of districts that elect men and women do not explain these disparities. We also found consistent evidence that the gender gap in political careers reflects more than self-selection. Controlling for background using campaign finance data, we still found large differences in the committee service and legislative focus of men and women legislators.

These non-results led us to suspect that institutional factors must play a role in altering the experiences of men and women legislators. A first piece of evidence in favor of this possibility is that women not only focus more on women's issues, but are also underrepresented on top-flight committees and in leadership, disparities that are hard to explain with self-selection. Finally, though these results are more tentative, women appear to gain more top-flight committee assignments when at least one woman is a member of the legislative leadership, suggesting that there are barriers to women attaining these positions.

While our results help to shed light on the challenges women face in state legislatures, they do not explain precisely why these challenges exist. Women may receive fewer opportunities to serve on top-flight committees and to serve in leadership because of explicit biases by senior men, or because of implicit biases, or because of self-censoring, or for any combination of these reasons and others. It is our hope that the large-scale evidence we have laid out in this paper will help to motivate future investigations into these precise mechanisms.

Whatever the mechanisms, the pattern of results we document may help to explain the well-known fact that women seek political office in the U.S. at lower rates than men. Women may be reluctant to enter politics if they observe that the internal operations of the legislature constrain and shape the opportunities they have as legislators.

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Online Appendix

Intended for online publication only.

Contents

A.1	Information on Dataset Coverage	26
A.2	Ranking Committees Based on Campaign Contributions	26
A.3	Classifying Committees and Bills	29
A.4	Validating Gender Estimates	29
A.5	Further Tests for Difference-in-Differences Design	30
A.6	Fundraising Predicts Committee Service	32

A.1 Information on Dataset Coverage

Table A.1 – # Legislator-Term Observations by State.

State	Women	Men	Years	State	Women	Men	Years
AK	174	573	1986–2014	AL	100	953	1986–2014
AR	297	1416	1986–2014	AZ	409	816	1988–2014
CA	353	1096	1986–2014	CO	408	764	1986–2014
CT	679	1896	1988–2014	DE	168	598	1986–2014
FL	464	1581	1986–2014	GA	581	2534	1988–2014
HI	237	678	1986–2014	IA	373	1446	1986–2014
ID	384	1071	1988–2014	IL	559	1677	1986–2014
IN	308	1493	1986–2014	KS	574	1380	1988–2014
KY	230	1495	1986–2014	LA	89	661	1987–2011
MA	634	2126	1988–2014	MD	346	749	1994–2014
ME	744	1804	1988–2014	MI	420	1467	1986–2014
MN	698	1858	1986–2014	MO	562	2039	1986–2014
MS	148	978	1987–2011	MT	447	1349	1986–2014
NC	487	1782	1988–2014	ND	252	1168	1986–2014
NE	78	276	1986–2014	NH	1819	3996	1988–2014
NJ	243	1083	1987–2013	NM	335	896	1988–2014
NV	218	496	1988–2014	NY	572	2303	1988–2014
OH	356	1337	1986–2014	OK	192	1612	1986–2014
OR	280	796	1986–2014	PA	463	2882	1986–2014
RI	409	1415	1988–2014	SC	280	1685	1988–2014
SD	276	1143	1988–2014	TN	274	1407	1986–2014
TX	443	1975	1986–2014	UT	224	1030	1986–2014
VA	251	1325	1987–2013	VT	831	1617	1988–2014
WA	594	1184	1986–2014	WI	412	1275	1986–2014
WV	303	1366	1986–2014	WY	234	883	1986–2014

A.2 Ranking Committees Based on Campaign Contributions

To identify “top-flight” committees, we examine campaign contributions to members of different committees. Contributions are only made to individual legislators, not committees. Because members serve on more than one committee, simply totaling contributions by committee would double- (or more than double-) count many donations. To address this, we regress total contributions to each legislator in each term on dummies for all the committee

types in our data. We do not include an intercept term so that each coefficient reflects the average amount of money contributed to each committee. Table A.2 presents the results.

As we can see, finance and rules are far and away the most valuable committee. Being a member of the finance committee predicts an increase of almost \$75,000 for a member; the premium for the rules committee is very similar in magnitude. The next largest premium is for commerce, but it is roughly \$20,000 smaller. As such, we classify only finance and rules as top-flight committees.

Table A.2 – Identifying Top Committees Based on Contributions.

	Average Donations
	(1)
Energy	32,786 (2,386)
Transportation	52,621 (2,776)
Health	45,826 (2,975)
Finance	74,514 (3,007)
Agriculture	18,145 (2,950)
Education	47,045 (2,359)
Ethics	29,736 (5,447)
Labor	12,617 (3,703)
Commerce	56,414 (2,848)
Social	15,492 (3,111)
Ways and Means	18,110 (3,903)
Rules	74,574 (3,014)
Appropriation	36,893 (2,621)
Judiciary	35,927 (2,625)
Observations	51861

A.3 Classifying Committees and Bills

We use the following search terms to classify committees. We use the same search terms to classify bills into these categories.

```
qui foreach v in cmt chair vice {
  gen 'v'_energy = regexm('v' ,"energ|oil|gas|resourc|renew|coal|util|environ")
  gen 'v'_trans = regexm('v',"transp|highw|road|train|airp|harbo|waterw")
  gen 'v'_health = regexm('v',"health|hosp|medic")
  gen 'v'_fin = regexm('v',"financi|bank|insuran")
  gen 'v'_ag = regexm('v',"agri|rural|ranch|farm|cattl|fish")
  gen 'v'_educ = regexm('v',"educ|school|univer|teach|child")
  gen 'v'_ethics = regexm('v',"ethic")
  gen 'v'_labor = regexm('v',"labor")
  gen 'v'_commerce = regexm('v',"busi|commerce|trade|indus")
  gen 'v'_social = regexm('v',"social|human|age|elder|retir")
  gen 'v'_welfare = regexm('v',"welfare")
  gen 'v'_waysandmeans = regexm('v',"way") & regexm('v',"mean")
  gen 'v'_rules = regexm('v',"rule|committee on")
  gen 'v'_approp = regexm('v',"appr")
  gen 'v'_judiciary = regexm('v',"jud|crim")
}
```

A.4 Validating Gender Estimates

We evaluate our gender classifier by comparing it to legislators' self-reported gender, taking advantage of the fact that Wyoming provides the self-reported gender of each of its legislators. Table A.3 presents the cross-tabulation of legislators in Wyoming. The vast majority of legislators are correctly classified; only 1 woman is incorrectly classified as a man, and only 11 men are mistakenly classified as women. On the other hand, 263 men are correctly classified, as are 66 women.

Table A.3 – Validating Gender Classifications.

	Classification Procedure	
	Man	Woman
Confirmed Man	263	11
Confirmed Woman	1	66

A.5 Further Tests for Difference-in-Differences Design

Table A.4 tests the parallel trends for the difference-in-differences design for Table 1 in two ways. First, we add district-specific linear time trends to relax the parallel trends assumption, finding a similar estimate to the main table (this estimate is presented in the first column for comparison). As column 2 shows, district linear trends do not meaningfully change any of the estimates across the three panels. Second, we add a lead of the treatment variable (electing a woman legislator), to look for evidence of pre-trending. As column 3 shows, we find none.

Table A.4 – Women Are More Likely to Work on Women’s Issues.

First column reflects the overall difference between men and women. Second column includes district fixed effects to account for district preferences. Third column adds control for money raised in first election from women issues donors as a proxy for background.

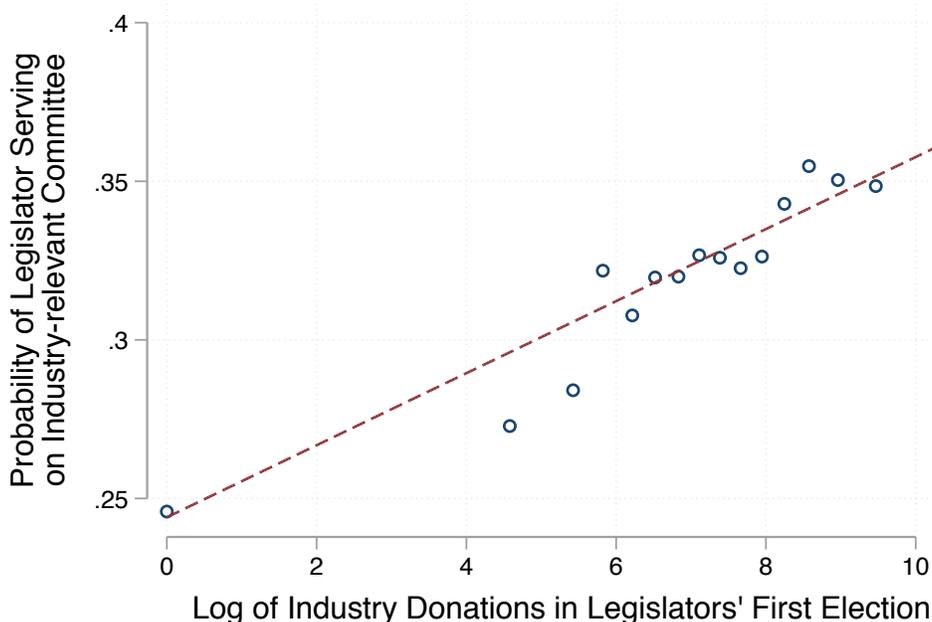
	(1)	(2)	(3)
	Member of Women’s Issues Committee		
Woman Legislator	0.14 (0.01)	0.15 (0.02)	0.15 (0.01)
Woman Legislator, t+1			-0.01 (0.01)
# Observations	74,879	74,879	43,721
Baseline Mean	0.32	0.32	0.32
	Chair of Women’s Issues Committee		
Woman Legislator	0.02 (0.00)	0.02 (0.01)	0.02 (0.01)
Woman Legislator, t+1			-0.01 (0.00)
# Observations	74,879	74,879	43,721
Baseline Mean	0.03	0.03	0.03
	Log # of Women’s Issues Bills		
Woman Legislator	0.13 (0.03)	0.17 (0.05)	0.17 (0.04)
Woman Legislator, t+1			-0.00 (0.03)
# Observations	12,763	12,763	7,827
Baseline Mean	1.41	1.41	1.41
Chamber-by-Year FEs	Yes	Yes	Yes
District FEs	Yes	Yes	Yes
District Linear Trends	No	Yes	No

Robust standard errors clustered by district in parentheses.

A.6 Fundraising Predicts Committee Service

In the paper, we control for fundraising from women’s issues sectors in a legislator’s first election as a proxy for their background. In this section, we show that first-election fundraising from particular industries strongly predicts future service on committees relevant to that industry—e.g., if a legislator raises a lot of money from the agriculture industry the first time she runs for election, she is more likely to serve on the agriculture committee in the future than a legislator who raises less money from the agriculture committee. This result suggests that first-election fundraising is a useful proxy for pre-existing attributes of different candidates that make them more or less relevant to a given industry, including their professional backgrounds before becoming politicians.

Figure A.1 – Predicting Committee Service Using First-Election Fundraising. The graph presents on the x-axis binned averages of total log money raised from industry j to legislator i and on the y-axis the probability that legislator i serves on a committee relevant to industry j at any time in his or her career.



Next, we can examine the correlation between legislator background and fundraising directly for legislators in California, using data on schoolboard elections.¹¹

Table A.5 shows the results. For all three outcome variables, we see that former schoolboard members raise more money from the education sector than do other candidates. This suggests that first-election fundraising from sectors is a useful indicator of legislator background, at least for education.

¹¹<https://www.sos.ca.gov/elections/county-city-school-district-ballot-measure-election-results/>

Table A.5 – Education Fundraising Relates to Candidate Background. Legislators who are former schoolboard members in California raise more money from the education sector the first time they run for the state legislature.

	\$ from Educ (1)	Log \$ from Educ + 1 (2)	Raise Any Money from Educ (3)
Schoolboard Member	6109.94 (3074.98)	2.69 (0.70)	0.27 (0.07)
# Observations	512	512	512

Robust standard errors in parentheses.