

The Missing Fingerprints: U.S. Women Legislators and International Development Aid

Katelyn E. Stauffer¹, Yoshiharu Kobayashi^{*2}, Kelsey M. Martin-Morales¹, Riley Lankes¹, Tobias Heinrich¹, and Catherine R. Goodwin¹

¹University of South Carolina, Columbia, USA

²University of Leeds, Leeds, UK

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Abstract

There is a optimism that a growing number of women in political office will reorient the focus of international politics towards more social and humanitarian issues. One basis for this optimism are arguments that women legislators hold distinct foreign policy preferences and act on them to affect changes in policy. However, we know little about gender differences in behavior of individual legislators on these issues. This study investigates the behavior of individual legislators of the United States, the most important actor in international politics, in the context of development aid. Analyzing a diverse set of legislative behaviors in the U.S. Congress, we find no evidence that women legislators behave any differently than men with regards to these issues. Beyond its contribution to our understanding of the making and future of American foreign policy, this study contributes to broader debates about women's representation and foreign policy.

Keywords: gender; legislative behavior; foreign policy; foreign aid; the United States

*Corresponding Author: Y.Kobayashi@leeds.ac.uk

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More women are gaining access to political power around the world, affording them increased opportunities to shape domestic and foreign policies. In public and academic discourses, there is optimism that this trend will shift international politics away from military interventions to social and humanitarian issues (Slaughter, 2012). Findings in the academic literature on gender and foreign policy may lend credence to this optimism. Evidence across countries shows that greater women’s representation in a parliament is associated with the country spending less on defense (Koch and Fulton, 2011; Clayton and Zetterberg, 2018), contribute more against climate change (Mavisakalyan and Tarverdi, 2019), involving itself less in violent international conflict (Caprioli, 2000; Regan and Paskeviciute, 2003), having lower tariffs (Imamverdiyeva et al., 2021), and contributing more to global humanitarian actions (Breuning, 2001; Shea and Christian, 2017). While these findings show a consistent pattern between gender, legislative representation, and foreign policy, the underpinnings of this relationship are not well-understood.

One explanation for the observed, country-level associations is the women’s values thesis, which contends that women politicians hold distinct foreign policy preferences on which they act to influence policy (Breuning (2001) but see also Togeby 1994; Koch and Fulton 2011; Hicks et al. 2016).¹ Such actions in parliament manifest themselves in promotion of more humanitarian and less militarist foreign policy, which in turn effect policy change. Researchers buttress the mechanisms behind the women’s value thesis by invoking findings from public opinion surveys and lab experiments that find women to be more altruistic and more supportive of peaceful and humanitarian foreign policy (Eichenberg, 2016; Andreoni and Vesterlund, 2001; Lizotte et al., 2020). However, we know remarkably little about whether these results extrapolate to elite politicians’ preferences² and, importantly, whether and through which specific legislative venues women politicians actually

¹ An important counter-explanation to the women’s values thesis is the social equity thesis (Breuning, 2001; Lu and Breuning, 2014), which contends that countries valuing equality see both increases in women representation in the legislature and higher levels of aid expenditure. While these two possible explanations are often examined jointly, in this article we focus on the women’s values thesis exclusively so that we can test it more rigorously.

² Exceptions are McGlen and Sarkees (1993), Holsti and Rosenau (1981), Imamverdiyeva et al. (2021), Bashevkin (2014), and Bashevkin (2018), which provide mixed evidence.

affect such humanitarian foreign policy.³

In this study, we focus on politicians' legislative behavior to directly test the key mechanism underlying the women's value thesis, which underlies much of the recent research linking parliamentary gender compositions and foreign policy. In the study most similar to our own, Lu and Breuning (2014) also explore this question by comparing the relationship between women's inclusion in legislatures and key cabinet posts and aid expenditure. They conclude that the relationship between gender and aid expenditures is likely rooted in social equity, after observing that though women's presence in legislative politics is positively associated with foreign aid, women heads of foreign-policy related ministries (presumably the women with the greatest policy influence in this area) are not. While this research certainly provides insights into the present study, it does not allow us to understand how gender may influence the specific behaviors of elites. Rather than making cross-institutional comparisons, we directly examine individual legislators' behaviors across multiple fora.

We argue that it is crucial to analyze multiple channels through which legislators can influence foreign policy-making. While roll-call voting is one obvious legislative activity to examine (Bendix and Jeong, 2020), it is also one of the most visible legislative activities and one that is highly structured so that legislators might be prevented from actuating preferences that deviate from their political party's (Snyder Jr and Groseclose, 2000). By examining multiple forms of legislative behavior, including bill co-sponsorship, conduct in hearings, and monitoring of the bureaucracy, this study provides a fuller analysis of whether—and in what ways—women legislators may affect foreign policy.

We conduct this analysis in the context of U.S. development aid. We focus on the United States because it is the country whose foreign policy has the most influence in the world and which still has a relatively small, yet increasing, share of women in the legislature. If the women's values thesis holds, we would predict that U.S. foreign policy will become more and more humanitarian at the margin. We think these stakes about the future makes it an important case to study the mechanisms undergirding the women's

³ An exception is Bendix and Jeong (2020) who study roll-call voting on military matters in the U.S. Congress and find limited evidence of gender-differences.

values thesis in this particular context.

We analyze data from the U.S. House of Representatives on roll-call voting (1981–2008), bill co-sponsorship (1985–2008), participation in hearings (2007–2018), and monitoring of the aid bureaucracy (USAID, 2007–2010). Since these fora have varying levels of visibility and discretion afforded to individual legislators, *if* the women’s value thesis holds, we expect to see gendered differences in behavior in *at least one* of our four outcomes.

Our estimation strategy directly targets the differences between women and men legislators beyond their gender, i.e. the selection effect. Indeed, unsurprisingly, our data reveal pronounced gender differences in covariates, including revealed ideology, constituents’ income, educational and ethnic profiles, and state-level ideological orientations. First, we use entropy balancing to reweight observations (by year and party) so that covariate averages are very similar across gender subsets (Hainmueller, 2012). Second, we also control for these covariates when estimating the effect of gender on the various outcomes. Combining entropy balancing and linear regression with covariates leads to a doubly robust estimator (Zhao and Percival, 2017), improving the confidence in the inferences from these data.

Our results provide no evidence that women act any differently than men in using legislative levers to influence U.S. aid policy. Across a series of models, all differences in behavior are tiny (mean estimates), at times opposite to the expected direction, and noisy. Our analyses by party and time periods do not reveal any noteworthy heterogeneity in the association between a legislator’s gender and behavior in the context of foreign aid. Our additional analyses using using random forests, which account flexibly for interactions and context-dependent gender differences, confirm our core findings (Breiman, 2001).

The results from the diverse set of legislative behavior provide little support for the women’s values thesis, at least in the United States. Women legislators do not advocate for development issues any differently than men. With the key mechanism of the women’s values thesis not at play in the United States, the optimism for a more humanitarian foreign policy as women enter parliament in the United States, the most powerful country

in the world and the largest overall donor of development aid, should be scaled back. Though the nature of our analysis varies considerably, our substantive conclusions are in line with Lu and Breuning (2014).

Even though our analyses examine legislative behavior and do not address preferences per se, the results do lead us to question the validity of the assumptions underlying the women’s value thesis. First, if women legislators have more humanitarian preferences, then we would expect that they use at least one of legislative levers to influence aid policy, especially those that are less visible to party leadership and constituents. However, women and men do not differ in promoting international development through less visible activities, such as monitoring USAID. Second, experimental evidence from a companion paper shows that U.S. voters neither punish nor reward any politician, women or men, for advocating for international development at the expense of promoting other issues (AUTHORS, 2021). Thus, there is no need for women politicians to fear electoral backlash from voters if they act on their humanitarian preferences and promote international development.⁴ Yet, our behavioral results show no gender differences in advocating for international development. Our study challenges arguments that women legislators have distinct, more humanitarian preferences than men in the context of foreign aid. We discuss this point at length in the discussion section.

While our focus is on international development, our results also speak to women’s representation and US foreign policy more broadly. Because aid is of relatively low salience and is perhaps the foreign policy area least-associated with masculinity, the electoral and institutional constraints faced by legislators should be weakest in this context. The fact that we find no evidence of women legislators promoting aid suggests that we should not expect gender differences to manifest in other foreign policy domains, where electoral, partisan, and other institutional constraints will be stronger. Indeed, a study on voting on military matters in the U.S. Congress finds that gender-differences largely disappear after accounting for legislators’ party affiliations (Bendix and Jeong, 2020).

Beyond this contribution to our understanding of the present and future of U.S. foreign

⁴ Similarly, if we had found differences in legislative behavior, electoral considerations would not incentivize women to take pro-aid stances.

policy, the paper engages with broader debates over explanations for the observed relationships between women representations and foreign policy (see also Lu and Breuning 2014). Our results clearly demonstrate the usefulness in analyzing individual politicians to directly test key mechanisms in these explanations (Bendix and Jeong, 2020; Imamverdiyeva et al., 2021). In addition, while our analyses are limited to the United States, our failure to find evidence for the woman’s value thesis call for more attention to alternative explanations and to potential scope conditions.

Gender and Development Aid

The relationship between women representation and foreign policy has been documented in a range of policy domains, including defense spending (Koch, 1997; Clayton and Zetterberg, 2018), tariffs (Betz et al., 2021; Imamverdiyeva et al., 2021), climate change cooperation (Mavisakalyan and Tarverdi, 2019), use of force (Caprioli, 2000; Caprioli and Boyer, 2001; Regan and Paskeviciute, 2003), and humanitarian intervention (Shea and Christian, 2017). The common thread is that greater parliamentary representation for women is associated with a more humanitarian and peaceful foreign policy. Prominently, many studies report fairly consistent, positive associations between women’s seats shares in national legislatures and aid expenditures (Breuning 2001; Lu and Breuning 2014; Hicks et al. 2016; Fuchs and Richert 2018; Yoon and Moon 2019; Okundaye and Breuning 2021, but see Lundsgaarde et al. 2007; Fuchs et al. 2014).⁵ A similar association is found with higher aid quality, an important dimension of foreign aid which assesses how well a given amount of aid is targeted to serve those most in need (Hicks et al. 2016; Heinrich and Kobayashi 2021).⁶ Unfortunately, our understanding of the mechanisms that produce these associations is scant.

In her foundational work, Breuning (2001) provides two explanations for the observed relationship between women’s representation and development aid, and almost all schol-

⁵ These findings have led scholars to employ the share of women as an instrument for development and democracy aid (Dietrich and Wright, 2014; Ziaja, 2020).

⁶ Some evidence also suggests that the gender of international development ministers is related to aid quality (Kleemann et al. 2016; Fuchs and Richert 2018; Dreher et al. 2015).

arship on the topic—whether implicitly or explicitly—draws on one of them. The first, which is the focus of the present paper, is the women’s values thesis. It contends that women politicians hold distinct foreign policy preferences, which manifest in observable differences in legislative output. The second, the social equity thesis, argues that overarching societal preferences and attitudes towards equality lead to higher expenditures on foreign aid and to more women in legislatures. In this paper, we focus on testing the mechanisms of the women’s values thesis.

The women’s values thesis holds that women parliamentarians have more development-minded preferences and act to further development goals. Research commonly draws on evidence that women are more altruistic towards others, particularly in contexts where social distance is high—as would be the case with foreign aid (Engel 2011; Eckel and Grossman 1998)—and are more inequality-averse than men (Dufwenberg and Muren 2006; Andreoni and Vesterlund 2001). Moreover, women hold more favorable attitudes towards domestic policies that promote equity and equality (Inglehart and Norris 2000; Luttmner and Singhal 2011) and development aid than men (Bauhr et al. 2013; Paxton and Knack 2012).⁷ Most of these studies focus on ordinary citizens rather than elites but the few elite studies that exist report mixed evidence (Holsti and Rosenau 1981; McGlen and Sarkees 1993; Bashevkin 2014).

On the other hand, the social equity thesis argues that overarching societal preferences and attitudes towards social equity lead countries to invest more in foreign aid, while also creating a political environment that is more conducive to women’s emergence in politics (Breuning, 2001; Lu and Breuning, 2014). This explanation calls into question the claim that women’s legislative actions would be different from men’s, implying that gender-based compositional differences cannot cause differences in foreign aid outcomes, and indeed foreign policy outcomes more broadly. In their study of the relationship between gender and foreign aid expenditure, Lu and Breuning (2014) find that while the percentage of women serving in parliament is associated with increased aid, female foreign ministers

⁷ While women are more likely to agree that helping poor countries is normatively important, answers become statistically indistinguishable from (sometimes even more negative than) men’s when asked about economic aid specifically (Chong and Gradstein 2008; Heinrich et al. 2016).

are associated with decreases in aid. Because foreign ministers are more powerful than rank and file parliamentarians, they conclude that this indicates the social equity thesis is the more compelling explanation. Making comparisons across positions however may miss potentially important nuances. Women are not randomly selected to hold ministerial positions (see Goddard 2019), and it could be the case that the type of women who are selected for these positions deviate from rank and file members in important ways.

Building on past research we contribute to this debate by focusing on the legislative behaviors of individual legislators. Assuming that gendered mass attitudes extend to elites, research has focused on women's overall presence in the parliament rather than focusing on the behavior of individual legislators that ought to give rise to the observed country-level outcomes. Yet, the women's value thesis posits a specific causal mechanism based on individual politicians' behavior in parliament. We argue that a shift towards individual legislators is a productive way to evaluate the women's value thesis and to ultimately contribute to the broader debate about women's representation and foreign policy.

We are not the first to study the behaviors of individual legislators to shed light on the relationship between gender and foreign policy. Notably, two prior studies systematically examine individual behavior of legislators, but the evidence for the role of gender in foreign policy is mixed and limited in scope. Bendix and Jeong (2020) analyze roll-call votes on security-related bills in the U.S. Congress and report limited evidence for gendered differences in voting behavior after accounting for legislators' routine backgrounds like party. Angevine (2017) and Imamverdiyeva et al. (2021) analyze voting and sponsorship of bills that deal with foreign women as policy targets and find evidence that women legislators are more likely than men to vote on and introduce such legislation, respectively. While these insights are useful, there are other fora available where legislators can influence policy-making, and it is unclear whether the results extend to other, broader policy domains like foreign aid. Most notably, our study departs from these previous studies by examining multiple forms of legislative behavior that vary in important ways, which we outline below.

Legislative Behavior on Foreign Aid

One implication of the women's values thesis is that if women's presence causes increases in aid expenditures, we should see men and women legislators engaging in observably different behaviors at the individual level. To test for such differences, in this paper we focus our attention on the behaviors of legislators in the U.S. House of Representatives. Though women remain underrepresented in the U.S., especially in comparison to other nations, their inclusion has been increasing over the last several decades. Moreover, if the link between women's inclusion and foreign aid is rooted in individual-level differences, we should still be able to observe differences in behaviors even in contexts such as Congress, though as we note below it is important to account for the institutional and contextual constraints (women) legislators face.

We focus our attention on the U.S. case for two reasons. First, there is great availability of data across many forms of legislative behavior (e.g. roll call voting, hearings, bill co-sponsorship, bureaucratic interventions) that are not readily available in other countries. By examining multiple forms of legislative behavior, we acknowledge that there are many paths through which legislators can effectuate their preferences, either through policy discussion, creation, or implementation. Thus, in order to determine whether and how women influence foreign aid expenditures, accounting for these multiple paths is essential.

Second, the U.S. House of Representatives has been researched more extensively compared to other national parliaments, enabling us to draw on the extensive knowledge to guide our inquiry. In particular, despite the strong partisanship and extent of women's underrepresentation in the U.S. Congress, existing work documents that gender differences do manifest in women's behavior in the U.S. Congress in some instances: the types of bills women (co)sponsor (Swers, 2002), the types of topics women discuss (Pearson and Dancey, 2011), and the tone used to talk about women's issues (Dietrich et al., 2019). Collectively, this work suggests that while institutional constraints might shape the ways in which women's behavior in office can diverge from men's, these factors are not so strong as to create uniformity. In other words, if women hold distinct preferences on foreign aid, as assumed by the women's values theses, there should be some opportunity for them to

act on these preferences.

In our analysis, we examine four legislative behaviors, all of which could be used to influence policy creation or implementation related to foreign aid: roll-call voting, bill (co)sponsorship, participation in legislative hearings, and contacting bureaucratic agencies. We select these behaviors because they vary considerably on two key dimensions: visibility and partisan control. Partisanship is the dominant organizing feature in American politics, making it important to take visibility and institutional control seriously. For example, behaviors that are highly visible, such as bill co-sponsorship, may disincentivize women from acting on pro-aid preferences if those preferences diverge from her party. Conversely, men might be incentivized to act in a pro-aid fashion (whether or not they hold this preference) if it matches their party. In either case, this would reduce differences in the behaviors observed from men and women legislators. In contrast, low-visibility behaviors, such as monitoring bureaucratic agencies, may allow differences in preferences to manifest as these types of behaviors are less likely to be monitored by party leaders and to draw ire in cases where representatives act in a manner discordant with the party.⁸

Likewise, the ability of political parties to structure behavior could influence the whether we see women engaging in different behaviors than men, even if they hold different preferences. For example, in the case of “agenda-response” behaviors such as roll-call voting, parties have the ability to structure not only how bills are voted on, but which bills come up for a vote (see Osborn 2012; Snyder Jr and Groseclose 2000). Because of the high degree of control afforded to parties and the structured nature of the choice-set offered to legislators in these contexts, party cohesion should be high which may limit the observance of gendered differences in behavior. In contrast, “agenda-setting” behaviors, such as bill (co-)sponsorship, are (relatively) less structured by parties in government and offer legislators more discretion in pursuing their policy interests (see Osborn 2012).

In the sections that follow, we test for differences between men and women for each of our four legislative behaviors. Roll-call voting—a highly visible, highly structured act—represents the hardest case for the women’s values thesis. Bureaucratic oversight in

⁸ Our data on such monitoring only became public via a Freedom of Information Act (FOIA) request by Lowande (2018).

contrast represents the easiest test in that it is a low visibility act that is not structured by party elites. By examining an array of legislative behaviors that vary across several dimensions, we argue that if women legislators truly hold distinct preferences on foreign aid, we should see differences emerge in at least one of the behaviors we look at.

Roll-call Voting

The first channel through which legislators can affect aid outlays that we study is roll-call voting on foreign aid bills. Roll-call voting offers that hardest test for the women's values thesis as it is highly visible and structured by political parties (Snyder Jr and Groseclose, 2000; Osborn, 2012). These features should both act as constraints on legislators to act on their preferences. Indeed, to the extent that scholars have observed gendered differences in roll-call voting in Congress, the results have been mixed. While early scholarship found that women were more liberal than their male counterparts (Welch, 1985; Frankovic, 1977), other research finds that, at this stage of the legislative process, gendered differences are minimal, and factors such as partisanship and ideology are more important predictors of women's (and men's) roll-call behaviors. Indeed, Frederick (2009) reports that to the extent men and women do engage in different roll-call behaviors, these differences have been diminishing over time as Congress has become increasingly ideologically polarized.

At the same time, scholars have observed differences in roll-call voting patterns in some circumstances. For example, Swers (1998a) finds that after accounting for partisanship, district characteristics, and a host of other controls, Congresswomen are more likely to vote in support of women's issues bills. Likewise, Frederick (2015) finds that while men and women who represent similar districts have "virtually indistinguishable voting records on the liberal-conservative policy dimension," women are more supportive of legislation dealing with women's interests than men (pg. 103). While not necessarily categorized as a women's issue in much of the literature, we do note that foreign aid is often related to women's issues through its impact on women, children, and issues such as education and healthcare. For that reason, we expect women to advocate for aid to a greater extent than men through their roll-call votes, if women legislator hold more pro-aid preferences

compared to their male counterparts.

We start with roll-call data collected by Milner and Tingley (2015), the most comprehensive dataset for bills related to foreign aid in the House of Representatives. The temporal domain spans the 97th to 110th Congresses. We restrict our attention to “economic aid” bills which deal mostly with amendments to proposals on aid appropriations that to seek a change in aid appropriations.⁹ Some bills seek increases to aid generally, whereas others decreases. For each legislator in a Congress and for each bill, we record whether the vote is a ‘yay’ for an outcome that would lead to an “increase” in aid compared to the opposite vote; whether one votes ‘nay’ on such outcome. Abstentions are also possible. We aggregate the votes so that we have the shares of ‘yay’ and ‘nay’ votes for each person in each Congress, which we multiply by 100 for each of reading.

We augment this dataset by adding a legislator’s gender as well as legislator-specific and constituency-level data, which prior work has theorized and examined to have effects on legislative action on foreign aid and on the probability of electing a woman representative. For legislator-specific variables, we include the legislator’s age and ideology (first dimension DW-NOMINATE score). For district-level variables, we obtain the percentage of people born abroad in the district; percent with B.A. and above degrees; percent hispanic; percentage white; percent unemployed; and, percent with incomes of more than \$10k, \$50k, and \$100k per year.¹⁰ Finally, state-level ideological leanings on social and economic issues influence who gets elected and what types of legislative behavior is sought. Thus, we add the estimated social and economic liberalism scores provided by Caughey and Warshaw (2016).

The resulting dataset has 4,232 legislator-Congress observations, spanning the 97th – 110th Congresses (1981–2008). 424 observations come from 136 unique women.¹¹ A first

⁹ We exclude bills on food and geopolitical aid. For one, food aid is known to be notoriously capture of the agricultural industry; for the other, geopolitical aid does not clearly relate to the development objectives implicit in the body of the work on the association between legislative compositions and aid allocations.

¹⁰ These data come from Ella Foster-Molina who assembled them from U.S. census data (<https://github.com/profEllaFM/congressData>)

¹¹ This dataset has minor missingness, which we remedy by using the multiple imputation implementation by Honaker and King (2010). Throughout, we conduct the estimations and calculations of effects for each of the ten imputed datasets.

glance at the data suggests a strong imbalance by gender across all covariates (Table A.1). If the imbalance is related to preferences on foreign aid as well, which we would expect for several covariates, then this selection effect causes problems for the inference. We take two approaches to remedy the issues, leading to a doubly robust estimation of the effects of a legislator’s gender on roll-call voting behavior. First, we reweigh the male legislators’ observations such that the averages of covariates match those in the women legislators’ data.¹² We use entropy balancing to balance the pre-specified moments of the “untreated” sample (i.e. male legislators) to those of the “treated” sample (i.e. female legislators) (Hainmueller, 2012). We conduct this reweighting within strata of party and Congress, ensuring that women legislators are only compared against co-partisans in the same Congress. The advantage of entropy balancing is that, unlike matching, it targets covariate imbalance directly, a source of confoundedness and bias. Figure A.1 shows how the sizable differences in the raw data largely disappear after reweighing.

Second, we control for indicators for party affiliation and different Congresses in a simple specification and for the legislator-specific and district-specific covariates in a larger specification.¹³ We estimate the models via OLS, bootstrap-clustering residuals by party-Congress. We obtain estimates from each imputed data set, pooling the estimates for a final result.

Table 1 gives the results for our main estimates. The first column shows the coefficient when regressing the percentage of ‘yay’ votes cast for aid-increase bills on a female-indicator as well as controls for the Congress and the legislator’s party, i.e. using the simple model specification. The coefficient is 0.8, which suggests that a woman legislator casts less than one percentage-point more votes for a bill that would increase foreign aid. To get a sense of the magnitude of this, consider that in 2021, there are 101 women in the House of Representatives. Crudely, our estimates suggest that there would be one more

¹² The specific covariates are: the home state’s social and economic liberalism, the first dimension DW-NOMINATE score, age, and the district’s percentages of people that are foreign born, are unemployed, hold a four-year college degree, and identify as white, and the percentages of households that make at least 15k/ 25k/ 35k/ 50k/ 75k/ 100k U.S. dollars per year, respectively.

¹³ This larger control set uses the same variables that we used for reweighing except that the household income and the unemployment percentages are replaced by a simple index of district prosperity. It is created by first turning all the variables in z-scores and then taking the mean across them.

	Voting yay on aid increase		Voting nay on aid increase	
	Simple	Detailed	Simple	Detailed
Gender				
Coefficient	0.8	0.6	-1.6	-1.4
95% CI	[-3.6; 5.1]	[-3.3; 4.5]	[-5.1; 2.0]	[-4.6; 1.8]
S.E.	(2.3)	(2.0)	(1.8)	(1.6)
<i>Specification</i>				
Party control?	✓	✓	✓	✓
Congress control?	✓	✓	✓	✓
District controls?		✓		✓
Legislator controls?		✓		✓
<i>Data</i>				
# Men	3899	3899	3899	3899
# Women	424	424	424	424
# unique Women	136	136	136	136
Congresses	97–110	97–110	97–110	97–110

Table 1: Estimates for gender-effects in roll call voting on foreign aid using all observations. The table reports the estimated coefficients on legislator gender (1=female). The Simple model specifications in Columns 2 and 4 includes indicators for party affiliation and Congresses. The Detailed specifications in Columns 3 and 5 further include legislator-specific (age, DW-NOMINATE) and district-specific variables (percentages foreign born, with college degrees, whites, unemployed, income of at least \$10k/ \$50k/ \$100k).

vote for an aid-increase bill compared to when the whole chamber consisted of men or if there were no gender differences. The effect is tiny. Even though the point estimate is in the direction suggested by the women’s values thesis, the uncertainty estimates show that the coefficient is statistically insignificant as the confidence interval contains zero and the standard error is almost four times the absolute value of the coefficient.¹⁴

The second outcome specification under the simple specifications shows a similar pattern. The third column gives the estimates using the percentages of ‘nay’ votes on the aid increases. While the change magnitude is larger than for the ‘nay’ percentages, the estimate is still in the predicted direction but also small in magnitude and also statistically insignificant. Adding the additional legislator-specific and district-specific covariates to either model (columns 2 and 4) reduces the respective point estimate (absolute value) as well as the standard error. Nonetheless, the estimates remain statistically insignificant.

¹⁴ We refrain from discussing any of the control variables because they were chosen to help with inference on the gender indicator and not to have a substantive interpretation.

In the appendix, we show results from two subset analyses. First, in Table A.1, we restrict our sample to legislators who are members of the Democratic Party. The four results are qualitatively the same, with magnitudes shrunk. We refrain from analyzing the subset of Republicans due the small number of women in it. Second, in Table A.5, we give the results for more recent Congresses (106th and later). The results are once more similar, with smaller magnitudes for ‘yay’ vote percentages and generally larger standard errors.

Bill Co-sponsorship

Having uncovered no evidence of gendered differences in roll-call voting, we next analyze co-sponsorship of bills. Like roll-call voting, co-sponsorship is a highly visible act. However, unlike roll-call voting, co-sponsorship offers legislators more flexibility. While majority parties exert strong control over which bills are voted on, the decision to create or sign-on to co-sponsor a piece of legislation and determine the content of the bill offers legislators relatively more agency. Therefore, we might expect that differential preferences on aid to manifest in the types of policies legislators (co-)sponsor, even if we do not observe differences in roll-call behaviors when these bills eventually come up for a vote. Indeed in her study, Swers (1998b) finds the largest differences between Congressmen and Congresswomen at this stage of the legislative process.

Existing evidence suggests that women use (co-)sponsorship as a means to promote women’s issues in a way that is distinctive from Congressmen (Volden et al., 2016; Celis, 2006; Franceschet and Piscopo, 2008; Swers and Larson, 2005). Congresswomen are more likely to (co-)sponsor feminist legislation (Wolbrecht, 2002; Swers, 2002), and more likely to sponsor bills related to “women’s issues” such as education, healthcare, and childcare (Swers, 2002, 2016; Swers and Larson, 2005). Angevine (2017) shows parallel patterns in foreign policy, where women are more likely to sponsor bills where foreign women are the policy target. Thus, if women legislators have different preferences on foreign aid, (co-)sponsorship may be a viable avenue to pursue these preferences.

Unlike for roll-call votes, we could not draw on existing research to determine which

bills address foreign aid. We first identified bills of potential interest for us out of the universe of bills. We started with the Congressional Bills Project (Adler and Wilkerson, 2013), which categorizes bills based on topic using the coding system of the Policy Agendas Project/Comparative Agendas Project. For each Congress between the 97th and 110th, we sampled 1/3 of all bills that are labeled either “International Affairs” or “Foreign Aid.” We then hired workers via Amazon’s MTurk platform to crowd-code whether each bill was about development aid or not, and if it was, we asked them to code whether the bill increased, decreased, or left the level of aid the same. This gives us 135 aid increase and 39 aid decrease bills, which we analyze separately. See Section B for details of this crowd-sourced coding process. Then, we used the Cosponsorships Network Data compiled by Fowler (2006a,b) to identified all sponsors and cosponsors for all bills to come before Congress.

	Cosponsoring aid increases		Cosponsoring aid decreases	
	Simple	Detailed	Simple	Detailed
Gender				
Coefficient	0.2	0.2	0.0	0.0
95% CI	[-0.4; 0.7]	[-0.2; 0.5]	[-0.6; 0.7]	[-0.8; 0.8]
S.E.	(0.3)	(0.2)	(0.3)	(0.4)
<i>Specification</i>				
Party control?	✓	✓	✓	✓
Congress control?	✓	✓	✓	✓
District controls?		✓		✓
Legislator controls?		✓		✓
<i>Data</i>				
# Men	4656	4656	4656	4656
# Women	558	558	558	558
# unique Women	131	131	131	131
Congresses	99–110	99–110	99–110	99–110

Table 2: Estimates for gender-effects in cosponsoring legislation on foreign aid using all observations.The table is constructed like Table 1.

As before, we aggregate the item-specific choices to the legislator-Congress level, calculating the percentage of aid-increase and aid-decrease bills that a person (co)sponsored. The covariates and model specifications are like before. In Figure A.1, we show that entropy balancing again reduces gender imbalances in this data set.

The results echo those from the roll-call votes as Table 2 shows. Across the different outcomes and the different model specifications for each, the point estimates are small in magnitudes and statistically insignificant. The results for the subset of Democrats and later time periods (Tables A.2 and A.6) look very similar. Even though, (co)sponsorship affords legislators more freedom to act perhaps in opposition to party leadership, the results are comparable to those for the roll-call analysis.

Congressional Hearings

So far we have found no evidence that women legislators are more likely to promote foreign aid compared to men. We now shift our attention to behaviors related to policy implementation that are relatively less visible. Examining the implementation stage of the policy process is essential because bureaucratic agencies handling aid have considerable discretion over the implementation of aid policy (Van Belle, 2004; Arel-Bundock et al., 2015; Fuchs and Richert, 2018). Legislative activities, such as making inquiries about policy implementation in hearings and directly contacting bureaucratic agencies, can essentially work as oversight over the aid bureaucracy (Milner and Tingley, 2015, Ch. 3). Thus, to the extent that women's presence in legislators is linked to aid expenditures, we must understand not only what bills are passed, but the practical reality of how these bills are implemented.

We turn our attention to participation in hearings. Even though it is visible behavior, most hearings are rarely attended by members of the committee and do not typically gain attention from the public. In this sense, legislators may be more free to act on their preferences in this forum as they are unlikely to attract attention.

We examine two questions in the context of hearings. First, we are interested in whether, among all members of the committees holding a given hearing, women legislators are more likely than men to participate in the hearing by making comments and inquiries about policy implementation. Second, we examine whether women legislators express greater support for aid than men given that they participate in those hearings.

We started by collecting transcripts of hearings in which senior personnel from US-

AID or the Millennium Challenge Corporation (MCC) appear accessing the ProQuest Congressional Database. First, we obtained 120 hearing transcripts dating back to 1970 in which “USAID” and “Millennium Challenge” appeared as keywords. Next, we examined titles and synopses to find those that covered topics relevant to the study.¹⁵ This led to 25 hearings,¹⁶ a number that drops to twelve when restricting attention to those held by the House of Representatives. While we can use these twelve for the attendance of meetings, the number declines to ten when examining expressed attitudes by this analysis necessitates that a hearing is attended by at least one woman and one man legislator.

Our first analysis concerns whether, among all members of the committees holding a given hearing, women legislators were more likely to participate in it at all. For this, we assemble a dataset with the potential attendee–hearing as the unit of analysis. This yields a data set of 424 men and 63 women legislator observations, spanning the 110th to 115th Congresses (2007–2019). The outcome variable is a dummy variable indicating if the legislator participated in the hearing or not, which we analyze with linear probability models (multiplying the “1” by 100) on reweighed data.

The second analysis concerns the positivity toward aid expressed by the attending legislators. Since attendance at these meetings is rare, the sample size drops dramatically (56 and 16 men and women legislator observations). We measure the expressed sentiment for each legislator in each hearing by coding random samples of speech fragments. For every speaker in every hearing, the authors coded speech fragments (three sentences by an attendee in a row) as negative/ neutral/ positive about development aid, or not about aid. Three authors each coded about 15% of the 6,251 possible fragments, and two others about 10%. We then estimate the latent aid sentiment at the speaker-level in a hearing via a measurement model to remove coder-specific idiosyncrasies (Caughey and Warshaw, 2015) (see Section C for full details). Specifically, we use the positively-coded expressions among

¹⁵ For example, the hearing entitled “The FY2014 Budget Request—U.S. Foreign Assistance Priorities and Strategy” was downloaded for use as the hearing focuses on USAID’s current priorities. On the other hand, one entitled “Meeting the Challenges of the Millennium” was not as it contained the relevant keywords but was not actually about foreign aid in any way. Further, if a transcript contained testimony from a USAID administrator, but the testimony was about the current events in a certain country and not primarily about aid, the transcript was omitted.

¹⁶ The estimation described below is run on the set of 25 hearings.

all coded utterances (by coder) to estimate positive aid attitudes. These latent attitudes are scaled to a standard normal distribution. These latent attitudes are examined as before, relying on reweighed data and linear regression models.¹⁷

	Attend hearings on aid Simple	Attend hearings on aid Detailed	Support aid at hearings Simple	Support aid at hearings Detailed
Gender				
Coefficient	2.2	-0.6	-0.5	-0.5
95% CI	[-9.4; 14.0]	[-13.4; 11.1]	[-1.5; 0.4]	[-2.3; 1.6]
S.E.	(6.2)	(6.2)	(0.5)	(1.0)
<i>Specification</i>				
Party control?	✓	✓	✓	✓
Congress control?	✓	✓	✓	✓
District controls?		✓		✓
Legislator controls?		✓		✓
<i>Data</i>				
# Men	424	424	56	56
# Women	63	63	16	16
# unique Women	20	20	7	7
Congresses	110–115	110–115	110–115	110–115

Table 3: Estimates for gender-effects in attendance and attitudes in aid-related hearings using all observations. The table is constructed like Table 1.

Table 3 gives the results. The gender effects on attending an aid-related hearing are tiny once again as well as statistically insignificant from zero with standard errors about three and ten times the sizes of the coefficients under the two specifications. The expressed sentiments are lower for women legislators by about half a standard deviation of the scale—a direction opposite to what the women’s values thesis predicts—but with again large standard errors. The results for only Democrats (Table A.3) and only the most recent years (Table A.7) are very similar.

Before moving on to our last analyses, a few remarks are in order. First, our data collection revealed that only 25 hearings were relevant to development aid in the 23 year

¹⁷ As there is measurement uncertainty over our outcome variable, we use a non-parametric bootstrap, taking one draw from the latent estimates. Results are averaged over these bootstraps and imputations. Further, due to the sample size, the entropy balancing proceeded without the Congress/party subsetting and by using a smaller covariate set (state economic and social liberalism, percent unemployed, age, ideology, dummy for whether one is a Democrat, percent of people with at least a 4-year college degree, and percent who identify as white).

period we examined (Senate and House), and only 12 are usable for our research here. This corroborates our claim that development aid is low-salience in the eyes of members of the Congress, suggesting that the electoral and institutional constraints should be relatively weak. That is, if women legislators have preferences for promoting aid, they should feel relatively free to act on such preferences in the hearings that do take place. Yet, the share of women attending those hearings is low. Second, it merits repeating how few observations there are in the analysis of expressed sentiments. Presumably just a few hearings taking place now or in the future could change the results we present.

Monitoring USAID

Our final analysis concerns lobbying bureaucratic agencies. Contacting and lobbying bureaucracies on behalf of (groups of) constituents represents another opportunity for legislators to shape policy implementation. While we found no gendered difference in participation and expressed sentiments in Congressional hearings, we noted that these are still context in which institutional structures are likely to shape legislative behavior. Informal, direct contacts with the bureaucracy, however, is not a structured activity which means legislators have far more autonomy in exercising their preferences. Moreover, such activities are not visible meaning that the constraints legislators face when engaging in these behaviors are minimal. However, such legislative requests can have influence on policy decisions and implementations by U.S. bureaucracies (Mills and Kalaf-Hughes, 2015; Ritchie and You, 2019).

We anticipate that if women hold distinct foreign policy preferences and want to act on such preferences, contacting agencies handling foreign aid should be one of the easiest places to effect policy change. Evidence from Lowande et al. (2019) indicates that women do indeed contact bureaucracies in a manner that differs from men, often in ways that can be seen as acting for women's interests. In the analysis that follows, we test whether women similarly use this avenue to influence the implementation of pro-aid policy.

In the analysis of direct intervention with the bureaucracy, we probe whether women legislators are more likely to monitor the primary bureaucracy for aid, USAID, than men

	Contacting USAID (total)		Contacting USAID (policy)	
	Simple	Detailed	Simple	Detailed
Gender				
Coefficient	-0.9	-0.9	-0.3	-0.3
95% CI	[-7.5; 5.7]	[-8.0; 6.3]	[-4.6; 3.9]	[-4.7; 4.1]
S.E.	(3.4)	(3.7)	(2.2)	(2.2)
<i>Specification</i>				
Party control?	✓	✓	✓	✓
Congress control?	✓	✓	✓	✓
District controls?		✓		✓
Legislator controls?		✓		✓
<i>Data</i>				
# Men	723	723	723	723
# Women	144	144	144	144
# unique Women	85	85	85	85
Congresses	110–111	110–111	110–111	110–111

Table 4: Estimates for gender-effects in contacting USAID using all observations. The table is constructed like Table 1.

legislators. Our analysis on bureaucratic oversight activities draws on data collected by Lowande (2018) who filed Freedom of Information Act requests for records of contacts made by individual members of Congress to USAID between 2007 and 2014.¹⁸ These contacts are requests by legislators to elicit some type of response from USAID, including congressional casework and general inquiries related to policy. A “casework” contact is defined as a request made by a legislator on behalf of a particular constituent or a group of constituents while a “policy” contact as an inquiry about policies but not serving particular constituents. We analyze any request and only the policy-related subsets.

We examine these indicators of legislative activity the same as before. Once again, entropy balancing reduced imbalances in this data set as well (Figure A.1). We use two binary outcomes, namely whether one contacted USAID at all or specifically about policy. For the ease of interpretation, we scaled the outcome by 100 so that contacting USAID is a 100 and not doing so zero.

Table 4 gives the results for all House members. The first two columns examine any

¹⁸ Our own FOIA request to the Millennium Challenge Corporation receive no response beyond the acknowledgment of the receipt of the request.

request made to USAID, the latter two only policy-related ones. Once again, the gender-based differences are tiny, and confidence intervals include zero. The results based only on Democrats (Table A.4) are very similar.

Discussion

Under the women’s value thesis, an increase in the number of women in a parliament should lead to more and higher quality development aid because women politicians more actively promote international development than their male counterparts. However, across legislative modes of influence, regardless if using all available data or subsets by party or more recent periods (106th Congress or later), women legislators are never observed to be significantly more supportive of foreign aid. The results are from the U.S. House of Representatives using a doubly robust approach that first reweighs the gender-specific subsets to be comparable (Zhao and Percival, 2017). In Section F in the appendix, we present a robustness check analysis using random forest models to explore Congress-specific gender differences; no noticeable deviations from the main results are found.

Our results reveal no gender-based differences in legislative behavior about foreign aid and therefore provide no support for the key mechanism in the women’s value thesis, at least in the important case of the United States. These behavioral results also have an important implication for one of the assumptions underlying the women’s value thesis. If U.S. women legislators had distinct preferences over aid policy, as assumed in the women’s value thesis, but feared punishment by their party leadership or constituents, there are channels, such as participating in hearings and directly contacting USAID, where their activities are considerably less visible but still can have influence on policy. Yet, our analyses of these fora show that men and women legislators do not behave any differently even when there is no need to fear of punishment. Therefore, the room for maintaining the assumption that women and men politicians have different preferences shrinks in light of the evidence from the diverse forms of legislative behavior.

Of course, there are other potential reasons why U.S. women legislators might choose not to act on their distinct preferences if they hold them. First, women politicians may

mask their true preferences for fear of electoral backlash. After all, the primary goal of any politicians is to survive in office. Advocating for international development at the expense of promoting other, salient issues might harm politicians electorally, women in particular, by reinforcing feminine stereotypes that voters generally do not deem favorably in selecting leaders (Eagly and Karau, 2002; Bauer, 2019; Vinkenburg et al., 2011). Promoting international development may fall into the category of feminine stereotypes.

In a companion paper, we have examined this electoral backlash possibility by studying whether it pays or harms a legislator’s election prospects to advocate for international development (AUTHORS, 2021). Using a conjoint experiment, we analyze how voters select legislators to represent them in Congress based on bundles of political messages by legislators of differing genders (and parties). We find little evidence that any legislator, man or woman, is systematically punished, or rewarded, for promoting international development in their communication with constituents. Therefore, *any* legislator in the U.S. should be able to advocate for international development without fear of electoral backlash. Yet, women legislators do not advocate for development issues any differently than their male counterparts as the results in this paper shows. Thus, U.S. women legislators are likely not masking their preferences for fear of sanction at the ballot box.

Second, women politicians may be masking their true preferences due to the lack of critical mass of women necessary to translate women’s preferences into policy change. However, critical mass theories have historically been contested (Sarah and Mona, 2008) with some arguing that gender differences are actually more likely to manifest when women are fewer in number (Crowley, 2004). We also note, that despite women’s underrepresentation in the U.S. Congress, many studies do find evidence of gendered differences in behavior (Swers, 2002; Pearson and Dancey, 2011; Dietrich et al., 2019; Frederick, 2015). Our results using later years, when the share of woman legislators is higher, are the same as before, suggesting that changes at the observed margins of the mass are not consequential. While we can only advance our indirect evidence contra the critical mass argument here, the room for maintaining the foundational assumption of the women’s value thesis is considerably small.

Conclusion

A growing number of women serve in politics in the United States and across the world, a trend that is expected to continue. This raises an important question: will they re-orient international politics more toward humanitarian issues? In this study, we directly examine this question by studying individual legislators' behavior in the United States, a country for which the answer to this question is particularly relevant: it is among the most influential countries and the share of women in parliament is still growing. However, we find no gendered differences in how U.S. legislators approach development aid even when they are able to exercise discretion and should not be afraid of punishment by party leaders (and constituents). These findings strongly suggest that the recent and future increases in women's representation in U.S. Congress are unlikely to lead to a greater emphasis by the elected women on international development and more development aid by the U.S. government.

This study also contributes to broader debates in the literature on gender and politics. Researchers have grappled with, debated, and interrogated competing explanations to explain observed relationships between gender, representation, and foreign policy. Our findings provide no support for one prominent explanation, the women's value thesis. An alternative account is the social equity thesis (Breuning, 2001; Lu and Breuning, 2014; Caprioli, 2000; Koch and Fulton, 2011; Brysk and Mehta, 2014), which holds that societal attitudes towards social equity lead countries to pursue more humanitarian and peaceful foreign policies, while also creating a political environment that is more conducive to women's emergence in politics. In line with past research (i.e. Lu and Breuning 2014), our findings suggest that the social equity thesis is a more fruitful framework for future research, which should also do more to examine societal preferences as determinants of foreign policies.¹⁹

While the U.S. is the country with the largest aid budget, it is important to consider to which extent the our results are transportable to other aid donors, such as Germany,

¹⁹ See however Imamverdiyeva et al. (2021) for legislative behavioral differences in the realm of tariffs on internationally traded goods.

United Kingdom, Japan, and the European Union. One obvious feature of the U.S. case might limit the transportability even though we are doubtful about this limit: U.S. citizens are historically among the least enthusiastic supporters of development assistance compared to people in other donors. Thus, the lack of electoral rewards or punishment for promoting international development in the U.S. context may not be surprising (which we find in the companion paper, see AUTHORS (2021)). By contrast, voters in other donors are generally more supportive and may be more willing to reward politicians, especially women, for emphasizing international development. While this scenario is possible, many other donors have proportional electoral systems (and their variants) in which political parties have strong influence on legislators' behavior. This means that the role voters play in shaping individual legislators' behavior is relatively smaller compared to those in the United States. That said, this alternative causal mechanism could be at work despite the powerful role played by political parties. Research on a wider variety of donors would generate useful insights into the relationship between gender and foreign aid.

More generally, our study demonstrates the benefits of shifting the level of analysis from country-level to individual politicians. We call for future research to unpack the "black box" and study women *in* foreign policy-making to better adjudicate between competing explanations (Smith, 2020; Williams, 2017). At the same time, our findings call for greater attention to the social equity thesis, which studies have so far tested at the macro-level (Caprioli, 2000; Koch and Fulton, 2011; Brysk and Mehta, 2014). Here, a shift towards the individual level would be productive as well. For example, in the context of development aid, the thesis would imply several hypotheses, including that citizens who support gender equality should be more likely to support development aid. A better understanding of the micro-foundation of these prominent explanations is strongly needed in the literature on gender and foreign policy.

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The Missing Fingerprints:
U.S. Women Legislators and Development Aid

Web Appendix
Not for Print Publication

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A Balancing

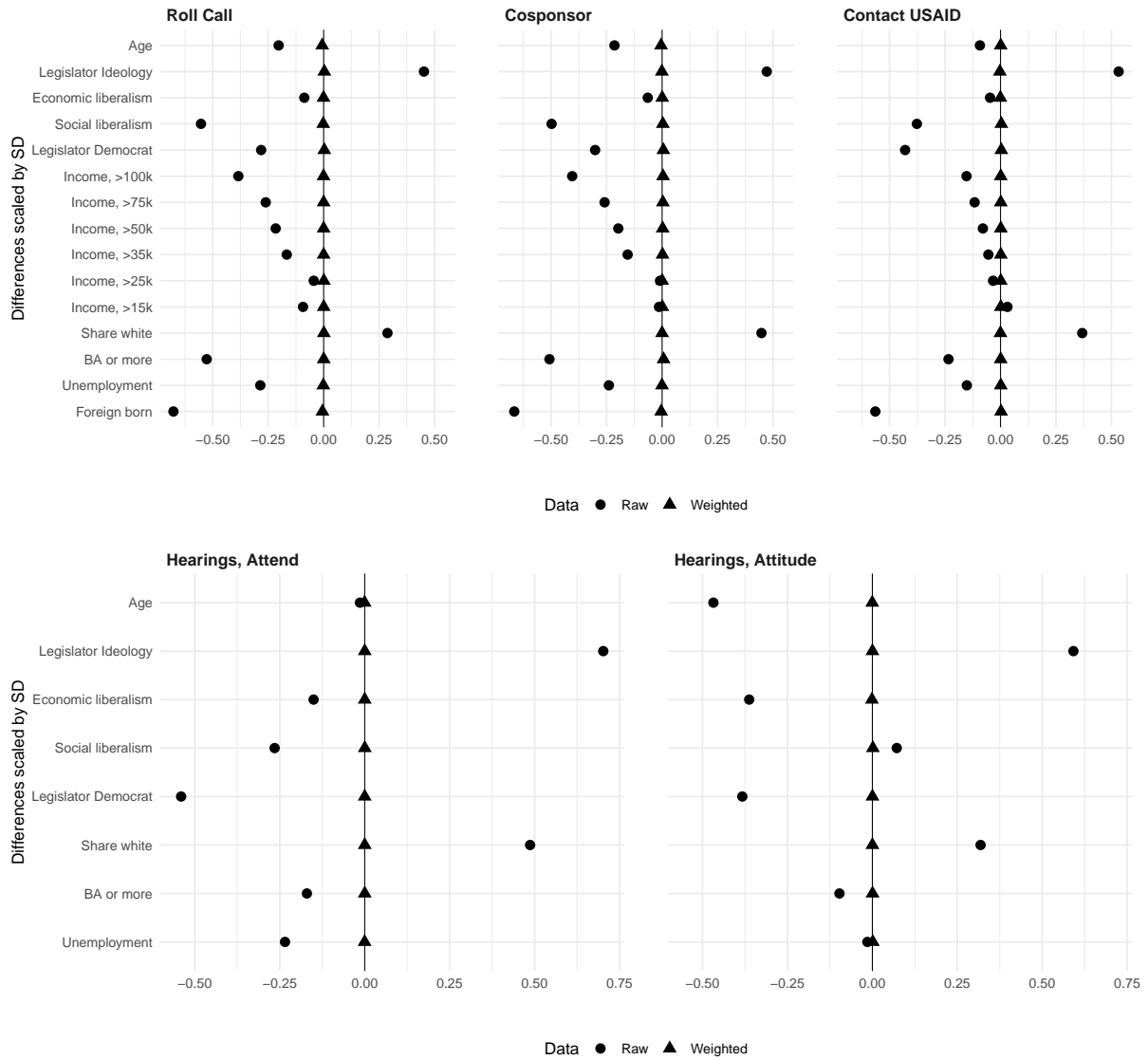


Figure A.1: Covariate balance between men and women legislators across data sets. Each panel a different data set used for analysis. The x-axis in each gives the standardized difference between men and women legislators; dots show the differences in the raw data, triangles for the reweighted data based on stratified entropy balancing.

B Additional Details on Co-sponsorship Analysis

To examine whether men and women co-sponsor aid legislation at different rates, we use the Cosponsorships Network Data by Fowler (2006a, b). Using this data, we are able to obtain the list of cosponsors on every piece of legislation to come before the U.S. House of Representatives and Senate from the 93rd Congress to the 110th Congress. Bills of potential interest were identified using information from the Policy Agendas Project. The Policy Agendas Project classifies each piece of legislation as falling under one of twenty-three potential topics, followed by a sub-topic classification. For example, a bill related to foreign aid may be classified as falling under the topic of “International Affairs” and the subtopic of “Foreign Aid.”

To identify which of these bills pertain to foreign aid (and the content of these bills), we conducted crowd-coding using MTurk workers. For each Congress, we randomly sampled one-third of the bills of potential interest for coding. Workers on MTurk were given brief descriptions of a given bill from the Congressional Archive. After reading this summary, workers were asked to identify: 1) whether the bill was related to foreign aid, and 2) if so, did the bill increase aid, decrease aid, or did not influence the amount of aid. Our procedure was designed to assign multiple workers to each bill. In cases where our workers reached a consensus, bills were coded based on this consensus. If consensus was not achieved, the researchers read the bill summary in question and made a determination about the appropriate coding. All in all, we ended up with 39 decrease and 135 increase bills.

C Additional Details on Hearing Analysis

The hearings used in this analysis are a collection of full-text transcripts released by U.S. Congress and cataloged in the ProQuest Congressional Database. The database contains a record of all Congressional hearing transcripts dating back to 1824, with the title, synopsis of the topics covered, date, members, and full text of the hearing. We first filtered this database to search for hearings dating back to 1970, then keyword-searched these hearings for “USAID” and “Millennium Challenge.” This cast a wide net, yielding approximately 120 hearings in the date range containing those keywords. These were further filtered by title and synopsis using a keyword search, downloading only the ones that cover topics relevant to the study. For example, the hearing entitled “The FY2014 Budget Request—U.S. Foreign Assistance Priorities and Strategy” was downloaded for use as the hearing focuses on USAID’s current priorities. On the other hand, one entitled “Meeting the Challenges of the Millennium” was not as it contained the relevant keywords but was not actually about foreign aid in any way. Some transcripts were removed out due to a lack of relevance for foreign aid. For example, if a transcript contained testimony from a USAID administrator, but the testimony was about the current events in a certain country and not primarily about aid, the transcript was omitted. In the end, 25 transcripts of hearings were retained. While we estimate the measurement model below on these 25 hearings, the usable number for inferential purposes falls to twelve for the study of whether committee members show up as we only examine the U.S. House. For the expressed attitudes, the number declines to ten because we require at least one woman and one man to be present at the hearing.

Our interest lies in measuring the positivity toward aid that hearing attendees expressed. We split each speaker’s totality of remarks at a hearing into text segments three sentences in length. Five of the authors coded these fragments without knowing the hearing, speaker, and date. Specifically, we coded using these instructions: “if you can reasonably infer that the paragraph is about funds for promoting international development—e.g. poverty alleviation, education, better access to clean water, etc.”; if the answer is “yes”, the coder should judge whether the speaker is “defending development aid or advocating for an increase or better use of aid” (positive), if the legislator “is advocating for a reduction or withdrawal of aid” (negative), or if it is neutral.²⁰

All in all, there are 6,251 such speech fragments. Three authors coded randomly about 15%, two about 10% of them. Many fragments were coded multiple times.

For each speaker–hearing, we estimate the latent expressed sentiment toward aid using our coded fragments (three sentences). Let Y_{ij} denote the number of positive segments out of N_{ij} coded segments for speaker-hearing i coded by coder j . The probability that

²⁰ Neutral should not be used if the statement contains positive and negative expresses. In such a case, an overall assessment should be made.

a given segment of i is coded as positive by j is modeled as a function of the speaker's latent sentiment toward aid (θ_i) adjusted by a coder specific offset (κ_j) and scaled by the variability of legislators' expressions and coders' judgements of i and j , respectively (σ_i, τ_j). We use the normal cumulative density function as the link function to relate the latent sentiment to the probability parameter in a Binomial distribution. Taken together, we have

$$Y_{ij} \sim \text{Bin}(\pi_{ij}, N_{ij}),$$

with the key probability parameter modeled²¹ as

$$\pi_{ij} = \Phi\left(\frac{\theta_i + \kappa_j}{\sqrt{\sigma_i + \tau_j}}\right).$$

The scale of the parameter main interest, θ_i , the latent support for aid by speaker-hearing (i), is set by assigning a standard normal prior.²² The model is estimated using JAGS. A second model uses the sum of positive and neutral (ie. non-negative) codings as Y_{ij} .

Figure A.2 shows the summary of the results for the ten hearings that we are using in the analysis. Each panels gives the estimates for one hearing; the speakers are on the y-axis, the x-axis indicates θ_i .

²¹ The items in the denominator are restricted to be positive, and κ_j is given a N(0,1) prior.

²² The model is a close adaptation of Caughey and Warshaw (2015).

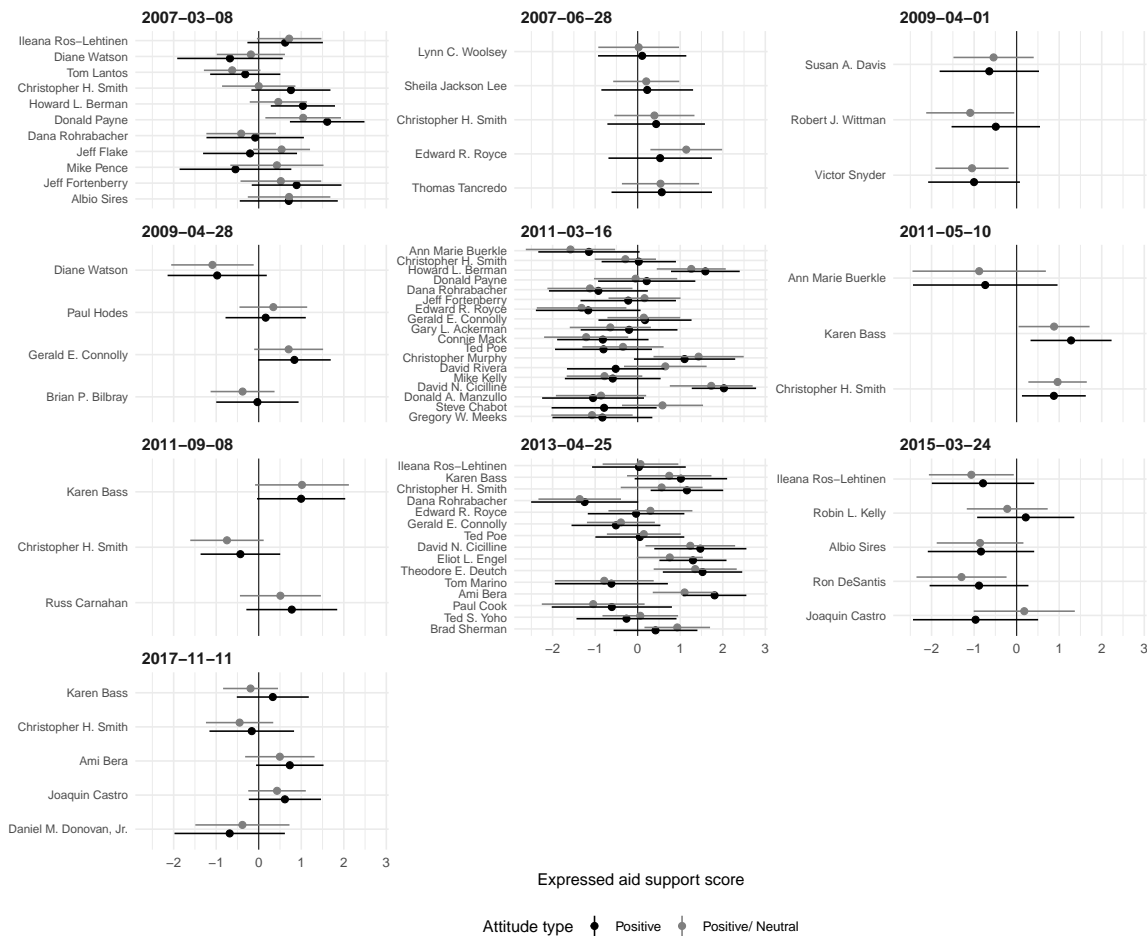


Figure A.2: Estimates of θ for every speaker by hearing. The dot denotes the median estimate, the line segments the 95% central credible intervals. Black dots/ lines show results using only positive utterances, whereas grey ones use non-negative instances.

D Subset analysis using only Democrats

D.1 Roll-call

	Voting yay on aid increase		Voting nay on aid increase	
	Simple	Detailed	Simple	Detailed
Gender				
Coefficient	-0.6	-0.5	-0.4	-0.4
95% CI	[-4.5; 3.4]	[-5.0; 4.0]	[-3.6; 2.8]	[-3.9; 3.1]
S.E.	(2.0)	(2.3)	(1.7)	(1.8)
<i>Specification</i>				
Party control?	✓	✓	✓	✓
Congress control?	✓	✓	✓	✓
District controls?		✓		✓
Legislator controls?		✓		✓
<i>Data</i>				
# Men	2055	2055	2055	2055
# Women	283	283	283	283
# unique Women	88	88	88	88
Congresses	97–110	97–110	97–110	97–110

Table A.1: Estimates for gender-effects in roll call voting on foreign aid using only Democrats. The table reports the estimated coefficients on legislator gender (1=female). The Simple model specifications in Columns 2 and 4 includes indicators for party affiliation and Congresses. The Detailed specifications in Columns 3 and 5 further include legislator-specific (age, DW-NOMINATE) and district-specific variables (percentages foreign born, with college degrees, whites, unemployed, income of at least \$10k/ \$50k/ \$100k).

D.2 Co-sponsorship

	Cosponsoring aid increases		Cosponsoring aid decreases	
	Simple	Detailed	Simple	Detailed
Gender				
Coefficient	0.3	0.3	-0.1	0.0
95% CI	[-0.4; 1.0]	[-0.1; 0.7]	[-0.6; 0.5]	[-0.9; 0.8]
S.E.	(0.3)	(0.2)	(0.3)	(0.4)
<i>Specification</i>				
Party control?	✓	✓	✓	✓
Congress control?	✓	✓	✓	✓
District controls?		✓		✓
Legislator controls?		✓		✓
<i>Data</i>				
# Men	2394	2394	2394	2394
# Women	371	371	371	371
# unique Women	86	86	86	86
Congresses	99–110	99–110	99–110	99–110

Table A.2: Estimates for gender-effects in cosponsoring legislation on foreign aid using only Democrats. The table is constructed like Table 1.

D.3 Hearings

	Attend hearings on aid		Support aid at hearings	
	Simple	Detailed	Simple	Detailed
Gender				
Coefficient	4.1	-3.8	-0.6	0.0
95% CI	[-10.7; 18.3]	[-18.0; 10.1]	[-2.1; 0.8]	[-16.3; 16.6]
S.E.	(7.5)	(7.3)	(0.7)	(14.6)
<i>Specification</i>				
Party control?	✓	✓	✓	✓
Congress control?	✓	✓	✓	✓
District controls?		✓		✓
Legislator controls?		✓		✓
<i>Data</i>				
# Men	186	186	26	26
# Women	56	56	9	9
# unique Women	16	16	5	5
Congresses	110–115	110–115	110–115	110–115

Table A.3: Estimates for gender-effects in attendance and attitudes in aid-related hearings using only Democrats. The table is constructed like Table 1.

D.4 USAID Contact

	Contacting USAID (total)		Contacting USAID (policy)	
	Simple	Detailed	Simple	Detailed
Gender				
Coefficient	-3.3	-3.3	-1.1	-1.2
95% CI	[-12.0; 5.4]	[-13.7; 6.6]	[-7.1; 5.0]	[-6.7; 4.2]
S.E.	(4.4)	(5.1)	(3.1)	(2.8)
<i>Specification</i>				
Party control?	✓	✓	✓	✓
Congress control?	✓	✓	✓	✓
District controls?		✓		✓
Legislator controls?		✓		✓
<i>Data</i>				
# Men	383	383	383	383
# Women	107	107	107	107
# unique Women	63	63	63	63
Congresses	110–111	110–111	110–111	110–111

Table A.4: Estimates for gender-effects in contacting USAID using only Democrats.The table is constructed like Table 1.

E Subset analysis using recent data (106th Congress and later)

E.1 Roll-call

	Voting yay on aid increase		Voting nay on aid increase	
	Simple	Detailed	Simple	Detailed
Gender				
Coefficient	-0.1	-0.2	-1.6	-1.5
95% CI	[-8.4; 8.1]	[-6.5; 6.1]	[-9.1; 5.9]	[-6.7; 3.5]
S.E.	(4.2)	(3.3)	(3.8)	(2.6)
<i>Specification</i>				
Party control?	✓	✓	✓	✓
Congress control?	✓	✓	✓	✓
District controls?		✓		✓
Legislator controls?		✓		✓
<i>Data</i>				
# Men	1108	1108	1108	1108
# Women	186	186	186	186
# unique Women	93	93	93	93
Congresses	106–110	106–110	106–110	106–110

Table A.5: Estimates for gender-effects in roll call voting on foreign aid using observations since 106th Congress. The table reports the estimated coefficients on legislator gender (1=female). The Simple model specifications in Columns 2 and 4 includes indicators for party affiliation and Congresses. The Detailed specifications in Columns 3 and 5 further include legislator-specific (age, DW-NOMINATE) and district-specific variables (percentages foreign born, with college degrees, whites, unemployed, income of at least \$10k/ \$50k/ \$100k).

E.2 Co-sponsorship

	Cosponsoring aid increases		Cosponsoring aid decreases	
	Simple	Detailed	Simple	Detailed
Gender				
Coefficient	0.2	0.2	-0.1	-0.1
95% CI	[-0.6; 1.0]	[-0.2; 0.5]	[-0.5; 0.3]	[-0.4; 0.2]
S.E.	(0.4)	(0.2)	(0.2)	(0.1)
<i>Specification</i>				
Party control?	✓	✓	✓	✓
Congress control?	✓	✓	✓	✓
District controls?		✓		✓
Legislator controls?		✓		✓
<i>Data</i>				
# Men	1851	1851	1851	1851
# Women	313	313	313	313
# unique Women	93	93	93	93
Congresses	106–110	106–110	106–110	106–110

Table A.6: Estimates for gender-effects in cosponsoring legislation on foreign aid using observations since 106th Congress. The table is constructed like Table 1.

E.3 Hearings

	Attend hearings on aid		Support aid at hearings	
	Simple	Detailed	Simple	Detailed
Gender				
Coefficient	2.7	-0.2	-0.5	-0.5
95% CI	[-8.4; 14.3]	[-11.6; 11.2]	[-1.4; 0.5]	[-2.5; 1.4]
S.E.	(5.9)	(5.9)	(0.5)	(1.0)
<i>Specification</i>				
Party control?	✓	✓	✓	✓
Congress control?	✓	✓	✓	✓
District controls?		✓		✓
Legislator controls?		✓		✓
<i>Data</i>				
# Men	415	415	53	53
# Women	72	72	19	19
# unique Women	21	21	7	7
Congresses	110–115	110–115	110–115	110–115

Table A.7: Estimates for gender-effects in attendance and attitudes in aid-related hearings using observations since 106th Congress. The table is constructed like Table 1.

F Random Forest Estimates

This section explores the robustness of our results by using a random forest model. This analysis gives us two things. First, we can account for potential interactions between the control variables and our “treatment” (whether a legislator is a woman or man). Second, the first point lets us examine heterogeneity of effects over time, something that not only gives us a richer descriptive patterns but also acts as a robustness check in itself.

For each outcome, we split the available data by gender, draw a non-parametric bootstrap draw for each, and then estimate two random forest models (by gender).²³ For each Congress in the data, we take the woman legislators’ observed covariates and get a prediction under each model. Last, we save the difference in means between the predictions. This procedure is repeated 1,000 times for each outcome.

Figure A.3 shows the results for all outcomes, except for the sentiments expressed at the hearings as the data set is too small for this type of analysis. Each panel gives the results for one outcome. In each, the y-axis indicates the mean difference between the estimate for the woman and man legislators. The x-axis denotes the Congress number. Each dot gives the conditional result from one bootstrap iterations. Semi-transparency and horizontal jitter were applied to reduce over-plotting issues.

²³ We use the tuning parameter setting tuned on the full data.

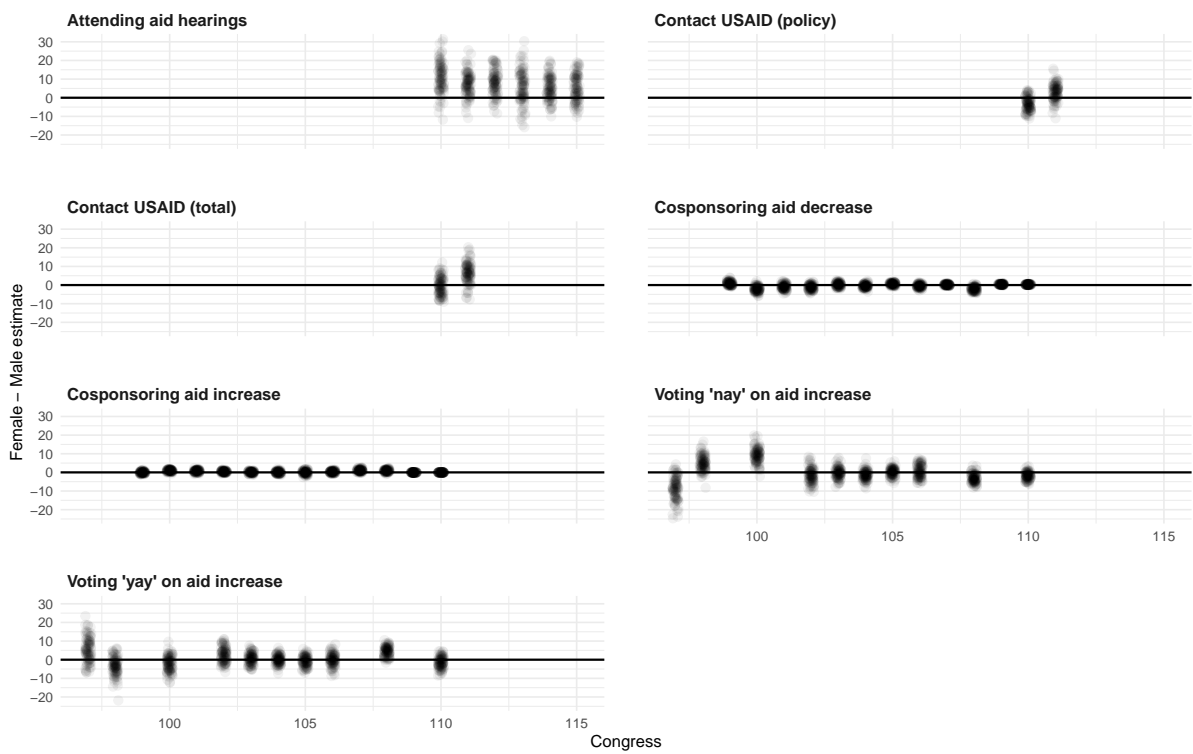


Figure A.3: Gender effects in legislative behavior across Congresses; random forest estimates. Each panel plots the gender effect estimated for each Congress in the available data. The y-axis shows either a difference in shares (cosponsoring, roll calls) or probabilities (attending hearings, contacting USAID), multiplied by 100. Semi-transparency and horizontal jitter were applied to reduce overplotting issues.