The Effect of Female Leadership on Contracting from Capitol Hill to Main Street

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Abstract

This paper provides novel evidence that female politicians increase the proportion of US government procurement contracts allocated to women-owned firms. The identification strategy uses close elections for the US House of Representatives. The effect concentrates in local contractors and persists after the female politician's departure. The more gender-balanced representation in government contracting does not seem to be associated with economic costs, as the firm characteristics of the average contractor and contract performances are unchanged. By analyzing congressional requests from legislators to federal agencies, we show that female politicians affect procurement contract allocation through individual oversight.

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Roughly 50% of the population is female, but only approximately 36% of all small businesses are owned by women.[1] The share of government contracts allocated to women-owned small businesses is even smaller, at around only 7% between 2008 and 2020.[2] Women-owned firms face more barriers in government contracting than their male-owned counterparts and are underrepresented relative to their share in the economy. The odds that a contract is allocated to a women-owned business is about 21% lower than otherwise similar companies (Beede and Rubinovitz, 2015; Bates, 2002).[3] This paper studies the impact of female politicians on government spending being distributed to women-owned businesses (WOBs).

We find that female House representatives cause an increase in government contracts allocated to women-owned small firms. We establish causality by exploiting narrowly decided mixed-gender elections. The effect is strongest among local contractors and persists after the female politician's departure. We fail to find evidence of significant economic costs of WOBs procuring contracts, neither on ex-ante auction outcomes (i.e., firm characteristics) nor for most ex-post performance measures (i.e., contract modifications). Using Freedom of Information Act data on the communication between representatives and federal agencies, we show that female legislators use individual oversight to influence the contract allocation process.

Theory suggests politicians care about being elected but also have incentives to implement policies that cater to their preferences (Alesina, 1988; Besley and Coate, 1997). Consequently, theory is ambiguous as to how the share of government contracts going to WOBs will be impacted when a congresswoman is elected.

On the one hand, several theories predict an increase in WOB contractors. First, politicians might exhibit positive in-group bias leading to female representatives increasing WOB contract allocation, due to taste-based discrimination (Becker, 1957), statistical-based discrimination

[1] `https://www.census.gov/library/visualizations/2017/comm/women_owned_businesses.html`.

[2] Calculated from `https://www.usaspending.gov/`.

[3] For evidence on gender bias in business and access to capital, see Coleman and Robb (2009); Bellucci et al. (2010); Wu and Chua (2012); Alesina et al. (2013); Guzman and Kacperczyk (2019); Hebert (2020); Ewens and Townsend (2020).

with correct beliefs (Phelps, 1972; Arrow, 1998), or statistical-based discrimination with miscalibrated beliefs (Bordalo et al., 2016). Second, a theory of active representative bureaucracy (Mosher, 1982) states that politicians might use their discretion to eliminate discrimination and pursue the interests of the group of constituents they represent. Taken together, these factors can increase the share of government contracts going to WOBs. Alternatively, social identity theory (Tajfel, 1978, 1982) describes several phenomena that might lead to a decrease in this share due to positive out-group bias. First is the value threat theory (Duguid et al., 2012), which is the concern about not being seen as a valued group member. Second is "queen-bee" phenomenon: women in powerful positions and those who are members of an elite profession tend to distant themselves from other women (Derks et al., 2011). In both cases, minority individuals — female legislators in our set-up — dis-identify with members of their category and self-identify as a member of the majority group.[4]

The election of a female politician is not random and leads to possible endogeneity concerns. We exploit close mixed-gender elections to overcome endogeneity issues. The ex-ante outcomes of close elections are uncertain and provide quasi-random variation in election winners. As such, it is as if the gender of the winning candidate is exogenously assigned.[5] 56 mixed-gender close elections occur between the 109th and 115th Congresses. We merge the close election data with detailed information on individual government procurement contracts obtained from the Federal Procurement Data System-Next Generation (FPDS-NG). The final sample consists of 30,644 unique contracts awarded in the close election congressional districts before and after the individual elections.

[4]Another framework through which to consider the relation between female politicians and WOB contract allocation is the rent extraction theory. Shleifer and Vishny (1994) highlight the exchange of government contracts and political benefits between politicians and firms. The theoretical predictions can go in either direction. For example, female politicians might provide contracts to WOBs in exchange for their votes. However, the politicians might also reduce the amount of contracts going to WOBs because of the small size of these firms and hence potentially insignificant campaign contributions.

[5]Close elections as an identification strategy were first used by Lee (2001) and have since been used by, among others, Lee et al. (2004); Lee (2008); Do et al. (2012); Akey (2015); Do et al. (2015); Akey and Lewellen (2017), and Adams and Mosk (2019). See Hasan et al. (2020) for an application of exploiting closed elections for as-if-random assignment of the legislator's gender.

We focus on small businesses because it provides a number of advantages. First, 94% of women-owned firms are small businesses and small businesses account for a large portion of the US economy.[6] Second, in contrast to collective political efforts such as legislative changes, federal procurement contracting can be linked to an individual district representative and an individual recipient.

We show that the election of a female representative increases the probability that a government contract is awarded to a women-owned firm by 2.7 percentage points. The magnitudes are quite substantial in comparison to both the unconditional level as well as the time trend over the last two decades. Specifically, the effect amounts to roughly one-seventh of the unconditional probability in 2018. The unconditional probability that a government procurement contract is awarded to a WOB increased from 15.2% in 2002 to 20.1% in 2018, a change of 4.9 percentage points, slightly less than double the effect we attribute to the election of a single female representative. The effect is highly statistically significant at the 1% level and stable in magnitude across specifications. In the full specification we include several control variables as well as fixed effects to capture the contract product and service type, the subagency awarding the contract, the Congress, and the district.

We corroborate the claim that the increase in female contractors is caused by the gender of the elected official through a number of validity tests. First, causal interpretation of the research design hinges on the assumption that the gender of the elected representative is as if randomly assigned (Imbens and Lemieux, 2008). Empirically we show that the probability of a female candidate winning an election is smoothly distributed around the 50% vote margin threshold. Second, we show that congressional districts won by women are similar to the districts won by men ex-ante in the share of government contracts allocated to WOBs during the previous Congress, in the share of small businesses owned by women, in both the explicit and implicit

[6] In 2018, there were more than 30 million small businesses in the US that employed 47% of the private workforce and added 1.8 million net jobs. According to `https://advocacy.sba.gov/2019/04/24/small-businesses-drive-job-growth-in-united-states-they-account-for-1-8-million-net-new-jobs-latest-data-show/`.

biases against women, and in the share of contributions by women given to female candidates. Third, inference using the difference-in-difference framework relies on the parallel trend assumption. We provide evidence that the gender of the winning candidate does not affect the probability of government contracts being awarded to WOBs before the election. Fourth, we consider four placebo events: a sample of mixed-gender elections that were decided by a vote margin above 50 percentage points; a sample of same-gender close elections decided by a vote margin below five percentage points; and close mixed-gender elections, but the election date is shifted to the subsequent and previous elections within the district. We show that the results of the placebo regressions are economically and statistically insignificant. In most specifications, we use local difference-in-difference regression for a sample of close elections. However, as another check we use a regression discontinuity design with a larger sample controlling for first and second order polynomial of the forcing variable (vote margin) which confirms our results.

Lastly, we look at contracts awarded in counties that cross congressional district boundaries. We separate the sample into two subsamples: a subsample of contracts that are executed in the affected parts of counties, that is, parts of the counties in the district with close elections, and a subsample of the contracts which are executed in parts of the counties that belong to the districts without close elections. If there was an unobserved omitted variable – assumed to be constant for small and homogeneous geographic areas such as counties – that causes both a rise in the probability of electing a female representative and awarding government contract to a WOB, we would expect to see no difference between the affected and unaffected part of the county. In contrast, we confirm the main findings, estimating a causal effect of up to 3.73 percentage points only in the affected parts of the counties.

We next turn to exploring the possible mechanisms that drive why the election of a female representative increases the probability that a government contract is awarded to a women-owned firm. First, female legislators may support local WOBs as part of their constituent service coupled with reelection motives, as suggested by Stein and Bickers (1994) , Levitt and Snyder

(1997), and Grimmer and Powell (2013). We separate the sample based on whether the contractor is a local firm or is an out-of-district firm. The effect concentrates in the first group and is insignificant for the latter, consistent with the constituent service hypothesis.

Second, we examine the longer-term implications of the WOB shift. We ask whether the effects of female legislators persist beyond their initial terms. If the female legislators are simply imposing their preferences, then we anticipate the rate of WOB contracts to revert if a male legislator wins the next election. Alternatively, experience with WOBs might alter the government contracting process moving forward.[7] We study contracts awarded up to four years after the female legislator's term starts. Consistent with the altered government contracting process hypothesis, we find that the increased share of female contractors persists.

Third, we test whether legislators make direct requests on behalf of their constituents to influence the selection process. For example, many House representatives provide designated links on their web pages offering to help constituents in contacting federal agencies.[8] We gather data on communication between legislators and government agencies through Freedom of Information Act (FOIA) requests. We show that the increase in contracts allocated to WOBs is larger for female legislators who actively engage in individual oversight through communication with the agencies regarding contracting.

We explore several additional explanations for why the election of a female representative increases the probability that a government contract is awarded to a women-owned firm. These include: that the mere presence of women legislators changes the behavior of and attitude toward WOBs and women in general; that the election of a female legislator shocks the networks of connected businesses; that female legislators shift government contracts to agencies led by women; and that female legislators help their constituents apply for government contracts. The

[7]Consistent with this line of argument and focusing on hiring decisions by firms, Miller (2017) provides evidence of positive long-run effects of temporary affirmative action programs on the hiring of Black workers. Studying private loans, Beck et al. (2018) show that after having exposure to opposite-sex borrowers, the lending officers exhibit a lower bias against them.

[8]For example, see `https://murphy.house.gov/forms/casework/`.

evidence does not support any of these four additional explanations.

In the last part of the paper, we address whether the changes in government contractor composition is a cause for constituent concern. Is a persistent increase in the share of WOBs by female representatives potentially harmful for public procurement, or is the ex-ante low share of WOBs as government contractors suboptimal?

We consider three dimensions to answer the question. First, we examine a variety of firm characteristics — firm size, age, credit quality, and previous experience as government contractor — that capture firm quality. The results show that the quality of the average firm is either unaffected or improved by the election of a female legislator. Focusing on WOBs as government contractors, quality is improved along almost all dimensions. Taken together, the results show that the increase in gender diversity is not achieved by compromising on firm quality. Second, we investigate contract terms, which might become more lenient toward WOBs in districts represented by female politicians. We fail to find any evidence for this conjecture. Third, we evaluate contract performance. With the exception of a marginal increase in the probability of cost overrun, average contract performance, as measured by time and cost overruns, number of modifications, and probability of contract cancellation, is unaffected. We fail to find evidence of significant economic costs associated with a more gender-balanced representation in government contracting. These findings hold for the average contractor in a district won by a female legislator, and for WOBs specifically.

This paper contributes to two strands of literature. First, the paper adds to the literature examining the consequences of increased participation by women in politics. Taken together, contributions in the field support the view that female politicians take actions and support legislative policies that are targeted at and beneficial for female constituents (Gerrity et al., 2007; Volden et al., 2018). Female representatives approach legislative activities that are unrelated to women's issues differently than their male counterparts.[9] Besides legislative actions, female

[9]There has been extensive work done to study women as members of Congress and their impact on legislation (Swers, 2001, 2005; Pearson and Dancey, 2011).

legislators contact federal agencies more frequently on behalf of women constituents than their male colleagues (Lowande et al., 2019). Several recent papers focus on real outcomes of female role models for female constituents, such as labor market outcomes (West and Duell, 2020) and board composition (Chizema et al., 2015; Kedia and Pareek, 2021). A closely related paper is Ghani et al. (2014), who investigate political quotas for women in India with the role of women in manufacturing sector. However, the authors do not find any evidence of an increasing supply of government-sponsored contracts. We contribute to this work by asking how women in politics directly affects economic outcomes for women in business. Unlike Ghani et al. (2014), we find that female legislators fundamentally change the likelihood of WOBs receiving a government contract.

Second, we add to the literature on the role of gender pairings in a business environment, such as female entrepreneurs and female financiers, or women in leadership positions and the female workforce. This literature suggests that female interactions benefit women in a variety of contexts. For example, high-level female officers in the firm improve the working climate for other women at the firm, such as higher income (Bell, 2005; Matsa and Miller, 2011; Cohen et al., 2021), faster career paths (Matsa and Miller, 2011; Kunze and Miller, 2017), and a more female-friendly working culture (Amore et al., 2014; Tate and Yang, 2015). Regarding access to capital, the evidence is mixed, with some papers presenting evidence that female agents prefer to provide funding to female-led firms and women, while others find no evidence for bias. The literature has been studying crowdfunding (Vismara et al., 2017; Bapna and Ganco, 2021; Gafni et al., 2021), angel investors (Becker-Blease and Sohl, 2007; Ewens and Townsend, 2020), venture capital (Hebert, 2020; Gornall and Strebulaev, 2020), and personal debt financing (Bellucci et al., 2010).[10] To the best of our knowledge, we are the first to report a direct effect of gender pairings across the realm of politics and business, focusing on the government's demand for products and services provided by women-owned firms. From an entrepreneurial perspec-

[10]For additional evidence on gender bias in business and access to capital, see Coleman and Robb (2009); Asiedu et al. (2012); Wu and Chua (2012); Alesina et al. (2013); Lee and Huang (2018); Guzman and Kacperczyk (2019); Raina (2021); **?**; Delis et al. (2022).

tive, this is important because, according to Shelton and Minniti (2018), limited product market access is a key hurdle for the survival and growth of small businesses.

This paper's findings have important policy implications as the gender gap in government contracts has been prominent in public debates. Bates (2002) points out that WOBs receive fewer government contracts than their male-owned counterparts.[11] According to a report published by the Commerce Department, the odds of women-owned firms winning a federal contract are about 21% lower than for otherwise similar companies (Beede and Rubinovitz, 2015). In 1994, Congress enacted the Federal Acquisition Streamlining Act (FASA), signed into law by President Clinton, which set a goal of awarding 5% of federal government contract dollars annually to women-owned small businesses. Since then, Congress has initiated several explicit programs aiming to increase female participation in government contracting.[12] Nevertheless, it took 21 years until the goal was first reached in 2015. Our findings highlight an alternative pathway through which female politicians increase gender diversity in government contracting. This pathway is particularly timely given that, at the time of writing this paper, the number of female representatives in the House of Representatives is at an all-time high of 120 for the 117th Congress and that the first female vice president was inaugurated in 2021.

This paper sheds new light on the role of female representatives in the contracting relationship between private businesses and the US government. As opposed to merely setting the legislative policies shaping the business environment, female legislators actively increase the share of female contractors within the US procurement system. Importantly, the more gender-balanced representation in government contracting is not associated with any quantifiable deterioration in contract performance.

[11]For more evidence on the allocation of government procurement contracts, see, among others, Cohen and Malloy (2016); Canayaz et al. (2019); Esqueda et al. (2019); Ferris et al. (2019); Heese and Perez-Cavazos (2019); Podolski and Veeraraghavan (2019); Agca et al. (2020); Ayyagari et al. (2020); Canayaz et al. (2021); Cox et al. (2021); Denes et al. (2021); Tian and Xia (2021).

[12]The most notable is the Women in Small Business program, which was implemented in 2011. The sample does not include contracts issued under this program and hence the findings are not driven by the increased use of it.

1 Data and Institutional Details

We rely on two main types of data: government procurement contracts and congressional election outcomes. Federal procurement contracts are agreements between government agencies and businesses to obtain goods and services for a negotiated price and length.

The process of awarding government contracts starts with a federal agency identifying a need for a purchase of a good or service. The agency decides the degree and method by which the contract is competed, the form of pricing appropriate to the contract, and whether the contract is for a definitive quantity or some indefinite delivery vehicle (IDV). Then, a contracting officer of this agency posts a solicitation on the SAM.gov website. A solicitation announcement identifies what the agency wants to buy, provides instructions to potential contractors, identifies the source selection method to evaluate offers, and includes a deadline for the submission of bids or proposals. Firms then submit their offers for review by agency officers who evaluate them and make the final decision.[13]

Firms interested in getting a federal contract must obtain a Dun & Bradstreet Data Universal Numbering System (DUNS) unique number for each of the business's physical locations, and register with the federal government's System for Award Management (SAM). Firms that identify themselves as a small business in SAM must (1) meet the Small Business Act's definition of a small business and (2) not exceed size standards established, and updated periodically, by the Small Business Administration (SBA).[14]

Until the summer of 2020, small businesses could self-certify as a WOB when they register at SAM. The Small Business Act defines a women-owned small business as one that is a small business; is at least 51% owned and controlled by women who are US citizens; and has women

[13]The Federal Acquisition Regulation (FAR) details policies and procedures that guide the procurement process by contracting officers. `https://www.acquisition.gov/browse/index/far`.

[14]The Small Business Act defines a small business as one that is organized for profit; has a place of business in the United States; operates primarily within the United States or makes a significant contribution to the US economy through payment of taxes or use of American products, materials, or labor; is independently owned and operated; and is not dominant in its field on a national basis. The business may be a sole proprietorship, partnership, corporation, or any other legal form.

manage day-to-day operations and also make long-term decisions. There is no additional monetary or time cost for firms to choose the women-owned small business flag in the system. In addition, self-misclassification is punished.[15]

We focus on SBA set-aside contracts with specified terms and conditions, so-called definitive contracts (DCs), for two main reasons. First, 94% of women-owned firms are small businesses according to the Commerce Department (Beede and Rubinovitz, 2015). Second, DCs allow us to assess how female representatives impact government allocation in stand-alone, one-time agreements with a single firm for the purchase of goods or services under specified terms and conditions. In contrast, IDVs are contracts with one or more firms, and at the time of the contract award there is uncertainty about the quantity of goods or services to be provided, the timing of delivery, or the scope of the agreement. This initial uncertainty might affect the tractability of the contract performance measures.[16]

The SBA set-aside is the most prevalent set-aside program, which sets aside federal procurement opportunities for small business concerns, regardless of gender.[17] The main requirement is that federal agencies generally reserve contracts that have an anticipated value greater than the micro-purchase threshold ($10,000 in 2020), but not greater than the simplified acquisition threshold ($250,000 in 2020), exclusively for small businesses unless the contracting officer is unable to obtain offers from two or more small businesses that are competitive with market prices and the quality and delivery of the purchased goods or services. In addition, federal agencies generally set aside contracts that have an anticipated value exceeding the simplified

[15]The SBA has implemented several measures to strengthen the "eligibility examination procedures" for small businesses, including requiring adequate documentation to prove small business status. These measures take place to ensure that ineligible businesses do not take advantage of small business set-asides. The SBA has also enforcement measures; for example, the SBA has the right to disbar large contractors who identify themselves as a women-owned small business fraudulently from participating in federal procurement opportunities (McManus, 2012). The SBA has the right for unannounced cite visits. Also, a contracting officer or third party is allowed to appeal the SBA's finding of eligibility by filing a "status protest" with the Office of Hearing and Appeals (McManus, 2012).

[16]DCs and IDVs each is approximately half of the contract spending. `https://about.bgov.com/news/staffing-spending-trends-feed-appetite-for-high-value-contracts/`.

[17]We exclude set-aside programs for specific types of small businesses (e.g., 8(a) small businesses, HUBZone small businesses, women-owned small businesses, and service-disabled veteran-owned small businesses (SDVOSBs)).

acquisition threshold exclusively for small businesses when there is a reasonable expectation that offers will be obtained from at least two responsible small businesses offering the products of different small businesses (Rule of Two) and the award will be made at a fair market price.

We obtain the full sample of procurement contracts between the US government and individual firms from the FPDS-NG. We limit the sample to contracts that are awarded competitively and that only small businesses can compete for, namely SBA set-asides. We also exclude contracts without a well-defined completion date and budget. Additionally, we require that the contract is awarded to a firm directly, meaning the contract is not awarded to the parent company and is not a part of a bundled project, the contract is awarded and performed inside the US without any foreign funding, the contractor is neither a government organization nor a nonprofit organization, and that the contractor is registered in the US and not foreign owned.

The main dependent variable in this paper is whether a contract is awarded to a WOB. The Federal Acquisition Regulation (FAR) defines a business as women owned if at least 51% of it is owned by one or more women and in which management and daily business operations are controlled by at least one woman. Figure 1 presents a time series plot of the share of government contracts awarded to WOBs from 2002 to 2018.[18] After an initial increase before 2010, the share of contracts awarded to female representatives oscillates around approximately 20%.

Insert Figure 1

Figure A1 in the Appendix displays the share of contracts awarded to WOBs for the 114th Congress. Even within a given state there is substantial spatial variation. For example, in California's 23rd congressional district, 70% of all federal government contracts during the 114th Congress are awarded to WOBs, while only 8% of the contracts are awarded to WOBs in the 33rd congressional district.

[18] In the main analysis of the paper, we consider contracts awarded in the displayed time period. However, in Section 4, which analyzes the long-term effects, we consider contracts up to June 2020.

Table 1 provides summary statistics for the set of all contracts between 2002 and 2018 as well as the sample used in the close election analysis. The raw sample consists of 1,051,916 unique contracts worth $40.3 thousand initially on average, amounting to $40.4 billion. Accounting for government contracts ex-post becoming more expensive than initially agreed upon, see Brogaard et al. (2021), the contracts in the sample amount to $56.3 billion spent by the US government. Of those contracts, 19.96% are awarded to WOBs.

Insert Table 1

We report several contract statistics: contract amount, contract maturity, contract without pricing/cost terms, multiyear contract, and whether it was executed by a local contractor. For each contract in a sample of close elections, we report several variables specific to a contractor: sales, number of employees, age in years, and Paydex score (creditworthiness) obtained via the National Establishment Time-Series (NETS). We also construct two variables that capture the contractor's experience. Experience_1 is the number of contracts executed during the previous Congress, while Experience_2 is the number of contracts with the same agency providing the same product during the previous Congress. Finally, we consider four measures of contract performance: whether there were cost or time overruns, whether there were any modifications, and whether the contract was cancelled. These measures are inspired by Brogaard et al. (2021), who show that renegotiations and changes in contract terms are fairly common.

Columns 4 to 6 in Table 1 report the same statistics for the sample of contracts associated with our main specification. The last two columns report the difference and the associated standard errors clustering on year and 2-digit product and service code. Differences are statistically significant for the following variables: contract amount, share of local contractors, cancelled contracts, and share without pricing terms. Comparing the estimated difference, accounting for not using obvious controls, and inspecting untabulated empirical distributions for both samples, we would argue that from an economic perspective the samples are similar.

Second, we collect information for all general and special House of Representatives elections

beginning with the 109th and ending with the 115th Congress from the Federal Election Commission.[19] The sample starts with the general election for the 109th Congress held on the 2nd of November 2004, and finishes with the special election on the 7th of November 2017 in the 3rd District in Utah, which John Curtis, a Republican, won over Kathie Allen, a Democrat. We do not consider elections for non-voting members of the US House of Representatives.[20]

Insert Figure 2

The number of women in politics in general has been increasing substantially over time, long before the start of the sample. Figure 2 provides a time series of the number of women in the office of governor, senator, and House representative, from 1950 to 2018. While there were only nine female House representatives and one female senator in 1950, the number grew to six governors, 23 senators, and 88 House representatives in 2018.

2 Congresswomen and Women-owned Businesses Receiving Government Contracts

This section presents the main results of the paper, namely the effect of electing a female representative on the government contract allocation to WOBs. We start with a naïve regression before moving to inference using close elections. Next we discuss the identification strategy and provide its results. We then provide corroborating support for the claim that the observed effect has a causal interpretation by providing evidence on the randomness of the election outcomes, ex-ante similarity between districts won by female and male representatives, followed by tests for parallel trends and placebo election events. Lastly, we consider a regression discontinuity approach as well as analysis of counties spanning multiple congressional districts.

[19] Election results were downloaded from this web page: `https://www.fec.gov/introduction-campaign-finance/election-and-voting-information/`.

[20] There are six non-voting members representing District of Columbia, Puerto Rico, American Samoa, Guam, the Northern Mariana Islands, and the US Virgin Islands.

2.1 Ordinary Least Squares Specification

We start by investigating correlations between the gender of a district representative and the probability of a government contract being awarded to a WOB. In particular, we estimate the following model:

$$WOB_{c,t,d} = \alpha + \beta_1 \times \text{Female representative}_{t,d} + X_{t,d} + \gamma_c + \eta_t + \phi_d + \varepsilon_{c,t,d} \tag{1}$$

in which $WOB_{c,t,d}$ is an indicator variable that equals one if a contract c awarded at time t and performed in a congressional district d is awarded to a women-owned firm, and zero otherwise. $Female\ representative_{t,d}$ is an indicator variable that equals one if the congressional district d at time t is represented by a female legislator.

γ_c are contract-specific variables, in particular fixed effects for the subagency awarding the contract, for the 2-digit product and service code, and contract terms. We include indicator variables for different contract size and maturity bins instead of continuous measures of contract terms. The rationale is that the final contract size and maturity can be viewed as an outcomes and hence a bad controls. This is because the final contract terms are part of the bid submitted by the individual contractor winning the contract and subsequent negotiation. However, WOBs tend to be smaller than the average firms and hence might have a harder time competing for bigger and long-maturity contracts. By including bins, we aim at alleviating the bad control problem but still accounting for structural differences in ability to compete for certain contracts faced by WOBs.

We also include following election-specific controls $X_{t,d}$, an indicator variable if a representative is Republican and whether the representative is in the same party as the president, the House majority, and the Senate. η_t are year or Congress fixed effects. ϕ_d are congressional district fixed effects. Not including firm controls is a deliberate choice as they are outcomes of the selection process.[21] The sample of government contracts spans from the 109th Congress to the

[21] Note that the industry assignment within the procurement data appears arbitrary as it varies substantially within

115th Congress.[22]

The main coefficient of interest is β_1, which measures how much more likely it is that a contract is allocated to a WOB in congressional districts with female representatives. Table 2 presents the results. Throughout the paper, we use linear probability models rather than logit or probit as probabilistic models are biased in the presence of a large number of fixed effects (Maddala, 1987; Greene, 2004).

Insert Table 2

The model in Column 1 only includes Congress and congressional district fixed effects. The former is included as both the dependent and main independent variable exhibit a positive time trend; see Figures 1 and 2. We include congressional district fixed effects as we are interested in variation within district levels rather than between-district variation. The presence of a female representative correlates with a 2.3 percentage points higher allocation of government contracts to WOBs, significant at least at the 5% level. Successively including controls and fixed effects, moving from Model 1 to Model 3 leads to a slightly higher coefficient, 2.8, with similar statistical significance. In Models 1 to 3, standard errors are clustered on year and awarding subagency levels, while in the remaining models, we add additional clusters on congressional district and 2-digit product and service code. These results are only indicative as the inference might be subject to endogeneity bias.

2.2 Causality

The main challenge of identifying the causal effect of female US House representatives on the probability that a government contract is awarded to a WOB is that female US House representatives are not randomly assigned to different congressional districts. A naïve regression analysis of the government contractor's gender on the gender of the district representative might

an individual firm and hence we omit it from any model.

[22]The difference in number of observations in Table 1 and Table 2 is because we do not consider contracts executed between election date and term start date, as well as due to the exclusion of non-voting members in Congress, limits we do not apply to Table 1.

be biased due to unobserved characteristics correlating with both. For example, female empowerment or the Me Too movement might drive both their involvement in the political arena as well as in business simultaneously.

A commonly applied solution in this setting is to exploit narrowly decided elections to mitigate endogeneity concerns; see, among others, Lee (2008), Akey (2015), and Akey and Lewellen (2017). For our purpose, we focus on elections between two candidates of opposite gender that were ex-post decided by a margin of five percentage points or less.[23] Due to the ex-ante uncertainty regarding the outcomes, this approach provides quasi-random variation in election winners, implying that the gender of the winning candidate is arguably determined by pure chance. Hasan et al. (2020) use a similar empirical strategy focusing on the gender of the winner of mayoral elections.[24] Lastly, we only consider elections for which we can identify at least one procurement contract performed in a respective district before and after a term start.

Based on these filters, the sample consists of 54 general and two special elections in 41 different congressional districts and 26 different states.[25] Of those, 28 — exactly 50% — are won by female candidates. Although we identify close elections for each Congress in the sample, most close elections are from the 110th and 113th Congresses: namely 13 and 11 individual close elections, respectively. Table A3 provides summary statistics on the elections. In general, the elections in the sample are fairly balanced regarding the gender and party winning, whether there is a change in either, the age of the elected official, and the gender of the incumbent.[26] Even though there are more female Democrats running for office than female

[23]Using a five-percentage-point margin is standard in the literature: see Bird et al. (2017) and Jennings et al. (2021), among others.

[24]Another identification strategy used in similar context in the literature are exogenous departures of politicians caused by sudden resignations or deaths, see Brogaard et al. (2021). This approach is not applicable in our setup for two reasons. First, there are too few exogenous departures during our sample period. In particular, only 10 female representatives unexpectedly leave their office. Second, evidence presented in Section 3 suggests that the impact a female politician has on the contract allocation process persists for a long time, even after she leaves her office.

[25]Table A2 provides a list of the close elections considered in the sample, with information on candidate name, gender, and party, as well as vote margin.

[26]Personal information for individual representatives such as age, gender, and political party is obtained through the Bioguide Personal Pages from `https://bioguide.congress.gov/`.

Republicans, a similar share of each of them succeeded in winning the election: 49% and 52%, respectively.

Figure 3 visually summarises how individual contracts are allocated to elections for the House of Representatives. General elections for the House of Representatives are held in every even-numbered year, on the first Tuesday after the first Monday in November, the election day E. Congress starts its term, referenced by T, on the 3rd of January of the next calendar year, unless the preceding Congress designates a different day, and convenes for two years. We refer to the Congress a winning candidate participates in as the *Incoming Congress*, and the Congress before as the *Previous Congress*. Although special elections are off a normal election cycle, the logic of how we allocate contracts relative to the timing of election as well as term start is the same. Panel A in Figure 3 provides a timeline.

Insert Figure 3

For each election, we collect data on government contracts executed in the respective congressional district. The pre-event sample consists of all contracts awarded between the term start of the *Previous Congress* and the election date of the close election. The post-event sample consists of all contracts awarded between the term start of the *Incoming Congress* and the subsequent election. In short, we exclude contracts allocated during the time between election and term start date as the outcome of the election is already known at that point in time while the winning candidate is not yet in office. Panel B in Figure 3 provides a visualization.

Close elections that are followed back-to-back by another close election are special cases. In this case, the procedure described in the previous paragraph would lead to double counting, as contracts allocated to the *Incoming Congress* of the first close election overlap with the contracts allocated to the *Previous Congress* of the second close election. In such cases, we split the period in half to avoid double counting, as visualized in Panel C in Figure 3.

We aim at isolating the change in probability of awarding a contract to a WOB attributable to the election of a female representative. Hence, a difference-in-difference regression framework

fits our setup. Treatment is defined as whether a congressional district gets assigned a female versus a male representative.[27] The quantity of interest is the interaction of treatment (female winner) and post (after term start), which identifies the change in probability that a contract is awarded to a WOB. We estimate the following specification:

$$\begin{aligned} WOB_{c,t,d(e)} = \alpha + \beta_1 \times \text{Female winner}_e + \beta_2 \times \text{After term start}_{e,t} \\ + \beta_3 \times \text{Female winner}_e \times \text{After term start}_{e,t} + \gamma_c + \eta_t + \phi_e + \varepsilon_{c,t,d(e)} \end{aligned} \tag{2}$$

in which $WOB_{c,t,d(e)}$ is an indicator variable that equals one if a contract c awarded at time t and performed in a congressional district d associated with a close election e is awarded to a women-owned firm. *Female winner*$_e$ is an indicator variable which equals one if the close election e is won by a female candidate. *After term start*$_{e,t}$ is an indicator variable that equals one after the start of the term for election e. γ_c and are η_t are defined as in Equation 1. ϕ_e are election fixed effects that subsume congressional district fixed effects as well as election specific controls as used in Equation 1.

In the difference-in-difference specification, β_1 can be interpreted as a structural difference in the probability of WOBs being awarded contracts in districts that will be won by female candidates. Under the parallel trend assumption and if outcomes of close elections are truly random, we expect the estimated β_1 to be economically small and statistically insignificant. The inclusion of election fixed effects ϕ_e subsumes β_1, which hence is not identifiable. β_2 can be interpreted as the difference in probability of a contract being awarded to a WOB before and after the term start, disregarding the outcome of the election. As we control for year fixed effects, which pick up the general trend that WOBs are awarded more contracts over time, we expect this coefficient to be statistically insignificant. Due to the presence of year fixed effects η_t and since general elections are held at the same point in time for all congressional districts,

[27] This definition of treatment implies that there is no strict control group as in standard difference-in-difference designs. Both districts experience an election. The treatment can be interpreted as not getting a male representative. See Akey and Lewellen (2017) for a similar usage of a difference-in-difference model with close elections. On a separate note, Cook and Campbell (1979) provide an argument in favor of these experimental designs to their high construct validity.

β_2 is only identified because of the few special elections included in the sample, and hence is hard to interpret. As a result we do not report it.

The coefficient of interest β_3 is the interaction between the gender of the elected official and post-event indicator variable, which can be interpreted as the increase in probability, reported in percentage points, that women-owned firms are awarded contracts if a woman, compared to a man, wins the election. Table 3 presents the results from estimating the main model, Equation 2.

Insert Table 3

After the term start, the probability of a contract being awarded to a women-owned firm increases by around 2.7 percentage points if the newly elected representative is a woman. In Model 1, we only control for year and election fixed effects. In the remaining models, we successively include controls and additional fixed effects that only affect magnitudes marginally. Statistical significance is at the 1% level for all specifications. The fact that the inclusion of granular fixed effects in Models 3 and 4 does not affect the economic magnitude suggests that reallocation of contracts, for example, to products more likely to be offered by WOBs, is not driving the results.

From an economic perspective, the magnitudes are substantial. The effect amounts to roughly one-seventh of the unconditional probability in 2018. Relating the estimate to the time series trend in Figure 1 makes the effect even more pronounced. The unconditional probability that a government procurement contract is awarded to a WOB increased from 15.2% in 2002 to 20.1% in 2018, a change of 4.9 percentage points, slightly less than double the effect we attribute to the election of a single female representative.

2.3 Validity Tests

This subsection tests for possible validity concerns. First, we provide evidence that there are no discontinuities in the assignment variable, the female vote margin. Second, we show that

congressional districts won by women are similar to the districts won by men ex-ante in the share of government contracts allocated to WOBs during the previous Congress, in the share of small businesses owned by women, in both the explicit and implicit biases against women, and in the share of contributions by women given to female candidates. Third, we show the presence of parallel trends before treatment. Fourth, we construct several placebo tests. Lastly, we include higher order polynomials of the forcing variable, a specification more akin to regression discontinuity designs.

The identifying assumption of the empirical strategy is that in mixed-gender close elections, it is extremely difficult to predict a winner and hence the gender of an elected representative is as if randomly assigned. This implies the absence of a discontinuous jump of the assignment variable around the cutoff, which would be a serious concern to internal validity (Imbens and Lemieux, 2008).

Insert Figure 4

Figure 4 displays a histogram of election outcomes along the vote margin, defined as the difference between the votes received by the female candidate and the votes received by the male opponent. A vote margin above zero indicates that the female candidate won. The histogram shows an even distribution of elections across the vote margin, hence the absence of any bunching.

Next we investigate if congressional districts won by women are similar to the districts won by men ex-ante in observable characteristics. In the Appendix, Panel A of Figure A2 displays the share of government contracts allocated to WOBs during the previous Congress for all elections with vote margins between -75 and 75 percentage points. Each of the dots is the average value of the covariate outcome in vote margin bins of 10-percentage-points length. The grey bars indicate 90% confidence intervals of the estimated bin average. The solid black lines are fitted to the raw data using a second order polynomial interacted with an indicator variable equaling one if the female candidate won. The results support the hypothesis that ex-

ante the districts narrowly won by women are similar to the ones narrowly lost because we do not observe discontinuity around the cut-off.[28]

As any unobserved variable correlating with both the dependent and independent variable might pose a threat to exogeneity, we repeat this analysis for four other variables capturing involvement of women in business as well as in politics, measured before the election. In particular, we investigate if there are any discontinuities for the share of small businesses owned by women (Panel B), the explicit bias against women (Panel C), the implicit bias against women (Panel D), and the share of contributions by women given to female candidates (Panel E). For all the variables, we reach the same conclusion. Although there is expected variation and trends – for example, in congressional districts where women lost by a large margin there is more implicit bias against them – there is no discontinuity around the cut-off.

Next we test for parallel trends. Inference using the difference-in-difference rests on the parallel trend assumption, stating that treatment and control would have behaved similarly in the absence of treatment. Table A4 in the Appendix presents the results of a specification that includes interactions of an indicator variable equaling one if the winning candidate is female, with time indicator variables for every quarter leading up to the event. If treatment and control units behave similarly pre-event, we expect the interaction of the treatment indicator variables and the time intervals before the event to be economically small and statistically insignificant. In line with the parallel trend assumption, the gender of the winning candidate does not affect the probability that government contracts are awarded to WOBs pre-event.

Table A5 in the Appendix provides results of a regression similar to the main model, Equation 2, using four different placebo events. If the results are purely due to the gender of the winning candidate of close mixed-gender elections, the results of the placebo regressions should be economically and statistically insignificant.

Column 1 uses a sample of mixed-gender elections that were decided by a vote margin above

[28]In untabulated results, we confirm in a more formal test that there is no significant jump around the cut-off using regression analysis, controlling for time trends and unobserved factors.

50 percentage points. Column 2 uses a sample of same-gender close elections decided by a vote margin below five percentage points. Column 3 and Column 4 use the original sample of close mixed-gender elections, but the election date is shifted to the subsequent and previous elections within the district, respectively. The estimated effect is statistically insignificant for all four variants.

Finally, we verify that the interaction term picks up a discrete jump in the average value of the dependent variable and is not spuriously significant because of some underlying nonlinearity in the dependent variable. We use a specification that is similar to standard regression discontinuity models. In particular, we augment the main model presented in Equation 2 by including a first and second order polynomial interacted with both the winning gender as well as time to election. Table A6 in the Appendix reports the results for the sample of mixed elections with a vote margin below 50 percent. In line with the results of this section, we still find a discrete jump attributed to a woman winning an election. We note that recent research casts doubt on RDD designs with higher order polynomials (Gelman and Imbens, 2019) ad so we focus on our main analysis using local linear models (Table 3) as recommended.

2.4 Counties Spanning Multiple Congressional Districts

In the previous subsection, we provide support for the claim that the outcome of close elections is ex-post random, and hence inference is causal. In this subsection, we provide additional evidence that time-varying district-specific unobserved variables that correlate with both the probability of female candidates winning and the gender gap in contract awarding, for example, general empowerment of women, cannot explain our results. We achieve this by exploiting counties that span multiple congressional districts.

The identifying assumption is that such counties have similar observed as well as unobserved characteristics except for the district representative.[29] In particular, the sample is constructed as

[29]Huang (2008); Chava et al. (2019); Chung (2020) exploit similar approach to measure economic effects of state-specific policy changes.

follows. For each close election, we identify counties that are partially within the relevant congressional district. Then, we only consider counties which span multiple congressional districts with at least 25% of all contracts awarded being issued in each of these congressional districts. In the case of general elections, elections are held in all counties at the same time.

Empirically, we use a model identical to the main model presented in Equation 2. The only difference is that we separate the sample on two subsamples: a subsample of the contracts that are executed in the affected parts of counties, that is, parts of the counties in the district with close elections, and a subsample of the contracts which are executed in parts of the counties that belong to other districts. Table 4 shows that the effect is present only among the affected parts of the counties. After the term start, the probability of a contract being awarded to a WOB increases by 3.73 percentage points if the newly elected representative is a woman. We do not observe any significant changes in the subsample of non-affected counties.

Insert Table 4

Taken together, this result as well as the validity tests of Section 2.3 suggests that the increase in probability of contracts awarded to WOBs is caused by the election of the female representative in this district.

3 Mechanism

In this section, we investigate the mechanisms that drive why the election of a female representative increases the probability that a government contract is awarded to a WOB. First, our evidence suggests that they provide more contracts to local firms — their actual constituents and potential voters. Second, there are learning effects in contract allocation. Even if the female representative leaves office, the share of contracts going to WOBs does not decrease. Third, female representatives who are more active in communication with agencies provide an even higher share of contracts to WOBs. Finally, we rule out a variety of additional explanations: that the mere presence of women legislators changes the behavior of and attitude toward WOBs

and women in general; that the election of a female legislator shocks the networks of connected businesses; that female legislators shift government contracts to agencies led by women; and that female legislators help their constituents apply for government contracts.

3.1 Local versus Non-local Contractors

One might conjecture that female legislators support local WOBs as part of their constituent service coupled with reelection motives. This conjecture is consistent with several papers providing theoretical arguments and empirical evidence that legislators who focus efforts on their district have an incentive to deliver a greater share of government spending to their constituents and claim credit for distributive spending in the district (Stein and Bickers, 1994; Levitt and Snyder, 1997; Grimmer and Powell, 2013).

A female legislator might benefit from increasing the allocation of government contracts to WOBs in her district in several ways. First, the support from women in the business community might increase and manifest in campaign contributions and votes. Second, her support of small businesses might also resonate with voters across the political spectrum given the widespread popularity of small businesses in the eyes of the voting population. Anzia and Berry (2011) provide additional evidence that women are more efficient in bringing federal spending to their districts than their male counterparts. A contract executed within the representative's district, however, does not imply that the contract is executed by a contractor from the district.

Empirically, we use a model identical to the main model presented in Equation 2. The only difference is that we separate the sample based on the origin of a contractor in local firms, that is, firms that are registered in the district, and a subset of non-local/out-of-district firms. Table 5 shows that the effect is concentrated among the local firms. After the term start, the probability of a contract being awarded to a local women-owned firm increases by 4.0 percentage points if the newly elected representative is a woman.

Insert Table 5

The estimates suggest that female legislators tend to focus their effort on their actual constituents and potential voters. This result is in line with Herrnson et al. (2003), who show that to improve their prospects of electoral success, female politicians focus on issues that are favorably associated with women candidates and target women as a social group. Jones (2014) confirms that female constituents represented by congresswomen pay more attention to the substantive policy positions those congresswomen take and weigh those positions more heavily when evaluating them than do female constituents represented by congressmen.

3.2 Persistence

Whether a temporary representation by female legislator will have persistent effects remains an open question. On the one hand, evidence that the loss of political connections between firms and legislators affects contract allocation and contract terms (Tahoun, 2014; Brogaard et al., 2021) suggests that politicians influence government contracting for private benefit and that the effects do not persist beyond the legislators' time in office. In our setting, female legislators might simply impose their preferences on agencies. Were that the case, we would also expect a decrease in diversity among contractors after a female legislator leaves her office.

On the other hand, federal agencies are often understaffed, which might lead to attention constraints (GAO, 2018). In this case, female legislators might either provide additional information about contractors or encourage officers to collect additional information about them in correspondence with the agencies. Then representatives will be able to reduce the inattention of contracting officers. Coupled with the ample evidence that minority groups suffer from decision-makers' inattention to them and initial beliefs that they might perform worse (Bartos et al., 2016; Huang et al., 2022), exposure to people with minority status might modify contracting persistently.[30]

[30]Consistent with this line of argument and focusing on hiring decisions by firms, Miller (2017) provides evidence of positive long-run effects of temporary affirmative action programs on the hiring of Black workers. Studying private loans, Beck et al. (2018) show that after having exposure to opposite-sex borrowers, the lending officers exhibit a lower bias against them.

To test whether the effect attributable to the election of a female representative persists longer than her initial term, we estimate an extended version of Equation 2,

$$\begin{aligned} WOB_{c,t,d(e)} = \alpha &+ \beta_1 \times \text{Female winner}_e + \beta_2 \times \text{Incoming Congress}_{e,t} \\ &+ \beta_3 \times \text{Female winner}_e \times \text{Incoming Congress}_{e,t} \\ &+ \beta_4 \times \text{Subsequent Congress}_{e,t} \\ &+ \beta_5 \times \text{Female winner}_e \times \text{Subsequent Congress}_{e,t} \\ &+ \gamma_c + \eta_t + \phi_e + \varepsilon_{c,t,d(e)} \end{aligned} \tag{3}$$

The only difference between this model and the main model is that instead of interacting *Female winner* with an indicator variable that equals one after the start of the term and that we include two separate indicator variables, one for the Incoming Congress and one for the Subsequent Congress. The sample covers a longer time period, namely government contracts awarded up to 48 months after the term start date. Please see Figure 3, Panel D, for a visualization of the sample construction. Note that we do not show the individual effects of the main indicator variables in the equation as they are subsumed by fixed effects.

Insert Table 6

Column 1 shows that the effect persists, as the interaction between *Female winner* and *Subsequent Congress* is positive and significant at the 1% level. In fact, we fail to reject the null hypothesis that the effect during the Subsequent Congress is lower than during the Incoming Congress. In Columns 2 and 3, we add additional interaction terms for the Subsequent Congress, asking if the persistence is different if the winner of the close election is reelected or if the legislator in the subsequent Congress is male, respectively. These election outcomes do not affect the persistence. Columns 4 to 6 repeat the same models for the sample of local firms. The results are similar.

Our results are consistent with the existence of gender gap and the learning effects that lead to its reduction. The effects are inconsistent with pure preferences of politicians, which predicts

that the persistence would depend on a successor gender. Also, the switching costs between contractors are unlikely a cause by themselves as the estimates for the Subsequent Congress are even higher than the estimates for the Incoming Congress. Beaman et al. (2012) find similar patterns in a separate context. They show that female leaders in India invest in goods that women prefer, in their case drinking water. Similar to the presented results, the investment in drinking water persists even after women have left power.

3.3 Congressional Oversight

Federal agencies are responsible for the allocation of government contracts and argue that the process is not influenced by legislators. To quote John C. Johnson, ex-assistant commissioner of GSA's Federal Technology Service, "I've never had a member of Congress do that, and no, it wouldn't have any effect. The process is very well-defined in terms of how we make selections."[31] Nevertheless, the opposite has been shown empirically. For example, board connections to the ruling party (Goldman et al., 2013), political contributions (Brogaard et al., 2021), and ownership stakes by politicians (Tahoun, 2014; Schoenherr, 2019) impact the allocation and terms of procurement contracts. In this subsection, we investigate congressional oversight as a potential mechanism of how contract allocation is affected by female legislators.

Congressional oversight is one of the most important responsibilities of Congress. It refers to the review, monitoring, and supervision of federal agencies, programs, and policy implementation, and it provides the legislative branch with an opportunity to inspect, examine, review, and check the executive branch and its agencies. The authority of Congress to provide oversight is derived from its implied powers in the US Constitution, various laws, and House rules.[32]

The most common method of oversight is through the committee structure. In addition to oversight by committees, scholars also highlight the role of congressional requests as a form of

[31] `https://www.govexec.com/magazine/features/2005/12/schmooze-or-lose/20778/`.

[32] For an extensive summary of oversight activities, please see the Congressional Oversight Manual provided by Congressional Research Service. `https://fas.org/sgp/crs/misc/RL30240.pdf`.

individual oversight.[33] One reason to approach federal agencies directly is constituency services by representatives, namely providing help to individuals, groups, and localities in coping with the federal government (Fenno, 1973; Cain et al., 1987). While individual members have no authority to issue compulsory process or conduct official hearings, the casework can result in findings about bureaucratic behavior and policy implementation; these findings, in turn, can lead to the adjustment of agency policies and procedures. By contacting agencies directly, legislators can send signals of their priorities, but without waiting for a scheduled hearing.

Recent works by Judge-Lord et al. (2018) and Lowande et al. (2019) show that individual congresspeople engage in oversight of government agencies through daily requests on behalf of their constituents. It is common practice for congressional representatives to write letters to the SBA, the GSA, or any other relevant agency advocating for their constituents who consider applying or have applied for SBA contracts. Many House representatives provide designated links regarding direct help in contacting federal agencies.[34]

To give an anecdotal example of constituency service related to female representatives supporting women-owned firms: Diana DeGette, a Democrat from Colorado, approached the GSA on behalf of Ms. Carol McCallister, owner of Champion Business Services in Aurora. The representative expressed Ms. McCallister's concern of competing with companies such as GAP Solutions, Inc. In the reply, SBA mentions that it "can counsel Ms. McCallister on the Women-Owned Small Business Program and other strategies for increasing her ability to win federal contracts." In addition, the SBA's Procurement Center representative in Denver, Colorado, offered to meet with Ms. McCallister to provide direct assistance. Consistent with this example, Lowande et al. (2019) find that female legislators contact agencies more on behalf of women.

We construct a database of congressional requests from female legislators to federal agencies

[33] We focus on individual oversight relative to committee oversight. We do so because as we use close elections, most of the legislators in the sample are not senior and hence do not get a powerful committee position.

[34] For example, see `https://murphy.house.gov/forms/casework/`.

between 2000 and 2019 obtained through FOIA requests. We focus on the Department of Defense (DoD) and the following subagencies: Office of Inspector General, Defense Commissary Agency, and Defense Contract Management Agency. The choice is due to responsiveness to our FOIA requests; the quality and amount of the obtained data, in particular whether information on the topic of request is available; and the predominant role of the DoD in procurement contracting. Approximately 68% of contracts in the sample are awarded by this department. From the more than 35,000 individual requests, we exclude travel requests.[35]

We hypothesize that an increase in communication with the DoD coincides with an increase in the share of contracts allocated to WOBs. Hence, we estimate the following difference-in-difference model:

$$\begin{aligned} WOB_{c,t,d(e)} = \alpha + \beta_1 \times \Delta \text{ Correspondence} > 0_e + \beta_2 \times \text{After term start}_{e,t} \\ + \beta_3 \times \Delta \text{ Correspondence} > 0_e \times \text{After term start}_{e,t} + \gamma_c + \eta_t + \phi_e + \varepsilon_{c,t,d(e)} \end{aligned} \tag{4}$$

Our main independent variable, Δ *Correspondence* $> 0_e$, is an indicator variable equal to one if communication with the DoD increases relative to before the election and zero otherwise. We consider three different variables capturing correspondence with the DoD: Communication with the DoD and its subagencies, communication about government contracting,[36] and communication with the DoD without its subagencies.[37] Other controls and fixed effects are the same as in the main model, Equation 2, as described in Section 2.2.

We limit the sample to contracts in districts won by female representatives. The main reason is that we are interested in providing evidence that communication relates to contract allocation and not whether this mechanism applies deferentially to male and female representatives.[38] We also estimate the model for the subsample of local contracts.

[35] We use the combination of the keywords "travel" and "request" for identifying travel request.

[36] This classification was done manually.

[37] The DoD, in contrast to its subagencies, provided us most individual records but only for a subset of the years in the sample. This explains the drop in observations between Models 1 and 2 (4 and 5) and 3 (6).

[38] In fact, we find a similar pattern for the subset of districts won by male candidates or the full set of elections.

Insert Table 7

The main coefficient of interest is β_3, capturing the difference in contracts allocated to WOBs after term start between an incoming female representative who communicates less with the DoD than her predecessor, compared to one who increases communication. Results are presented in Table 7. We find positive coefficients for all models and the majority of them are statistically significant. The magnitudes for all models with the exception of Model 1 are substantial because they all exceed the estimates of the average increase in contract allocation to WOBs associated with the election of a female representative.

The results provide strong support for the congressional oversight mechanism.

3.4 Alternative Explanations

We consider a number of alternative interpretations of the evidence and the steps we take to mitigate them.[39]

Possibly, female representatives do not engage in any specific behavior, and their mere presence changes the behavior of and attitude toward WOBs and women in general. For example, Chizema et al. (2015) and Kedia and Pareek (2021) show that the female political representation affects board composition because of the role model effect. In our setting, the presence of female leaders might improve the attitude toward women in general, but also toward women in business, and hence they receive more contracts. Or their presence might inspire women to create businesses that later also become government contractors.

Unfortunately, we do not observe the identity of all applicants for a given contract and hence cannot study the characteristics of potential government contracts. Instead, we study the number of bidders and whether that number changes depending on the gender of the representative in

[39]Some of the results in this subsection are untabulated, but available upon request. These include: that the mere presence of women legislators changes the behavior of and attitude toward WOBs and women in general; that female legislators shift government contracts to agencies led by women; and that female legislators help their constituents apply for government contracts.

general and conditional on the contract being awarded to a WOB. We find that the election of a female legislator does not affect the number of firms competing in the bidding for government contracts, see Table 8 column 1. Hence it is unlikely that the results of this paper are due to existing or new WOBs competing for more contracts.[40]

Insert Table 8

In column two, we ask if the number of bids changed for the subset of contracts that finally are awarded to WOBs. One could imagine that WOBs face softer competition, that is, they compete against a lower number of bidders, in districts represented by female representatives. We augment the previous specification with an interaction term indicating the WOB status of the firm getting the government contract. The results are insignificant.

In addition, we study county-level evidence to support the claim the the mere presence of female representative does not change the behavior of and attitude toward WOBs and women in general. In particular, we focus on the general attitude toward women using data from the Harvard Implicit Association Test (IAT) as well as small business formation by women using the Current Population Survey following Fairlie (2020). Untabulated results suggest that the gender of the elected representatives affects neither bias (implicit and explicit) against women nor business creation by them within the respective district.

Another potential explanation that has been documented in a similar setup is networks. Schoenherr (2019) finds that Lee Myung Bak, the Korean president elected in 2007, disrupted the allocation of government contracts to private firms by appointing CEOs from his own networks to lead state-owned enterprises. These state-owned enterprises then were responsible for the allocation of procurement contracts to firms from the network of the president. This argument is not consistent with the empirical findings regarding persistence. In addition, due to the focus on small businesses — the sample consists of 10,455 unique firms, of which 8% are single-person entities and 63% employ less than 25 people — this mechanism is unlikely. Following

[40]The results in Table 8 column 1 would be consistent with the aforementioned explanation if and only if non-WOBs drop bidding for government contracts in lockstep with the increase of new or existing WOBs.

Hunt (2019), we construct several proxies for a legislator's local network, such as whether the legislator was born in the district or whether she was a business owner before starting a political career. Results are presented in Table 9 and we find no evidence of the network effect.

Insert Table 9

One might argue that the documented effect is driven by female legislators shifting government contracts to agencies that are led by women, which are more likely to respond to the representative's preferences because of shared gender identity. We gather data on the gender of government agency and subagency heads and test whether there is a relationship to contract allocation. We do not find any evidence that either female legislators shift toward female-led agencies or that female-led agencies award more contracts to women than other agencies do in the presence of female legislators. We would also like to stress that agencies are rarely led by women. Moreover, Fernandez et al. (2013) find no evidence that a higher level of female representation in federal agencies leads to more contracts for WOBs.

Instead of actively affecting the process of contract allocation, legislators can also help their constituents by offering resources to overcome obstacles they face in applying for government contracts — for example, by supporting Small Business Development Centers (SBDC) in their districts. We gather data on SBDCs, in particular location and founding year. Matching this data with the sample of close elections, we do not find any overlap. Some SBDCs are placed in districts that are part of the sample, but none of them were founded around close elections won by a female candidate.

4 Firm Selection and Contract Performance

The previous two sections show that female representatives cause an increase in contracts allocated to WOBs. Next we turn to the consequences of female leadership on firm selection and contract performance. We ask whether the increase in WOB contractors might lead to better or worse contractor quality.

Female legislators' influence on contractor selection might improve contractor quality by decreasing the gender bias in the procurement process (Bates, 2002; Beede and Rubinovitz, 2015). Alternatively, female legislators might exhibit in-group tolerance/favoritism themselves. They may influence contract selection for private benefit at the expense of contractor quality. Previous evidence suggests that politicians also influence contract allocation due to private benefit (Goldman et al., 2013; Tahoun, 2014; Schoenherr, 2019; Brogaard et al., 2021). The evidence from examining firm characteristics, contract terms, and contract execution supports that WOB contractors are of the same quality or better than non-WOB contractors.

4.1 Firm Selection

One may argue that the selection of contractors ex-ante was optimal, and hence WOBs did not receive contracts as this would have led to worse contract performance. We consider a variety of firm characteristics — firm size, age, credit quality, and previous experience as government contractor — that may lead to worse contract performance. We estimate the following difference-in-difference specification:

$$\begin{aligned} Y_{c,t,d(e)} = \alpha + \beta_1 \times \text{Female winner}_e + \beta_2 \times \text{After term start}_{e,t} \\ + \beta_3 \times \text{Female winner}_e \times \text{After term start}_{e,t} + X_{c,t,d(e)} + \gamma_c + \eta_t + \phi_e + \varepsilon_{c,t,d(e)} \end{aligned} \tag{5}$$

in which $Y_{c,t,d(e)}$ represents varying firm characteristics of the contractor firm: size (sales, number of employees), age, creditworthiness (Paydex score), and previous contracting experience. Controls are the same as in Equation 2. In addition, we include an indicator variable that takes the value of one if the contractor is a WOB.

Panel A of Table 10 presents the results of estimating Equation 5 for the sample of all contracts associated with close elections. By considering all contractors, we are examining whether the election of a female representative affects the characteristics of the average government contractor. The variable of interest is *Female winner* $\times$ *After term start*. The results show that the increase in gender diversity is not achieved by compromising on firm quality. All models indi-

cate the quality of the average firm is either unaffected or improved. In particular, the average government contractor after the election of a female legislator has 27% higher sales and significantly more experience as a government contractor. This result implies that agencies do not award contracts to less-established firms just to cater toward legislators' preferences.

Insert Table 10

While the previous analysis speaks to the characteristics of the average firm, the election of a female representative might change the characteristics of the average WOB contractor. To evaluate this possibility, we repeat the regression specification in Equation 5, except we restrict the observations to only include WOB contractors. Panel B of Table 10 reports the results. We find that WOBs in districts represented by female legislators exhibit a statistically significant increase in almost all examined firm characteristics. These characteristics capture size and experience, proxies for firm quality, and so we conclude that WOB quality increases after the election of a female representative.[41]

The evidence suggests that female legislators encourage agencies to change their choice practices despite their potential costs, which allows them to tap into a deeper talent pool of WOBs.

4.2 Contract Terms

The contract performance by WOBs in districts with female representatives might be driven by the initial contract terms. For example, bigger and longer projects tend to operate with higher oversight by agencies. Moreover, female legislators might also include contractor-favorable terms (Ferris et al., 2019).

Hence, before looking at ex-post contract performance, we estimate a model similar to Equation 5. The difference is that we use initial contract terms instead of firm characteristics as outcome variables. Besides the size and maturity, we also include two so-called "sweetheart"

[41] We choose to report our result for levels rather than growth rates because of timing concerns. For example, the growth rate for firm i from $t-1$ to $t+1$ will be affected by the election outcome in year $t=0$. Nevertheless, in untabulated results, we do not observe significant differences in growth rates of firms before and after the elections.

terms: whether a firm is exempt from providing cost or pricing data and whether a contract is a multiyear deal (for more than one but less than five years).[42] The controls are firm characteristics, in particular an indicator variable taking the value one when the contractor is a WOB, log of sales, log of number of employees, Paydex score, and age in years.

Insert Table 11

Similar to the previous subsection, we first look at the contract terms of the average contractor (Panel A) and subsequently we look only at WOBs (Panel B). Table 11 reports the results. The coefficient of interest is the interaction term *Female winner* $\times$ *After term start* capturing the change in contract terms due to the election of the female representative. We fail to find any evidence that the gender of the incoming legislator is associated with changes in contract terms, with the exception of Model 2 in Panel B, in which the gender of the legislator is associated with a marginally statistical increase in contract maturity. The evidence suggests that the shift to more gender-balanced government contracting does not affect the terms of government procurement in the respective districts.[43]

4.3 Contract Execution

In this subsection, we investigate the reduction in gender gap from a performance perspective. Potentially, a female politician has several motives to award more contracts to women-owned firms other than allocating contracts to the best-bidding firm. Taken to the extreme, reelection concerns or favoritism in contract allocation might cost the US government as the newly chosen firms perform badly and contracts need to be renegotiated. On the other hand, if female politicians reduce a preexisting and value-destroying gender bias in government contracting, this contract reallocation might be beneficial to the US government as performance quality is increasing.

[42] We do not include two other common "sweetheart" terms, namely no-bid contract and cost-plus contract. The initial sample is a sample of small business set-aside and competitive contracts with a well-defined completion date and budget (i.e., we exclude IDV contracts). Hence, we do not observe any variation in these two measures.

[43] We would like to point out that evidence provided in Section 3.4 indicates that changes in the pool of applicant firms is also unlikely.

To address these concerns, we estimate a model similar to the model presented in Equation 5. The outcome variables are four indicator variables that capture performance: whether there is a cost overrun, whether there is a time delay, whether there is any renegotiation of terms, and whether the contract got cancelled. Using these measures of performance is motivated by Brogaard et al. (2021), who report that political influence leads to renegotiations of existing government contracts. The specification follows the model reported in Table 11.

Insert Table 12

The evidence in Table 12 suggests that on average, procurement outcomes in districts led by female representatives do not deteriorate. This holds for the average contract with the exception of cost overrun, as reported in Panel A. Similar to the previous section, we focus on contracts awarded to WOBs exclusively. The estimates suggest that the WOBs in districts represented by female legislators do not perform worse than WOBs in male-represented districts.

We would like to stress that the findings in this section, in particular the absence of deterioration of outcomes, differ from previous literature. Several papers in the literature on changes in government contracting caused by politicians, often due to personal monetary benefits, find deterioration in contract performance. For example, contractors connected to politicians through campaign contributions or personal networks tend to perform worse (see Schoenherr (2019); Brogaard et al. (2021)).

Overall, the results on firm selection, contract terms, and contract performance suggest the WOB contractors do not negatively differ from other contractors.

5 Conclusion

We provide novel evidence that female political representation causes an increase in government contracts allocated to WOBs. We address endogeneity by exploiting narrowly decided mixed-gender elections. To corroborate the claim that the gender of the representative causes the

change in allocation, we provide various tests for validity.

However, we find that reallocation has no effect on firm and contract characteristics and on contract modifications. Thus, we fail to find evidence of significant economic costs, neither on firm selection nor on contract performance, associated with more gender-balanced representation in contracting. Using data on congressional communication obtained through FOIA requests, we argue that female legislators use individual oversight to influence the government contract allocation process.

Taken together, we provide evidence that the gender gap can be lessened by exposure to leaders from the groups that experience bias. In the case of government contract allocation, the effect of female representation is sizable and can play a similar role as dedicated programs targeted at women-owned firms.

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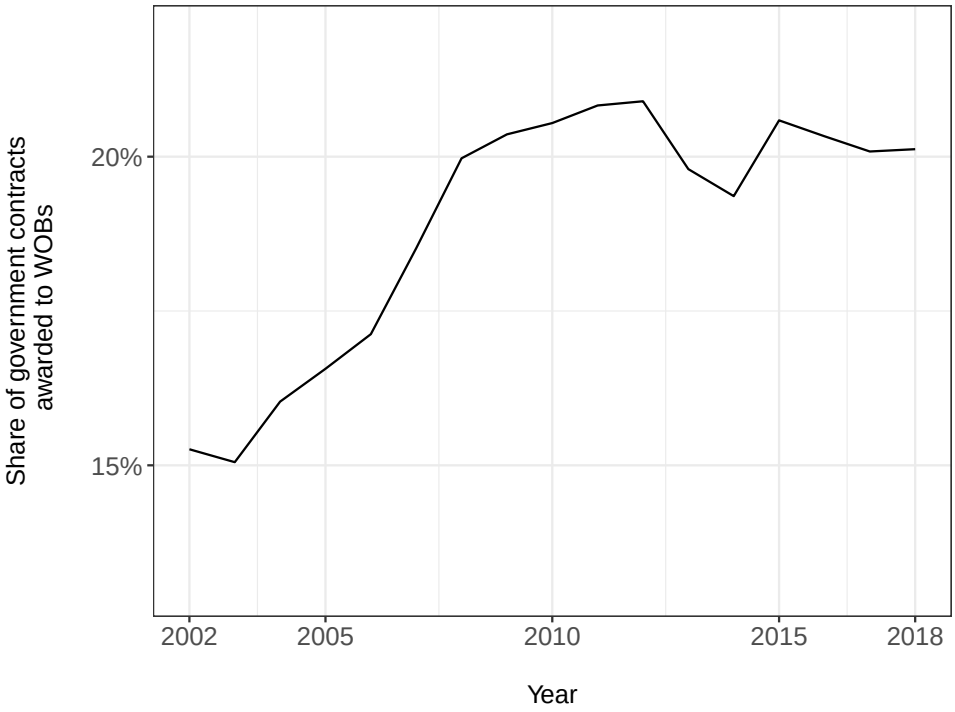
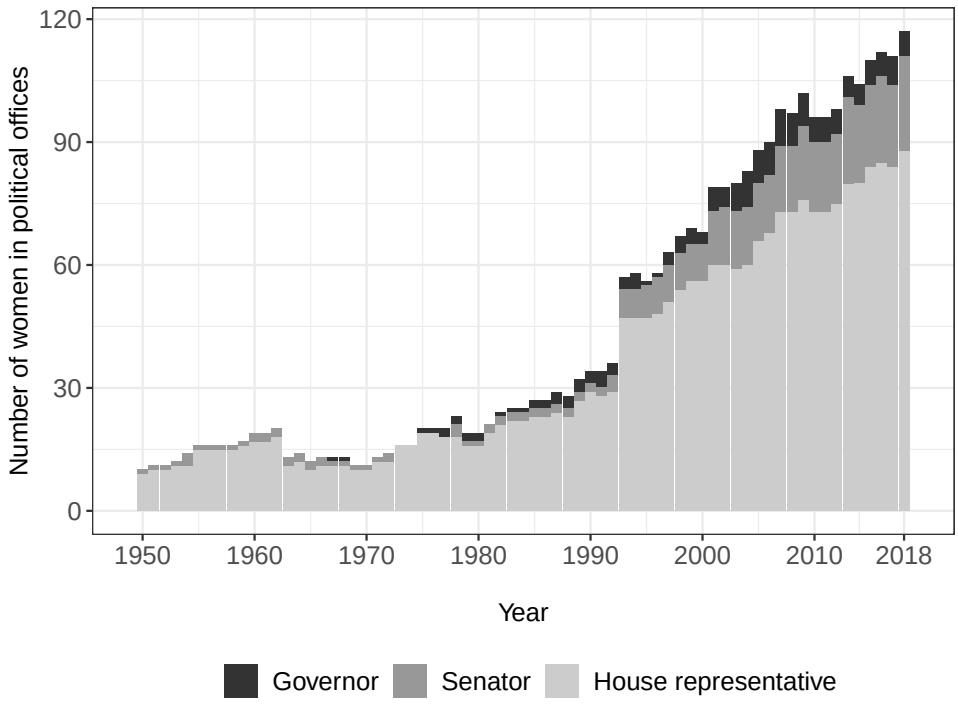


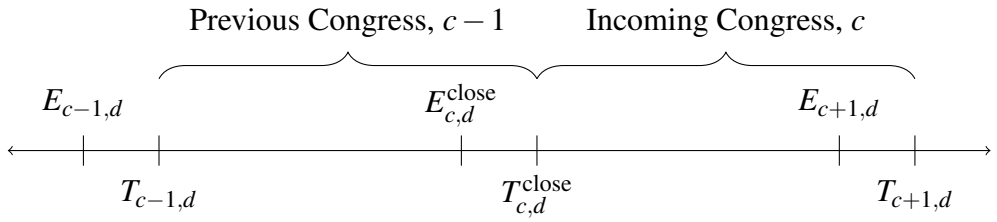
The solid line indicates the share of government contracts allocated to WOBs. The sample considers all competitive contracts awarded under the SBA program between 2002 and 2018.

Figure 1: Share of government contracts awarded to women-owned businesses over time

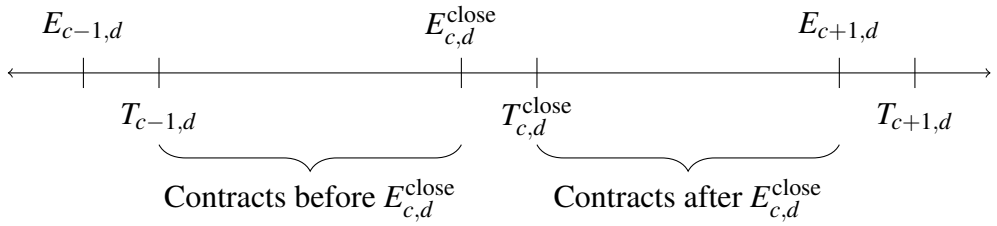


The bars indicate the number of women in political positions in the US over time. Black bars indicate the office of governor, dark grey of senator, and light grey a member of the House of Representatives. The data is obtained from the Center for American Women and Politics (CAWP), web page: `https://cawp.rutgers.edu`.

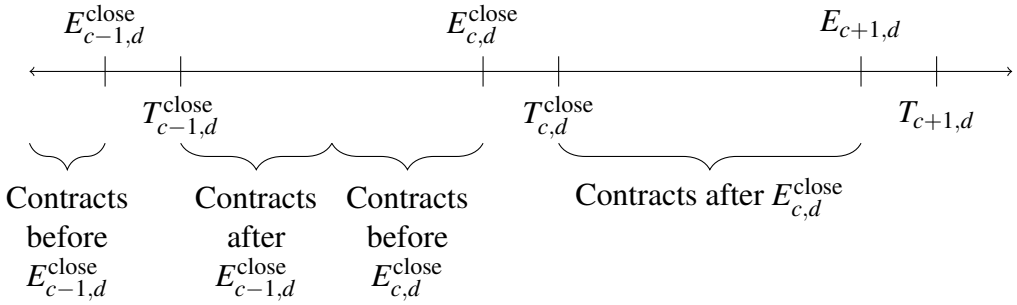
Figure 2: Number of women in US politics over time



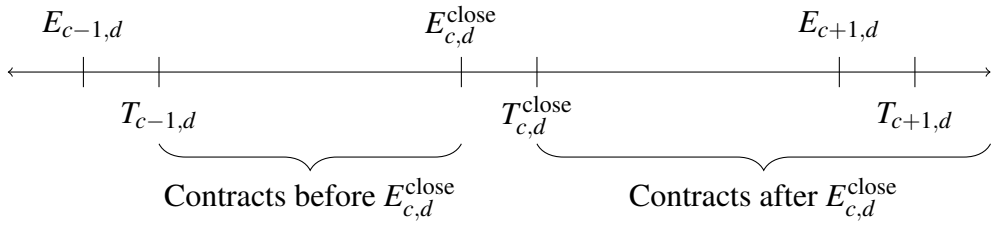
(a) Election timeline



(b) Stand-alone election



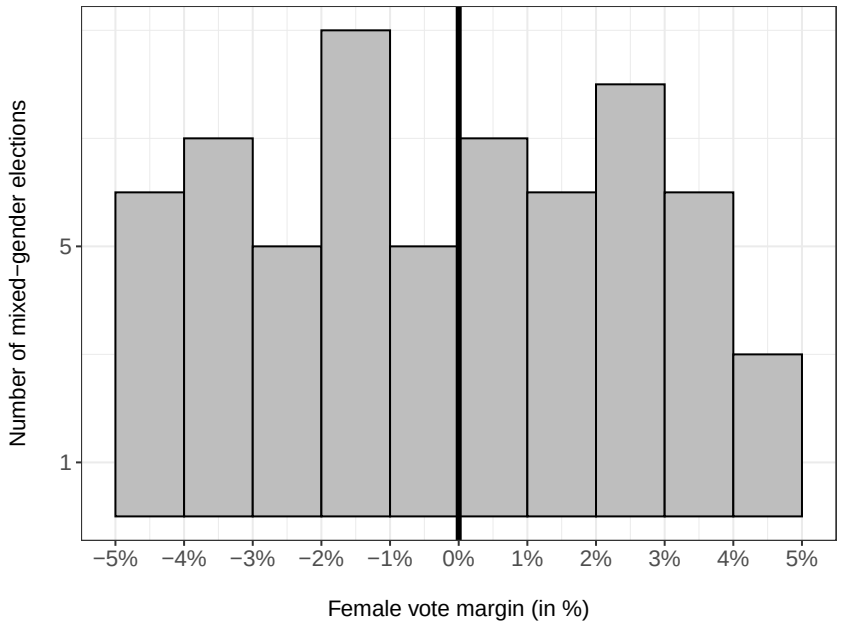
(c) Back-to-back close election



(d) Persistence analysis

This figure visualizes the timeline around elections, panel (a), and the link between government contracts and close elections for three cases: panel (b), stand-alone close election; panel (c), back-to-back close elections; and panel (d), persistence analysis. General elections E for Congress c in congressional district d are held in every even-numbered year, on the first Tuesday after the first Monday in November. The Congress starts its term T on the 3rd of January of the next calendar year. Curly brackets indicate the time for which government contracts will be linked to a close election, before and after the term start.

Figure 3: Visualization of sample construction



The figure displays a histogram of individual elections along the female vote margin. The sample consists of elections between a male and a female candidate for the 109th to the 115th Congresses. The x-axis displays the female vote margin, defined as the difference between the votes received by the female candidate and the votes received by the male candidate.

Figure 4: Histogram of female vote margin

Table 1: Summary statistics — government procurement contracts

This table reports summary statistics for government procurement contracts. The full sample considers all government contracts awarded between January 2002 and December 2018. The first three columns provide mean, standard deviation, and number of observations for several key variables for the full sample, while Columns 4 to 6 consider only the contracts associated with close elections. In addition, we provide the difference between contracts associated with close elections and the remaining ones in Column 7. The associated standard errors are clustered on years and 2-digit product and service code.

	Full sample			Close elections			Difference	
	Mean	Std. Dev.	Nr. Obs.	Mean	Std. Dev.	Nr. Obs.	Difference	Std. Err.
WOB (in %)	19.96	39.97	1,051,916	18.60	38.91	30,644	−1.41	1.15
log(Contract amount)	9.43	1.39	1,051,916	9.52	1.29	30,644	0.09	0.03
log(Maturity (in days)+1)	4.11	1.42	1,051,916	4.00	1.41	30,644	−0.11	0.07
Contract without pricing/cost terms (in %)	26.84	44.31	1,051,916	32.38	46.80	30,644	5.71	3.22
Multiyear contract (in %)	6.95	25.42	1,051,916	6.52	24.69	30,644	−0.44	0.60
Local contractor (in %)	71.22	45.27	1,051,916	67.14	46.97	30,644	−4.20	1.95
log(Sales)				14.61	1.92	27,150		
log(Number of employees)				2.56	1.37	27,156		
Age in years				15.80	7.65	27,506		
Paydex				69.10	12.02	24,134		
log(Experience_1 +1)	2.12	2.01	1,051,916	2.05	2.04	30,644	−0.07	0.11
log(Experience_2 +1)	1.26	1.72	1,051,916	1.19	1.69	30,644	−0.08	0.08
Contract with cost overrun (in %)	9.88	29.83	1,051,916	10.31	30.41	30,644	0.45	0.48
Contract with time overrun (in %)	14.16	34.86	1,051,913	14.25	34.96	30,644	0.09	0.64
log(Number of modifications +1)	0.28	0.51	1,051,916	0.29	0.52	30,644	0.01	0.01
Cancelled contracts (in %)	2.17	14.58	1,051,916	1.96	13.87	30,644	−0.22	0.13

Table 2: Panel regression explaining the probability of a government contract being awarded to a WOB

This table examines whether the presence of female House representatives correlates with the probability that a government procurement contract is awarded to a WOB. Each column displays the results of a panel regression with dependent variable being an indicator variable taking the value one if a given contract is awarded to a WOB, and zero otherwise. The main independent variable is an indicator variable taking the value one if a congressional district is represented by a female representative. We gradually consider controls as well as fixed effects for each Congress, congressional district, year, subawarding agency, and 2-digit product and service code. Coefficients are reported in percentages. For each elected official in the House of Representatives between the 109th and 115th Congress, we consider contracts between his or her term start to the subsequent election. Standard errors are reported in parentheses and clustered at year, awarding subagency, 2-digit product and service code, and congressional district. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable: Contract awarded to a WOB					
Female representative	2.29***	3.01***	2.81***	2.81***	2.81**
	(0.51)	(0.85)	(0.78)	(0.84)	(1.20)
log(Age at election)		−0.45	−0.16	−0.16	−0.16
		(0.85)	(0.85)	(0.91)	(2.03)
Republican		4.52***	4.49***	4.49***	4.49***
		(1.21)	(1.19)	(1.29)	(1.49)
Same party as House majority		0.55*	0.55*	0.55	0.55
		(0.29)	(0.29)	(0.36)	(0.36)
Same party as Senate majority		−0.33	−0.24	−0.24	−0.24
		(0.26)	(0.27)	(0.28)	(0.33)
Same party as president		−0.09	−0.09	−0.09	−0.09
		(0.10)	(0.08)	(0.19)	(0.29)
Special election		−0.52	−0.73	−0.73	−0.73
		(0.65)	(0.64)	(0.65)	(0.74)
Contract amount $ [0, 10k]		0.37	−1.08	−1.08	−1.08
		(0.74)	(1.14)	(1.04)	(1.15)
Contract amount $ (10k, 100k]		−0.19	−1.20	−1.20	−1.20
		(0.67)	(1.26)	(1.17)	(1.26)
Contract amount $ (100k, 1m]		−3.57***	−2.86**	−2.86**	−2.86*
		(0.88)	(1.32)	(1.27)	(1.38)
Contract amount $ (1m+)		−5.90***	−5.27***	−5.27***	−5.27***
		(1.09)	(1.48)	(1.43)	(1.57)
Maturity (in days) [0, 30]		1.51**	0.44	0.44	0.44
		(0.60)	(0.65)	(0.61)	(0.66)
Maturity (in days) (30, 60]		1.39***	0.44	0.44	0.44
		(0.39)	(0.49)	(0.47)	(0.52)
Maturity (in days) (60, 180]		1.33*	0.22	0.22	0.22
		(0.69)	(0.40)	(0.35)	(0.39)
Maturity (in days) (180, 365]		1.26	−0.45	−0.45	−0.45
		(0.77)	(0.62)	(0.69)	(0.77)
Maturity (in days) (365+)		1.89**	−0.30	−0.30	−0.30
		(0.80)	(0.79)	(0.85)	(0.89)
Congress FE	yes	yes	yes	yes	yes
Congressional district FE	yes	yes	yes	yes	yes
Year FE	no	no	yes	yes	yes
2-digit product and service code FE	no	no	yes	yes	yes
Awarding subagency FE	no	no	yes	yes	yes
SE clustered year	yes	yes	yes	yes	yes
SE clustered awarding subagency	yes	yes	yes	yes	yes
SE clustered 2-digit product and service code	no	no	no	yes	yes
SE clustered congressional district	no	no	no	no	yes
Observations	955,819	919,496	919,496	919,496	919,496
Adjusted R^2	0.06	0.07	0.08	0.08	0.08

Table 3: Difference-in-difference regression explaining the probability of a government contract being awarded to a WOB

This table examines whether female House representatives influence the probability that a government procurement contract is awarded to a WOB. Each column displays the results of a difference-in-difference specification with the dependent variable being an indicator variable taking the value one if a given contract is awarded to a WOB around close House of Representatives elections, and zero otherwise. The main independent variable is an indicator variable that takes the value one when the winning representative is female, *Female winner*, and an indicator variable that takes the value one when the contract is awarded after the start of the incoming Congress, *After term start*. We gradually consider fixed effects for year, individual election, awarding subagency, and 2-digit product and service code. For each close election and the corresponding congressional district, the sample considers all competitive contracts awarded within the SBA program performed in the district between the previous term start and election date (before term start) and between term start and subsequent election date (after term start). For back-to-back close elections, the period between them is split. Coefficients are reported in percentages. Standard errors are reported in parentheses and clustered at year, subagency, and 2-digit product and service code. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable: Probability of contract being awarded to a WOB				
Female winner × After term start	2.76***	2.71***	2.67***	2.67***
	(0.15)	(0.33)	(0.41)	(0.60)
Controls	no	yes	yes	yes
Year FE	yes	yes	yes	yes
Election FE	yes	yes	yes	yes
Awarding subagency FE	no	no	yes	yes
2-digit product and service code FE	no	no	yes	yes
SE clustered year	yes	yes	yes	yes
SE clustered awarding subagency	yes	yes	yes	yes
SE clustered 2-digit product and service code	no	no	no	yes
Observations	30,644	30,644	30,644	30,644
Adjusted R^2	0.08	0.08	0.13	0.13

Table 4: Counties spanning multiple congressional districts

This table examines counties spanning multiple congressional districts. The main hypothesis suggests that the probability of a government contract being awarded to a WOB increases only in the part of the county that becomes represented by female legislators (affected) and not within the part of the county which is part of a different congressional district (not affected). Each column displays the results of a difference-in-difference specification with the dependent variable being an indicator variable that takes the value one if a given contract is awarded to a WOB around close House of Representatives elections. The main independent variable is an indicator variable that takes the value one when the winning representative is female, *Female winner*, and an indicator variable that takes the value one when the contract is awarded after the start of the incoming Congress, *After term start*. For each close election, we determine counties that are partially within the relevant congressional district. Next, we limit to counties which span multiple congressional districts with at least 25% of all contracts awarded being issued in a given congressional districts. In model 1 the sample considers all contracts awarded in counties spanning multiple districts that are within the congressional district experiencing a close election. Model 2 considers the counterfactual, contracts awarded in counties that are affected by a close election and span multiple districts, but which are associated with another congressional district. The sample considers all competitive contracts awarded within the SBA program performed in the district between the previous term start and election date (before term start) and between term start and subsequent election date (after term start). For back-to-back close elections, the period between them is split. Coefficients are reported in percentages. Standard errors are reported in parentheses and clustered at year, subagency, and 2-digit product and service code. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable: Probability of contract being awarded to a WOB		
	Affected	Not affected
Female winner × After term start	3.73***	1.56
	(0.73)	(1.17)
Controls	yes	yes
Year FE	yes	yes
Election FE	yes	yes
Awarding subagency FE	yes	yes
2-digit product & service code FE	yes	yes
Observations	20,372	30,156
Adjusted R^2	0.13	0.10

Table 5: Location of contractors

This table examines whether female House representatives influence the probability that a government contract is awarded to a WOB differently among local versus non-local contractors. Each column displays the results of a difference-in-difference specification with the dependent variable being an indicator variable that takes the value one if a given contract is awarded to a WOB around close House of Representatives elections. The main independent variable is an indicator variable that takes the value one when the winning representative is female, *Female winner*, and an indicator variable that takes the value one when the contract is awarded after the start of the incoming Congress, *After term start*. For each close election and the corresponding congressional district, the sample considers all competitive contracts awarded within the SBA program performed in the district between the previous term start and election date (before term start) and between term start and subsequent election date (after term start). For back-to-back close elections, the period between them is split. Coefficients are reported in percentages. Standard errors are reported in parentheses and clustered at year, and subagency. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable: Probability of contract being awarded to a WOB				
	Local contractor		Non-local contractor	
Female winner × After term start	4.94***	4.04***	−0.25	1.98
	(0.13)	(1.06)	(1.76)	(1.51)
Controls	no	yes	no	yes
Year FE	yes	yes	yes	yes
Election FE	yes	yes	yes	yes
Awarding subagency FE	no	yes	no	yes
2-digit product and service code FE	no	yes	no	yes
Observations	20,574	20,574	10,070	10,070
Adjusted R^2	0.14	0.20	0.03	0.06

Table 6: Persistence

This table investigates if the main result persists longer than the initial term of the female representative. Each column displays the results of a difference-in-difference specification with the dependent variable being an indicator variable taking the value one if a given contract is awarded to a WOB around close House of Representatives elections, and zero otherwise. The main independent variable is an indicator variable that takes the value one when the winning representative is female, *Female winner*, and an indicator variable that takes the value one when the contract is awarded after the start of the incoming Congress, *After term start*. The sample considers contracts awarded up to 48 months after the initial term starts of only close elections that are not preceded by another close election. We include two indicator variables that indicate the time after the election. *Incoming Congress* equals one for the first Congress after the election, while *Subsequent Congress* equals one for the subsequent one. For each close election and the corresponding congressional district, the sample considers all competitive contracts awarded within the SBA program. For back-to-back close elections, the period between them is split. While the first three columns use all contractors, we restrict observations to local contractors in Columns 4 to 6. Coefficients are reported in percentages. Standard errors are reported in parentheses and clustered at year, and subagency. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable: Probability of contract being awarded to a WOB						
Female winner × Incoming Congress	3.39***	3.53***	3.50***	4.39***	4.49***	4.45***
	(0.48)	(0.51)	(0.51)	(0.51)	(0.82)	(0.84)
Female winner × Subsequent Congress	6.95***	7.71***	3.87***	8.42***	7.95***	6.77**
	(0.82)	(1.37)	(0.89)	(2.32)	(1.10)	(2.45)
Female winner × Subsequent Congress with reelected representative		−3.00			0.15	
		(4.67)			(4.62)	
Female winner × Subsequent Congress with male representative			3.59			−1.71
			(2.49)			(3.08)
Sample	full	full	full	local	local	local
Controls	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes
Election FE	yes	yes	yes	yes	yes	yes
Awarding subagency FE	yes	yes	yes	yes	yes	yes
2-digit product and service code FE	yes	yes	yes	yes	yes	yes
Observations	45,445	45,445	45,445	31,071	31,071	31,071
Adjusted R^2	0.13	0.13	0.13	0.20	0.20	0.20

Table 7: Congressional correspondence

This table investigates whether congressional requests by female legislators act as an amplifier of the main effect. Each column displays the results of a difference-in-difference specification with the dependent variable being an indicator variable taking the value one if a given contract is awarded to a WOB around close House of Representatives elections, and zero otherwise. We interact an indicator variable that takes the value one after the term start, *After term start*, with several indicator variables that take the value one if the legislator issued more requests to the DoD and its subagencies during her term relative to the previous district representative. Models one to three consider all contractors while models four to six consider local contractors. The sample consists of contracts associated with elections won by female candidate. Coefficients are reported in percentages. Standard errors are reported in parentheses and clustered at year, and subagency. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable: Probability of contract being awarded to a WOB						
After term start $\times$ Δ Correspondence > 0	0.88			5.34**		
	(1.74)			(2.39)		
After term start $\times$ Δ Correspondence regarding contracts > 0		5.42**			13.63***	
		(2.13)			(3.24)	
After term start $\times$ Δ Correspondence with DoD > 0			6.10***			6.86
			(1.73)			(4.20)
Sample	full	full	full	local	local	local
Controls	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes
Election FE	yes	yes	yes	yes	yes	yes
Awarding subagency FE	yes	yes	yes	yes	yes	yes
2-digit product and service code FE	yes	yes	yes	yes	yes	yes
Observations	12,847	12,847	6,584	9,261	9,261	4,691
Adjusted R^2	0.20	0.20	0.21	0.32	0.32	0.31

Table 8: Number of bids

This table examines whether the number of bids for each contract is affected by the gender of the election representative. Each column displays the results of a difference-in-difference(-in-difference) specification with the dependent variable being log of number of bids. The main independent variable is an indicator variable that takes the value one when the winning representative is female, *Female winner*, and an indicator variable that takes the value one when the contract is awarded after the start of the incoming Congress, *After term start*. For each close election and the corresponding congressional district, the sample considers all competitive contracts awarded within the SBA program performed in the district between the previous term start and election date (before term start) and between term start and subsequent election date (after term start). For back-to-back close elections, the period between them is split. Column 1 considers impact on all firms, while Column 2 additionally considers whether a firm is a WOB. Standard errors are reported in parentheses and clustered at year, and subagency. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable: log(Number of bids)		
Female winner × After term start	0.01	−0.00
	(0.03)	(0.03)
Female winner × WOB		−0.02
		(0.06)
After term start × WOB		−0.02
		(0.05)
Female winner × After term start × WOB		0.04
		(0.09)
Controls	yes	yes
Year FE	yes	yes
Election FE	yes	yes
Awarding subagency FE	yes	yes
2-digit product & service code FE	yes	yes
Observations	29,865	29,865
Adjusted R^2	0.27	0.27

Table 9: Networks

This table investigates whether local roots of female legislators act as an amplifier of the main effect. Each column displays the results of a difference-in-difference specification with the dependent variable being an indicator variable taking the value one if a given contract is awarded to a WOB around close House of Representatives elections, and zero otherwise. We interact an indicator variable that takes the value one after the term start, *After term start*, with several indicator variables that take the value one if the legislator had local background. The sample consists of contracts associated with elections won by female candidate. Coefficients are reported in percentages. Standard errors are reported in parentheses and clustered at year, and subagency. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable: Probability of contract being awarded to a WOB						
After term start × Born in district	−0.34					
	(1.97)					
After term start × Family		−9.11***				
		(2.89)				
After term start × High-school			−2.72*			
			(1.54)			
After term start × Post-graduate				−3.31		
				(1.94)		
After term start × Local business owner					−5.79***	
					(1.12)	
After term start × Business owner						0.64
						(1.42)
Controls	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes
Election FE	yes	yes	yes	yes	yes	yes
Awarding subagency FE	yes	yes	yes	yes	yes	yes
2-digit product & service code FE	yes	yes	yes	yes	yes	yes
Observations	18,668	18,668	18,668	18,668	18,668	18,668
Adjusted R^2	0.15	0.15	0.15	0.15	0.15	0.15

Table 10: Firm selection

This table examines whether the characteristics of firms receiving government contracts in districts represented by female representatives differ from the characteristics of firms receiving government contracts in districts represented by male representatives. Each column displays the results of a difference-in-difference specification with the dependent variable being a firm characteristic. The main independent variable is an indicator variable that takes the value one when the winning representative is female, *Female winner*, and an indicator variable that takes the value one when the contract is awarded after the start of the incoming Congress, *After term start*. The sample of contracts is similar to the sample of contracts in Table 3. Panel A considers all firms, while Panel B focuses on WOBs. Standard errors are reported in parentheses and clustered at year, subagency, and 2-digit product and service code. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Panel A: All firms

	log(Sales)	log(Employees)	Paydex	Age	log(Experience$_1$+1)	log(Experience$_2$+1)
WOB	−0.90***	−0.75***	−1.12**	−1.52***	−0.01	−0.17*
	(0.11)	(0.10)	(0.48)	(0.39)	(0.13)	(0.09)
Female winner × After term start	0.24**	0.08	0.27	0.12	0.21*	0.22*
	(0.09)	(0.06)	(0.54)	(0.26)	(0.12)	(0.12)
Controls	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes
Election FE	yes	yes	yes	yes	yes	yes
Awarding subagency FE	yes	yes	yes	yes	yes	yes
2-digit product and service type FE	yes	yes	yes	yes	yes	yes
Observations	27,150	27,156	24,134	27,506	30,644	30,644
Adjusted R^2	0.29	0.20	0.15	0.24	0.56	0.62

Panel B: Only WOBs

	log(Sales)	log(Employees)	Paydex	Age	log(Experience$_1$)	log(Experience$_2$)
Female winner × After term start	0.67**	0.28**	4.57***	1.23*	0.32	0.12
	(0.23)	(0.12)	(1.20)	(0.69)	(0.23)	(0.10)
Observations	5,362	5,363	4,521	5,436	5,699	5,699
Adjusted R^2	0.35	0.23	0.26	0.34	0.56	0.55

Table 11: Contract terms

This table examines whether the contract terms in districts represented by female representatives differ from the contract terms in districts represented by male representatives. Each column displays the results of a difference-in-difference specification with the dependent variable being a contract term. The main independent variable is an indicator variable that takes the value one when the winning representative is female, *Female winner*, and an indicator variable that takes the value one when the contract is awarded after the start of the incoming Congress, *After term start*. The sample of contracts is similar to the sample of contracts in Table 3. Panel A considers all firms, while Panel B focuses on WOBs. We control for firm characteristics. Coefficients are reported in percentages. Standard errors are reported in parentheses and clustered at year, and subagency. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Panel A: All firms

	log($ Amount)	log(Maturity+1)	No pricing/cost terms	Multiyear contract
WOB	−0.01	−0.05	0.01	−0.02***
	(0.05)	(0.05)	(0.01)	(0.00)
Female winner × After term start	−0.05	−0.01	−0.02	−0.00
	(0.04)	(0.01)	(0.03)	(0.01)
Controls	yes	yes	yes	yes
Year FE	yes	yes	yes	yes
Election FE	yes	yes	yes	yes
Awarding subagency FE	yes	yes	yes	yes
2-digit product and service type FE	yes	yes	yes	yes
Observations	24,130	24,130	24,130	24,130
Adjusted R^2	0.23	0.36	0.79	0.15

Panel B: Only WOBs

	log($ Amount)	log(Maturity+1)	No pricing/cost terms	Multiyear contract
Female winner × After term start	−0.02	0.17*	0.00	0.00
	(0.13)	(0.09)	(0.02)	(0.02)
Observations	4,521	4,521	4,521	4,521
Adjusted R^2	0.25	0.50	0.84	0.15

Table 12: Contract performance

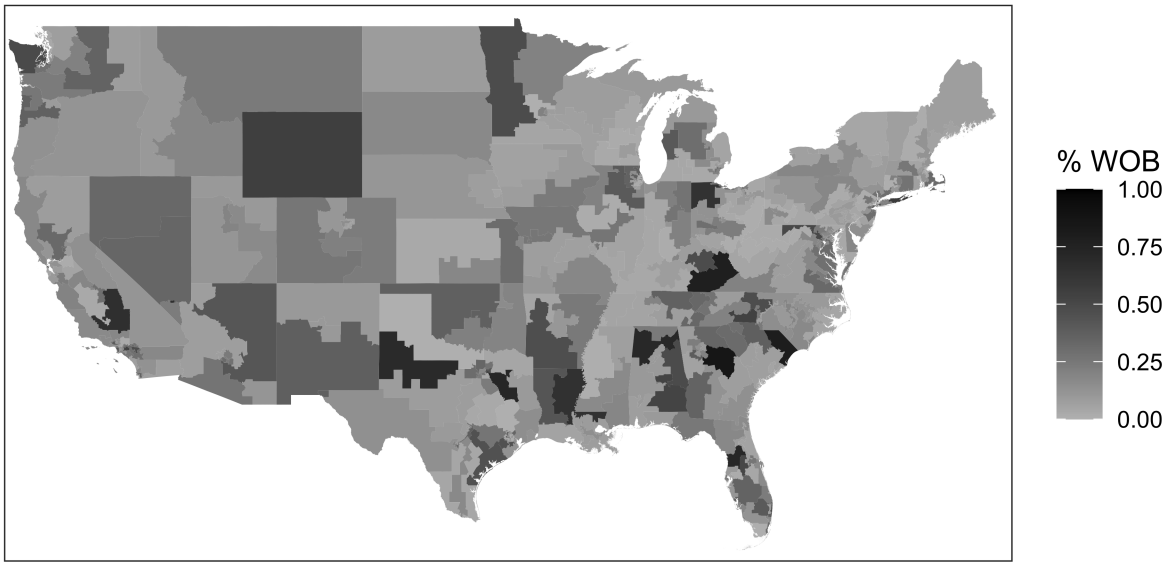
This table examines whether the contract performance of firms receiving government contracts in districts represented by female representatives differ from the contract performance of firms receiving government contracts in districts represented by male representatives. Each column displays the results of a difference-in-difference specification with the dependent variable being a contract performance. The main independent variable is an indicator variable that takes the value one when the winning representative is female, *Female winner*, and an indicator variable that takes the value one when the contract is awarded after the start of the incoming Congress, *After term start*. The sample of contracts is similar to the sample of contracts in Table 3. Panel A considers all firms, while Panel B focuses on WOBs. The dependent variables are indicator variables taking the value one if there was cost overrun, time overrun, modification, and whether the contract was cancelled. We control for polynomials of contract terms and firm characteristics. Coefficients are reported in percentages. Standard errors are reported in parentheses and clustered at year, and subagency. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Panel A: All firms

	Cost overrun	Time overrun	log(Modification+1)	Contract cancelled
WOB	0.04	−0.55*	−0.01	−0.57
	(0.57)	(0.28)	(0.01)	(0.43)
Female winner × After term start	1.60*	−1.09	−0.02	0.02
	(0.81)	(1.53)	(0.02)	(0.44)
Controls	yes	yes	yes	yes
Year FE	yes	yes	yes	yes
Election FE	yes	yes	yes	yes
Awarding subagency FE	yes	yes	yes	yes
2-digit product and service type FE	yes	yes	yes	yes
Observations	24,130	24,130	24,130	24,130
Adjusted R^2	0.22	0.14	0.31	0.02

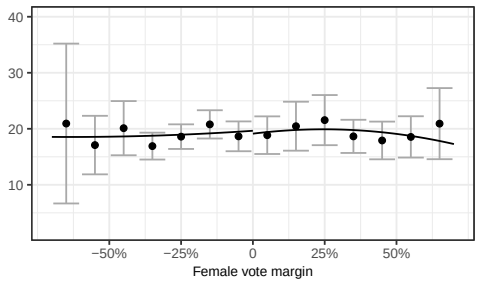
Panel B: Only WOBs

	Cost overrun	Time overrun	log(Modification+1)	Contract cancelled
Female winner × After term start	1.23	−1.66	0.01	−0.36
	(2.30)	(3.98)	(0.04)	(0.77)
Observations	4,521	4,521	4,521	4,521
Adjusted R^2	0.26	0.17	0.35	0.00

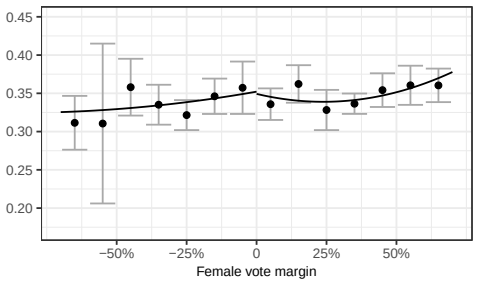


The plot displays the contract amount weighted share of government procurement contracts allocated to WOBs for each congressional district, excluding Alaska and other congressional districts that are not on mainland North America. The map displays the distribution for the 114th Congress. The sample considers all competitive contracts awarded under the SBA program.

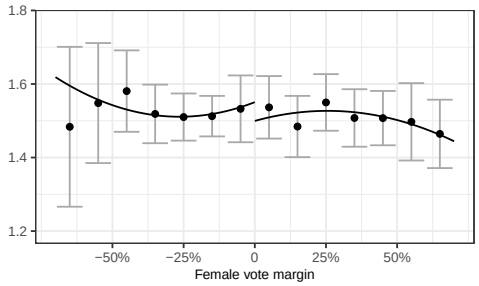
Figure A1: Share of government procurement contracts allocated to WOBs per congressional district for the 114th Congress



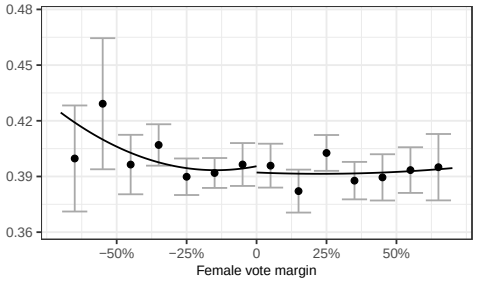
(a) Share of contracts awarded to WOBs



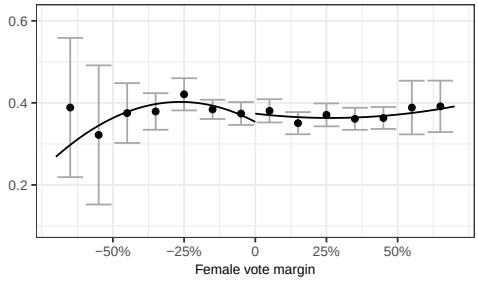
(b) Share of small businesses owned by women in district



(c) Explicit bias against women in district



(d) Implicit bias against women in district



(e) Share of contributions by women given to female candidate

This graph plots several variables measured before election against the female vote margin whereby a negative margin indicates an election loss of a female candidate and a positive margin an election victory for the female candidate. Each of the dots is the average value of the covariate outcome in vote margin bins of length 10% for the sample of elections with vote margins ranging from -75% to 75%. The grey bars indicate 90% confidence intervals for the bin mean. The solid black lines are fitted to the raw data using a second order polynomial interacted with a dummy turning 1 if the female candidate won.

Figure A2: Covariate balance test

Table A1: Variable definitions

Variable name	Description	Source
2-digit product and service code	These codes indicate "WHAT" is bought for each contract.	FPDS-NG
After term start	An indicator variable equaling one if the contract is awarded after the start of the Incoming Congress.	FPDS-NG
Age	Age of a firm (in years)	NETS
Age at election	Age of a politician	Bioguide Personal Pages
Cancelled contract	An indicator variable equalling one if a contract is cancelled	FPDS-NG
Contract amount	Contract amount at initiation (in thousand of dollars)	FPDS-NG
Correspondence	An indicator variable equaling one if a representative issued more requests to the DoD and its subagencies during her term relative to the previous district representative.	FOIA Requests
Cost overrun	An indicator variable equaling one if a firm receives an increase in a contract's award after its initiation.	FPDS-NG
Experience_1	The number of contracts executed by a firm during the previous Congress.	FPDS-NG
Experience_2	The number of contracts with the same agency providing the same product during the previous Congress.	FPDS-NG
Female representative	A district is represented by a woman.	FEC
Female vote margin	A difference between the votes received by a female candidate and the votes received by a male candidate.	FEC
Female winner	An indicator variable equaling one if the winning candidate is female.	FEC
House majority	The party that has the majority in the US House of Representatives.	FEC
Incoming Congress	An indicator variable equaling one if a contract is awarded during the first Congress after the election.	FPDS-NG
Local contractor	A firm registered in the district a contract is executed in.	FPDS-NG
Maturity	Length of a contract at initiation (in days)	FPDS-NG
Modification	An indicator variable equaling one if there is a change in contract terms.	FPDS-NG

Variable name	Description	Source
Multiyear contract	A contract for more than one but less than five years	FPDS-NG
No pricing/cost terms	An indicator variable equaling one if a firm is exempt from providing cost or pricing data.	FPDS-NG
Number of employees	Annual number of employees at a firm	NETS
Paydex	Creditworthiness calculated based on promptness of a firm's payments to creditors ranging from 0 (low)to 100 (high).	NETS
Republican	A politician is a member of the Republican Party.	FEC
Sales	Annual sales of a firm (in millions of dollars)	NETS
Senate Majority	A party that has the majority in the Senate.	FEC
Special election	A special election to the Congress occurs when a legislator resigns or is removed from office.	FEC
Subsequent Congress	An indicator variable equaling one if a contract is awarded during the second Congress after the election.	FPDS-NG
Time overrun	An indicator variable equaling one if a firm renegotiates a contract for an extension.	NETS
WOB indicator variable	The Small Business Act defines a WOB as one that is at least 51% owned and controlled by women who are US citizens, and has women manage day-to-day operations and also make long-term decisions.	FPDS-NG

Table A2: Close elections between female and male House Representatives

For each close election in the sample, this table reports the congress, the state, the district, and election type. For both the winner and the loser, we report their name, gender, party, and percentage of votes received in the election. The sample consists of all House of Representatives elections decided by a margin of maximum 5 percentage points in which a female candidate competed against a male one.

Congress	State	District	Type	Winner				Loser	
				Name	Gender	Party	Vote %	Name	Gender
112	AL	02	GE	Roby, Martha	F	REP	51.0%	Bright, Bobby	M
113	AZ	01	GE	Kirkpatrick, Ann	F	DEM	48.8%	Paton, Jonathan	M
113	AZ	02	GE	Barber, Ron	M	DEM	50.4%	McSally, Martha	F
114	AZ	02	GE	McSally, Martha	F	REP	50.0%	Barber, Ron	M
112	AZ	08	GE	Giffords, Gabrielle	F	DEM	48.8%	Kelly, Jesse	M
114	CA	26	GE	Brownley, Julia	F	DEM	51.3%	Gorell, Jeff	M
110	CT	04	GE	Shays, Christopher	M	REP	51.0%	Farrell, Diane	F
113	CT	05	GE	Esty, Elizabeth	F	DEM	51.3%	Roraback, Andrew	M
114	FL	02	GE	Graham, Gwen	F	DEM	50.5%	Southerland, Steve	M
115	FL	07	GE	Murphy, Stephanie	F	DEM	51.5%	Mica, John	M
113	FL	10	GE	Webster, Daniel	M	REP	51.7%	Demings, Val B.	F
110	FL	13	GE	Buchanan, Vern	M	REP	50.1%	Jennings, Christine	F
115	GA	06	SE	Handel, Karen	F	REP	51.8%	Ossoff, Jon	M
114	IA	01	GE	Blum, Rod	M	REP	51.1%	Murphy, Pat	F
110	IL	06	GE	Roskam, Peter J.	M	REP	51.4%	Duckworth, L. Tammy	F
109	IL	08	GE	Bean, Melissa	F	DEM	51.7%	Crane, Philip	M
112	IL	08	GE	Walsh, Joe	M	REP	48.5%	Bean, Melissa	F
112	IN	02	GE	Donnelly, Joe	M	DEM	48.2%	Walorski, Jackie	F
113	IN	02	GE	Walorski, Jackie	F	REP	49.0%	Mullen, Brendan	M
110	KS	02	GE	Boyda, Nancy	F	DEM	50.6%	Ryun, Jim	M
110	KY	03	GE	Yarmuth, John	M	DEM	50.6%	Northup, Anne M.	F
110	MI	07	GE	Walberg, Tim	M	REP	49.9%	Renier, Sharon Marie	F
115	MN	02	GE	Lewis, Jason	M	REP	47.0%	Craig, Angie	F
111	MN	06	GE	Bachmann, Michele	F	REP	46.4%	Tinklenberg, El	M
113	MN	06	GE	Bachmann, Michele	F	REP	50.5%	Graves, Jim	M
111	MO	09	GE	Luetkemeyer, Blaine	M	REP	50.0%	Baker, Judy	F
112	NC	02	GE	Ellmers, Renee	F	REP	49.5%	Etheridge, Bob	M
110	NH	01	GE	Shea-Porter, Carol	F	DEM	51.3%	Bradley, Jeb	M
113	NH	01	GE	Shea-Porter, Carol	F	DEM	49.8%	Guinta, Frank C.	M
114	NH	01	GE	Guinta, Frank C.	M	REP	51.7%	Shea-Porter, Carol	F
115	NH	01	GE	Shea-Porter, Carol	F	DEM	44.3%	Guinta, Frank	M
112	NH	02	GE	Bass, Charles	M	REP	48.2%	Kuster, Ann McLane	F
113	NH	02	GE	Kuster, Ann McLane	F	DEM	50.2%	Bass, Charles	M
115	NH	02	GE	Kuster, Ann McLane	F	DEM	49.7%	Lawrence, Jim	M
110	NJ	07	GE	Ferguson, Mike	M	REP	49.4%	Stender, Linda	F
110	NV	03	GE	Porter, Jon	M	REP	48.5%	Hafen, Tessa M.	F
112	NV	03	GE	Heck, Joe	M	REP	48.1%	Titus, Dina	F
115	NV	03	GE	Rosen, Jacky	F	DEM	47.2%	Tarkanian, Danny	M
113	NY	18	GE	Maloney, Sean Patrick	M	DEM	51.9%	Hayworth, Nan	F
114	NY	18	GE	Maloney, Sean Patrick	M	DEM	49.7%	Hayworth, Nan	F
110	NY	19	GE	Hall, John	M	DEM	51.2%	Kelly, Sue W.	F
112	NY	25	GE	Buerkle, Ann Marie	F	REP	50.1%	Maffei, Daniel B.	M
114	NY	25	GE	Slaughter, Louise M.	F	DEM	50.2%	Assini, Mark W.	M
109	NY	27	GE	Higgins, Brian M.	M	DEM	50.7%	Naples, Nancy A.	F
113	NY	27	GE	Collins, Chris	M	REP	50.8%	Hochul, Kathy C.	F
109	OH	02	SE	Schmidt, Jean	F	REP	51.6%	Hackett, Paul	M
111	OH	15	GE	Kilroy, Mary Jo	F	DEM	45.9%	Stivers, Steve	M
113	OH	16	GE	Renacci, Jim	M	REP	52.0%	Sutton, Betty	F
111	PA	03	GE	Dahlkemper, Kathy	F	DEM	51.2%	English, Phil	M
110	PA	04	GE	Altmire, Jason	M	DEM	51.9%	Hart, Melissa A.	F
111	SC	01	GE	Brown, Henry E., Jr.	M	REP	51.9%	Ketner, Linda	F
109	TX	17	GE	Edwards, Chet	M	DEM	51.2%	Wohlgemuth, Arlene	F
110	VA	02	GE	Drake, Thelma D.	F	REP	51.3%	Kellam, Philip J.	M
111	VA	02	GE	Nye, Glenn C., III	M	DEM	52.4%	Drake, Thelma D.	F
112	WA	08	GE	Reichert, Dave	M	REP	52.1%	DelBene, Suzan	F
110	WY	00	GE	Cubin, Barbara	F	REP	48.3%	Trauner, Gary	M

Table A3: Summary statistics — mixed-gender close elections for the House of Representatives

This table provides an overview of close elections analyzed in this paper. For different subsamples of the data, we provide the number and share of all close elections and the ones won by female and male candidates, respectively. The sample consists of all House of Representatives elections decided by a margin of maximum 5 percentage points in which a female candidate competed against a male one.

	Full sample		Female winner		Male winner	
	Nr.	%	Nr.	%	Nr.	%
All close elections	56	100%	28	50%	28	50%
Democratic female	35	62%	17	49%	18	51%
Republican female	21	38%	11	52%	10	48%
Democratic winner	27	48%	17	63%	10	37%
Republican winner	29	52%	11	38%	18	62%
Male incumbent	38	68%	19	50%	19	50%
Female incumbent	18	32%	9	50%	9	50%
Party change	27	48%	11	41%	16	59%
No party change	29	52%	17	59%	12	41%
Age of winner ≤ 57	34	61%	17	50%	17	50%
Age of winner > 57	22	39%	11	50%	11	50%
Gender change	28	50%	19	68%	9	32%
No gender change	28	50%	9	32%	19	68%

Table A4: Parallel trend

This table examines the existence of parallel trends around the event date. The column displays the results of a difference-in-difference specification with the dependent variable being an indicator variable taking the value one if a given contract is awarded to a WOB around close House of Representatives elections, and zero otherwise. The main independent variable indicating whether the winning representative is female, *Female winner*, is interacted with different quarters before and the period after the term start, except for the six months before the term start, which acts as a benchmark. For each close election and the corresponding congressional district, the sample considers all competitive contracts awarded within the SBA program performed in the district between the previous term start and election date (before term start) and between term start and subsequent election date (after term start). For back-to-back close elections, the period between them is split. Coefficients are reported in percentages. Standard errors are reported in parentheses and clustered at year, subagency, and 2-digit product and service code. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable: Probability of contract being awarded to a WOB	
Female winner $\times$ Quarter $t-4$	-0.67
	(1.25)
Female winner $\times$ Quarter $t-3$	-0.20
	(2.94)
Female winner $\times$ Quarter $t-2$	1.77
	(2.09)
Female winner $\times$ Quarter $t-1$	2.02
	(3.89)
Female winner $\times$ After term start	3.33^{**}
	(1.40)
Controls	yes
Year FE	yes
Election FE	yes
Awarding agency FE	yes
2-digit product and service code FE	yes
Observations	30,644
Adjusted R^2	0.15

Table A5: Placebo

Each column has a different way of constructing a placebo event. Column 1 uses mixed-gender elections decided by a vote margin above 50 percentage points (pps). Column 2 uses same-gender close elections decided by a vote margin below five percentage points. Column 3 and Column 4 shift mixed-gender close elections to a subsequent and a previous election cycle, respectively. Each column displays the results of a difference-in-difference specification with the dependent variable being an indicator variable that takes the value one if a given contract is awarded to a WOB around close House of Representatives elections. The main independent variable is an indicator variable that takes the value one when the winning representative is female, *Female winner*, and an indicator variable that takes the value one when the contract is awarded after the start of the incoming Congress, *After term start*. For each described election and the corresponding congressional district, the sample considers all competitive contracts awarded within the SBA program performed in the district between the previous term start and election date (before term start) and between term start and subsequent election date (after term start). For back-to-back close elections, the period between them is split. Coefficients are reported in percentages. Standard errors are reported in parentheses and clustered at year, and subagency. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable: Probability of contract being awarded to a WOB				
	Mixed-gender elections with vote margin $>$50 pps	Same-gender elections with vote margin $\leq$5 pps	Close mixed-gender elections shifted forward	Close mixed-gender elections shifted back
Female winner $\times$ After term start	−0.60	0.73	0.71	1.93
	(0.41)	(1.31)	(0.91)	(2.53)
Controls	yes	yes	yes	yes
Year FE	yes	yes	yes	yes
Election FE	yes	yes	yes	yes
Awarding subagency FE	yes	yes	yes	yes
2-digit product and service code FE	yes	yes	yes	yes
Observations	48,179	70,879	32,464	26,551
Adjusted R^2	0.16	0.09	0.12	0.17

Table A6: Regression discontinuity estimate

This table examines whether the results are driven by some underlying nonlinearity in the dependent variable. Each column displays the results of a regression-discontinuity specification with the dependent variable being an indicator variable taking the value one if a given contract is awarded to a WOB around close House of Representatives elections, and zero otherwise. The main independent variable is an indicator variable that takes the value one when the winning representative is female, *Female winner*, and an indicator variable that takes the value one when the contract is awarded after the start of the incoming Congress, *After term start*. We include two polynomials, *Vote margin* and *Vote margin*^{2}, and their interaction terms. For each election with a vote margin below 50 percent and the corresponding congressional district, the sample considers all competitive contracts awarded within the SBA program performed in the district between the previous term start and election date (before term start) and between term start and subsequent election date (after term start). For back-to-back close elections, the period between them is split. Coefficients are reported in percentages. Standard errors are reported in parentheses and clustered at year, and subagency. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable: Probability of contract being awarded to a WOB		
Female winner × After term start	3.50^{***}	4.74^{***}
	(0.72)	(0.74)
Vote margin × After term start	-0.12^{**}	-0.27^{***}
	(0.04)	(0.09)
Vote margin^2 × After term start		−0.00
		(0.00)
Female winner × Vote margin × After term start	0.12^{*}	0.30^{**}
	(0.07)	(0.13)
Female winner × Vote margin^2 × After term start		0.00
		(0.00)
Controls	yes	yes
Year FE	yes	yes
Election FE	yes	yes
Awarding subagency FE	yes	yes
2-digit product & service code FE	yes	yes
Observations	355,667	355,667
Adjusted R^2	0.10	0.10