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Hold Your Fire! Influence of Female Legislators on Gun Legislation in the US

Abstract

Objective
This paper considers the influence of female legislators on gun legislation across US states. Females have behavioral differences from males and likely different exposure to gun-related violence.

Method
Using data from 1991-2020, we econometrically estimate the drivers of gun legislation across US states. The dependent variables are alternately the total number of gun laws enacted, and 5-year differences in gun laws.

Results
We find that female legislators in state houses significantly increase the supply of gun laws. Female senators, on the other hand, were no different from their male counterparts. In other results, states with greater population density had more gun laws, while economic prosperity, race, and the elderly population did not generally have significant effects. Finally, when special interest groups, involving gun ownership, mass shooting episodes, and states with a uniform executive are considered, mass shootings and a uniform executive increase laws, while gun owners have the opposite effect. These findings show significance when 5-year differences in gun laws are used.

Conclusions
Our findings suggest that, when it comes to gun legislation and female legislator representation, it matters which chamber of the legislature females are elected to. Furthermore, different interest groups can significantly bear upon gun legislation.

JEL-Codes: J160, K100.

Keywords: gun control, gun laws, gender, firearms, legislatures, mass shootings, gun ownership.

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1. Introduction

The proliferation of guns and resulting gun violence has attained alarming proportions in some nations worldwide in recent years (https://www.amnesty.org/en/what-we-do/arms-control/gun-violence/). In many nations, high gun ownership rates can be tied to historical precedents related to freedom and hunting cultures. According to DiRienzo et al. (2023), there are approximately one billion small arms and light weapons (rifles, pistols, and light machine guns), in circulation worldwide. Among the developed nations, the United States figures prominently in the list of nations with high deaths from gun violence (https://www.pewresearch.org/short-reads/2023/04/26/what-the-data-says-about-gun-deaths-in-the-u-s/; Utter and True (2000)).

The gun-related violence has resulted in tougher laws for the sale, ownership, and carrying of firearms, also including the type of forearms (e.g., assault rifles) that can be made legally available to the general public (https://www.npr.org/2023/04/29/1172890034/colorado-governor-signs-gun-control-bills). The ability of lawmakers in democratic nations to enact gun legislation (including legislation facilitating or checking the possession, sale, and display of firearms), is subject to the ability and composition of different constituencies or interest groups. These constituencies may be internal or external to the legislatures or the rulemaking bodies. The internal constituencies include the composition of the legislature (political party affiliation, gender, etc.), while the external constituencies relate to the characteristics of the voting population (Tatalovich and Haider-Markel (2022)). Other external constituencies include special interest groups such as the National Rifle Association and the Brady Campaign to Prevent Gun Violence.

This paper examines the effectiveness of female legislators (both in state houses and state senates) across states in the United States in enacting gun legislation. There are some significant institutional differences in the composition of state houses and state senates, and these differences exist both within and across states. For instance, these include the lengths of terms of state legislators (https://ballotpedia.org/Length_of_terms_of_state_representatives), whether there are term limits in place (https://www.ncsl.org/about-state-legislatures/the-term-limited-states), etc. These differences impact the time legislators have to form coalitions to pass legislation and how responsive legislators would be to the demands of the electorate in passing legislation. Females in general might have different attitudes toward gun control than men, because of their greater vulnerability to certain crimes or they have behavioral differences from their male counterparts (Barber and Odean (2001), Booth and Nolen (2012)). Lizotte (2019) notes the behavioral differences of females in their attitudes toward gun control. Are states with a greater share of female legislators more likely to enact gun legislation?

Figure 1 depicts the trend in the percentage of all seats in US state legislatures occupied by women since 1988, reported separately for the House and Senate legislative chambers. The trends for both generally track upward from the start of the period through 2010, reaching around 25% in the House and 22% in the Senate, and then stabilized at those levels until around 2015. Following that, women's share of legislative seats in both chambers spiked upward, reaching about one-third of House seats and slightly less than 30% in the Senate by 2022 (most recent data available at the time of this writing). These data mask considerable variations among the

individual states. For example, in 2022 the share of House legislative seats held by women ranged from a low of 14% (West Virginia) to a high of 67% (Nevada). On the Senate side, the corresponding range for that year was from 11% (South Carolina) to 53% (Arizona).[1]

To put the gender-legislative composition in context, it is useful to dwell on the relative power of legislative groups. For instance, what proportion of legislative seats needs to be held by women for them to have a "critical mass" sufficient the have an influence on public policy in general issues directly relevant to women in particular is a matter of some debate? Advocates for gender quotas for legislative bodies typically argue that women need to have "critical minority" in the range of 30 – 40% of the total seats.[2] Others have concluded the threshold can be lower, even as low as 10% (Park (2017)). Under any circumstances, the trends depicted in Figure 1show that in recent decades many legislative bodies in the US may well exceed the level of female participation necessary to have meaningful policy impact, including legislation pertain to firearms.

We also consider another dimension of internal (to the legislatures) constituency by controlling for states where the governor and both houses are of the same political party. This relates to the efficiency of pushing legislation via relatively lower political transaction costs (Mulligan (2011); Reeping et al. (2019)).

For the external interest groups bearing on gun legislation, state-level data on membership in organizations such as the National Rifle Association are unavailable. Instead, we account for this indirectly using estimates of state household firearm ownership. Further, we also consider the impact that mass shootings (impacting victims, risk-averse populations, etc.) might have on gun control. Such events may lead to greater public support for gun control legislation (Luca (2020), Newman and Hartman (2019)) and potentially rising gun sales (Iwama and McDevitt (2021)). Overall, are internal constituencies relatively more effective at pushing gun legislation than external constituencies?

Whereas there has been a significant amount of research on gender and guns for the United States and elsewhere (see DiRienzo and Das (2023), Kelley (2021), Lizotte (2019), Middlewood et al. (2019), Schwartz (1029), Stucky et al. (2008)), this paper uniquely considers the relative impacts of female state legislators, distinguishing between female state house members and female senators, on the supply or proliferation of gun/firearm-related legislation in the United States over a long span of three decades.

Our main finding is that it is the share of female legislators in state houses that significantly increases the supply of gun laws. Female senators (share), on the other hand, were no different from their male counterparts. These findings are robust to several model specifications and with respect to two alternative estimation strategies. Thus, when it comes to gun legislation and the presence of female legislators, it matters which chamber of the legislature females are elected to.

[1] The state of Nebraska has only one legislative chamber and was excluded from the analysis.
[2] https://www.idea.int/data-tools/data/gender-quotas/quotas

Other considerations include a focus on the influence of different special interest groups on gun legislation.

The layout of the rest of the paper includes the background and the models in the next section, followed by data and estimation, results, and conclusions.

2. Background and the model

2.1 Background

As the above discussion shows, firearm ownership and related violence have drawn the attention of the public, policymakers, and academics. This has resulted in nations strengthening laws on the ownership, sale, and carrying of firearms, with differences in how certain types of weapons are regulated (e.g., assault rifles). However, the continuing episodes of violence suggest that policymakers could use additional guidance in the framing of additional laws. This paper is an attempt to understand the determinants of the supply of gun laws. Broadly speaking, the research can be seen as fitting into the discussion of the politics of gun control (see Spitzer (2020)), with a primary focus on gender empowerment in politics.

As we provide a brief overview of the related literature to highlight the contribution of this work, scholars have considered different dimensions of the gender, political representation, and gun legislation nexus.

Using a global index of arms risk, DiRienzo et al. (2013), hypothesize that greater female political representation (i.e., the proportion of seats in national parliaments held by women) has both a direct and an indirect effect on arms risk. Their mediation analysis shows that greater female political representation has both a direct and indirect effect in reducing a country's arms risk. A somewhat related aspect in a different context has been recently considered by Goel and Nelson (2023), where the authors compare the influence of females in the legislative versus executive branches of the government in combating global corruption.

The influence of special interest groups, especially run rights groups on women's attitudes towards guns has been considered by Goss (2017). This general line of inquiry is also taken by Kelley (2021) in examining the link between feminism and gun ownership. Another interesting angle is considered by Middlewood et al. (2019), where they consider the attitudes of gun-owning women. The authors find that gun-owning women show greater political participation about gun policy and a greater willingness to engage in political discussions about gun control than non-owning women.

In all this body of cross-disciplinary work on gender, political representation, and gun control, perhaps the closest work to this study is an earlier work by Stucky et al. (2008). Using the 2000 National Political Awareness Test (NPAT) data they find that female legislators in the US are more likely to indicate support for gun control policies.[3] In contrast, our study is broader and

[3] Specifically, their dataset contained 664 observations (177 female and 487 male state legislators) representing 37 states.

different in many respects. First, we distinguish between female legislators and female senators at the state level (and the results below do find differences in the influences of the two groups); second, we consider all firearm laws, not just anti-gun laws. This allows for the possibility that in some states female legislators could be instrumental in repealing anti-gun laws or in helping pass laws to promote gun ownership; and third, our dataset covers nearly all states over a period of three decades.

Based on the discussion above, we formulate our main hypothesis:

Hypothesis H1: A greater share of females in state legislatures would increase the proliferation of gun-control laws, ceteris paribus.

Next, we outline our empirical model to test the above hypotheses, using time series data across US states.

2.2 The model

Note that we are using gun legislation, rather than gun control, in the title of the paper and in the analysis because some state laws in some states over time involve the repeal of earlier laws and are thus not related to gun control (rather, are anti-gun control

Based on the above discussion and to test hypothesis H1, we outline our empirical model. The general form of the model is the following (with individual observations being at the state level – see Table 1):

Gun laws_j = f(female house members (FemHOUSE), female senate members (FemSENATE), Z, Race (BLACK), Age (ELDERLY), M) …(1)

j = LAWtotal, LAWdiff

Z = INCOMEpc, PopDensity

M = MASSshoot, SAMEparty, GUNowners

The dependent variable is the total gun laws in a state in any given year. On average, there were 24 laws in place per state over the 1991-2020 period. Since many laws (and other controls variable) change slowly over time, we also use five-year differences in gun laws (LAWdiff) as another dependent variable.

The main explanatory variables of interest include the share of female legislators across states, including the percentage of females in state houses (FemHOUSE), and the corresponding percentage in share senates (FemSENATE).

The correlation between FemHOUSE and FemSENATE in our sample is 0.7, consistent with the trend over time for these variables as depicted in Figure 1. The positive correlation of LAWtotal with females in the state houses is somewhat greater than that between LAWtotal and females in state senates (Table 1b). The formal analysis will reveal the relative strengths of these relations, test hypothesis H1, and determine whether the impacts of females in state houses and those in

state senates on gun legislation are alike. As stated above, the share of females accounts for an internal legislative interest group.

Economic prosperity (INCOMEpc) and population density (PopDensity) are controls that are accounted for in all models. More prosperous states, ceteris paribus, would have better governance, perhaps reducing the need for additional laws, while greater population density is related to information flows about the pros and cons of guns which would, in turn, impact the demand for legislation. Also, there is some evidence that firearm laws impact gun-related crime differently in urban rural areas (Siegel, et al. 2016).

We also account for social or demographic aspects by including controls for the elderly and the share of African Americans in the population. The elderly would be more likely to be a somewhat passive special interest group and also more likely to vote as a block, while African Americans might have different attitudes towards gun legislation, given their history of interactions with law enforcement and crime. The role of culture and race in the gun debate has been noted by Blanco (2016), Hayes et al. (2020), and Schwartz (2019), among others.

Finally, extended models account for additional interest groups that could bear upon the propensities to legislate guns across states. These include gun-owning households, incidents of mass shootings, and instances where the executive body in a state (i.e., both chambers and the governor) belong to the same political party. The role/influence of a divided government has been recognized in other contexts (Mulligan (2011)), and the gun ownership-legislation nexus has been the focus on a number of studies (Burton et al. (2021), Kelley (2021), Middlewood et al. (2019), Reeping et al. (2019)).[4]

3. Data and estimation

3.1 Data

Data on individual state firearm-related related laws are drawn from the State Firearm Laws organization and cover the period from 1991 to 2020. In all, 133 firearm laws across US states are included in the data set, and for each law and year, a binary code is assigned to each state indicating either the presence or absence of the law in that state. The laws included in the analysis are comprehensive, and include the following 14 categories of state gun law policy:

- Dealer regulations
- Buyer regulations
- Domestic violence
- Background checks
- Possession regulations
- Concealed carry permitting
- Assault weapons ban
- Child access prevention
- Stand your ground
- Preemption of local regulations
- Gun manufacturer immunity
- Prohibitions for high-risk gun possession

[4] Urbatsch (2019) notes the possibility of undercounting in tracking gun ownership.

- Ammunition regulations
- Gun trafficking
- (e.g., mental health considerations)

The average number of firearm laws across all states nearly doubled over the time period analyzed, and there was wide variation among the individual states. For example, Idaho had only one law in 2020, while California had 111 in the same year.[5]
Data on the number of women holding legislative seats as state representatives and senators are drawn from the Center for American Women and Politics. No distinction is made as to the political party of the officeholder. Annual data on the number of mass public shootings by state are taken from The Violence Project, a nonprofit research group. They use a narrow definition of mass shootings, adopted from the Congressional Research Service, to include situations where a shooter kills four or more strangers in a public place. Annual data on household firearm ownership rates state are drawn from the Rand Corporation and are available up until 2016.

Data for the remainder of the variables in the model are drawn from standard sources, commonly used in empirical research involving the 50 US states. Complete details about the data, including variable names, definitions, and data sources are provided in Table 1.

3.2 Estimation

Models using LAWtotal as the dependent variable will be estimated using all annual data for the US states over the 1991 – 2020 period with the exception of Nebraska which has a unicameral legislature, resulting in a total sample size of 1469.[6] All right-hand side regressors will be lagged one year in order to account for the implementation time between the passage of any gun law legislation and the date that it actually officially becomes law and is so recorded in our data set. To mitigate concerns on omitted variable bias and unobserved heterogeneity, individual state fixed effects will be included in all model setups. Each model is fit using feasible generalized least squares that allows for the presence of AR(1) autocorrelation within panels and cross-sectional correlation and heteroskedasticity across panels.

To get a different perspective on the possible dynamics between female participation in state legislatures and firearm-related legislation, 5-year windows of legislative enactments (LAWdiff) are analyzed for the periods ending in 2000, 2005, 2010, 2015, and 2020. For example, the 2000 period reflects the net change in gun laws over the 1996-2000 time period in a given state.[7] In these models, beginning-of-the-period values are used as right-hand-side regressors. For example, in the analysis of the changes in state gun laws over the 1996-2000 period, the proportion to total legislative seats held by women in 1996 is used. Estimation of these models is accomplished via ordinary least squares.

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[5] For further details on the methodology used to determine state firearm policy in each state, see Siegel (2017).
[6] Data on the percentage of senate seats held by women in Louisiana in 1991 was missing, resulting in that observation also being dropped from the dataset.
[7] Over the entire 1991-2020 period in our dataset there are 116 instances/years where a state repealed one or more gun laws.

4. Results

4.1 Baseline models

Table 2 reports our baseline models, with two models each for LAWtotal and LAWdiff as the dependent variable, respectively.

The results show that the share of females in state legislators in state houses increases gun legislation. This is true whether the dependent variable is total gun laws (LAWtotal) or 5-year differences in laws (LAWdiff). On the other hand, the effect of female senators in state houses is statistically insignificant. Thus, hypothesis H1 is supported, with the qualification that when it comes to gun legislation, it matters where the share of female legislators (i.e., state houses versus state senates) is changing. Quantitatively, the elasticity of LAWtotal with respect to FemHOUSE (using Model 2.1a, with the elasticity evaluated at the respective means) is 0.05. In other words, a ten percent increase in the strength of female legislators would, ceteris paribus, increase the number of gun laws by about 0.5 percent.

Furthermore, greater population density at the state level, ceteris paribus, increases the proliferation of gun laws. This finding is consistent with greater awareness (demand for) gun legislation in areas with greater population concentration. More prosperous states were generally no different from other states in terms of gun legislation, with the resulting coefficient achieving marginal statistical significance in one of the four models estimated.

When social variables (see Blanco (2016), Burton et al. (2021), Hayes et al. (2020)), including race (BLACK) and age (ELDERLY), are introduced in Models 2.2a and 2.2b, the resulting coefficients fail to achieve statistical significance at the usual levels.

The baseline models inform us about the potential variables to include in the extended analysis, to which we turn next.

4.2 Additional considerations: Effects of different interest groups

Table 3 considers the influences of different interest groups on gun legislation across US states. Specially, we include the number of mass shootings (MASSshoot) and gun ownership (GUNowners) to account for external interest groups, and the variable SAMEparty identifies states/years when a state legislature had the governor and both houses of the same political party to account for (another dimension of) internal interest group.[8]

A greater share of female legislators in state houses again showed a positive effect on gun legislation, with stronger relative statistical support when LAWtotal was the dependent variable in Models 3.1a-3.3a. Furthermore, the magnitudes of the coefficients on FemHOUSE in Models 2.1a and 3.1a are almost identical. On the other hand, almost all the models estimated showed the

[8] The National Rifle Association (NRA) is a well-known and powerful pro-gun group in the United States (Schwartz (2019)). However, information on NRA membership overtime does not seem to be publicly available, preventing us from including the influence of this group in the analysis. Religious groups might be another relevant interest group in this context (see Upenieks et al. (2023)).

coefficient on FemSENATE to be statistically insignificant (the lone exception being the marginal significance in Model 3.2a).

The three additional special interest variables, MASSshoot, SAMEparty, and GUNowners, were all statistically insignificant in Models 3.1a-3.3a when LAWtotal is the dependent variable. However, Models 3.1b-3.3b show greater statistical traction when LAWdiff is the dependent variable. Specifically, consistent with intuition, more mass shootings and legislators/governor of the same party made gun legislation more likely, while more gun owners made gun legislation less likely.

Additionally, to account for the persistence or positive spillovers from legislations, Model 3.4b includes total gun laws (LAWtotal) as a regressor. The coefficient on LAWtotal was positive and significant at the 10 percent level.

Finally, the results for population density were mostly positive and significant (especially with LAWtotal as the dependent variable) and those for economic prosperity were statistically mostly insignificant. These are largely consistent with the findings in Table 2.

4.3 Robustness check: Considering the role of House and Senate female membership separately

The models considered above used both House and Senate female legislative membership. As a robustness check, we also ran the models separately with either FemHOUSE or FemSENATE as the main regressor, using the same general format of Table 2.

Running the models separately, FemHOUSE always holds statistical significance, FemSENATE never does, using LAWtotal as the dependent variable. However, with LAWdiff as the dependent variable, FemHOUSE is again significant, and FemSENATE attains significance in some cases. These results are not reported, but are available upon request. Some of the difference might be due to the differences within and across state in the lengths of House versus Senate legislative terms (https://ballotpedia.org/Length_of_terms_of_state_senators), which would have implications for coalition formation and the elected officials' response to different interest groups. This would all impact their voting behavior on gun legislation.

The concluding section follows.

5. Concluding remarks

Gun control continues to be a pressing political issue in the United States and elsewhere (https://www.cfr.org/backgrounder/us-gun-policy-global-comparisons; https://www.pbs.org/newshour/nation/how-do-u-s-gun-laws-compare-to-other-countries), with academics trying to inform the debate via formal investigations based on different aspects of the issue, data, and jurisdictions. This paper considers the influence of female legislators in influencing the supply or proliferation of gun or firearm legislation across states in the United States. Females have some different behavioral attributes from their male counterparts and might also have different exposure to gun-related violence or recreational use of guns. Furthermore, the separate consideration of Senate and House legislative memberships allow us to consider the

effects of relative institutional differences related to term limits and the length of elected tenure, and how these might impact the relative voting propensities of legislators.

The gender composition of legislatures has been changing over time in the United States. In recent decades, many legislative bodies in the US exceed the level of female participation necessary to have meaningful policy impact on legislation (Figure 1).

Using data on state-level gun-control laws over the 1991-2020 period, we find that it is the share of female legislators in state houses that significantly increases the supply of gun-control laws. Female senators (share), on the other hand, were no different from their male counterparts. These findings are true whether total gun laws are considered, or 5-year differences in laws are used over the time period in question. The relatively greater ability of female House members to enact gun legislation might be due to their greater responsiveness to the demands of special interest groups (because of the relatively shorter term in office of House members compared to Senate members - https://ballotpedia.org/Length_of_terms_of_state_representatives).

Thus, when it comes to gun legislation and the presence of female legislators, it matters which chamber of the legislature females are elected to – political empowerment of women across US states has dissimilar effects of gun legislation. The effect of female state house legislators is substantial quantitatively as well - a ten percent increase in the strength of female state House members would, ceteris paribus, increase the number of gun laws by about half a percent.

In other results, states with greater density of population had more gun-related laws, while economic prosperity, race, and the elderly population did not generally have significant effects. Finally, when special interest groups and related incidents involving gun ownership, the number of mass shootings, and states-years with a politically uniform executive are considered, mass shootings and uniform executive increase the supply of laws, while gun owners have the expected opposite effect. These findings, however, show significance only when 5-year differences in gun laws are employed.

From a policy perspective, this research underscores the point that as the gender composition of state legislatures changes over time, it would have impacts on the frequency of gun legislation. However, female legislators in not all chambers of the legislatures are likely to be equally effective in pushing/enacting such laws.

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Table 1
Variable definitions, summary statistics and data sources

Variable	Mean (standard deviation)	Source
Total firearms related laws in place, each US state. [LAWtotal]	24.03 (22.8)	[1]
Five-year change in total firearms related laws for periods ending in 2000, 2005, 2010, 2015, 2020. [LAWdiff]	1.77 (5.2)	[1]
Percentage of total seats in state legislature (House) held by women. [FemHOUSE]	24.01 (8.1)	[2]
Percentage of total seats in state Senate held by women. [FemSENATE]	20.66 (9.7)	[2]
Per capita personal income (in thousands of 1982-84 dollars) [INCOMEpc]	17.47 (3.31)	[3]
Population density (people per sq. miles of land area) [PopDensity]	160.94 (199.78)	[4]
Percentage of population African American alone or in combination with another race. [BLACK]	10.96 (9.5)	[5]
Percentage of population aged 65 and older. [ELDERLY]	13.41 (2.3)	[6]
Total number of mass shootings. [MASSshoot]	0.16 (0.4)	[7]
Governor and state legislature – House and Senate - are controlled by the same political party (= 1 if yes, = 0 if no) [SAMEparty]	0.55 (0.5)	[8]
Estimates of household firearm ownership rates (based on factor scores for household gun ownership latent factor). Data are available from 1980-2016 [GUNowners]	0.42 (0.1)	[9]

Notes: Statistics pertain to observations used in the first model that the variable appears. Years of data cover 1991-2020. The state of Nebraska has only one chamber in the legislature and is excluded from the analysis.

Sources:

[1]. State Firearms Laws. https://statefirearmlaws.org/resources (accessed April 2023).

[2]. Center for American Women and Politics. https://cawpdata.rutgers.edu/women-elected-officials/position?current=1&yearend_filter=All&level[]=State%20Legislative&items_per_page=50 (accessed February 2023). The strength of state legislatures data are from The Book of the States (https://issuu.com/csg.publications/stacks/46495f12f95847e6935d331969ed650a), (accessed March 2023).

[3]. Bureau of Economic Analysis https://www.bea.gov/data/income-saving/personal-income-by-state (accessed March 2023), Federal Reserve Economic Data, CPI for all urban consumers: All items in U.S. city average 1982-84=100, https://fred.stlouisfed.org (accessed April 2023).

[4]. US Census Bureau https://www.census.gov/geographies/reference-files/2010/geo/state-area.html (accessed March 2023).

[5]. https://en.wikipedia.org/wiki/List_of_U.S._states_and_territories_by_African-American_population#References. Data are for Census years. Non-Census year data are interpolated. (accessed March 2023).

[6]. Kaiser Family Foundation.

https://www.kff.org/other/state-indicator/distribution-by-age/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D. Some data are interpolated before 2008. (accessed March 2023).
[7]. https://www.theviolenceproject.org/mass-shooter-database
[8]. https://ballotpedia.org/State_government_trifectas#Historical_trifecta_numbers (includes Nebraska with a unicameral legislature.
[9]. Rand Corporation. https://www.rand.org/pubs/tools/TL354.html.

Table 1b
Correlation matrix of key variables

	LAWtotal	FemHOUSE	FemSENATE
LAWtotal	1.00		
FemHOUSE	0.22	1.00	
FemSENATE	0.19	0.65	1.00

Notes:
See Table 1 for variable details.
N = 1470.

Table 2
Female legislators and gun legislation: Baseline models

Dependent variable→	**LAWtotal**		**LAWdiff**	
	(2.1a)	**(2.2a)**	**(2.1b)**	**(2.2b)**
FemHOUSE	0.047** (3.7)	0.046** (3.4)	0.114** (2.0)	0.116** (2.0)
FemSENATE	0.000 (0.0)	0.001 (0.1)	0.014 (0.4)	0.013 (0.3)
INCOMEpc	-0.074 (1.3)	-0.095 (1.4)	0.055 (0.04)	0.053 (0.4)
PopDensity	0.153** (8.1)	0.147** (7.3)	0.007** (2.7)	0.007** (2.5)
BLACK		0.352 (1.3)		-0.001 (0.03)
ELDERLY		-0.062 (0.6)		0.062 (0.5)
Observations	1469	1469	245	245
Wald χ^2	2272.6**	2509.1**		
R-squared			0.14	0.14
F-value			9.0**	6.3**

Notes:
See Table 1 for variable details. All models include a constant term.
Models 2.1a and 2.1b include state fixed effects (not reported to conserve space). Models are estimated in STATA using xtgls. This estimator uses feasible generalized least squares that allows for the presence of AR(1) autocorrelation within panels and cross-sectional correlation and heteroskedasticity across panels. Models 2.1b and 2.2b, with LAWdiff as the dependent variable are estimated via OLS.
The numbers in parentheses are absolute t-statistics/z-statistics based on robust standard errors in the case OLS regressions , and * and **, respectively, statistical significance at the 10% and 5% (or better) levels.

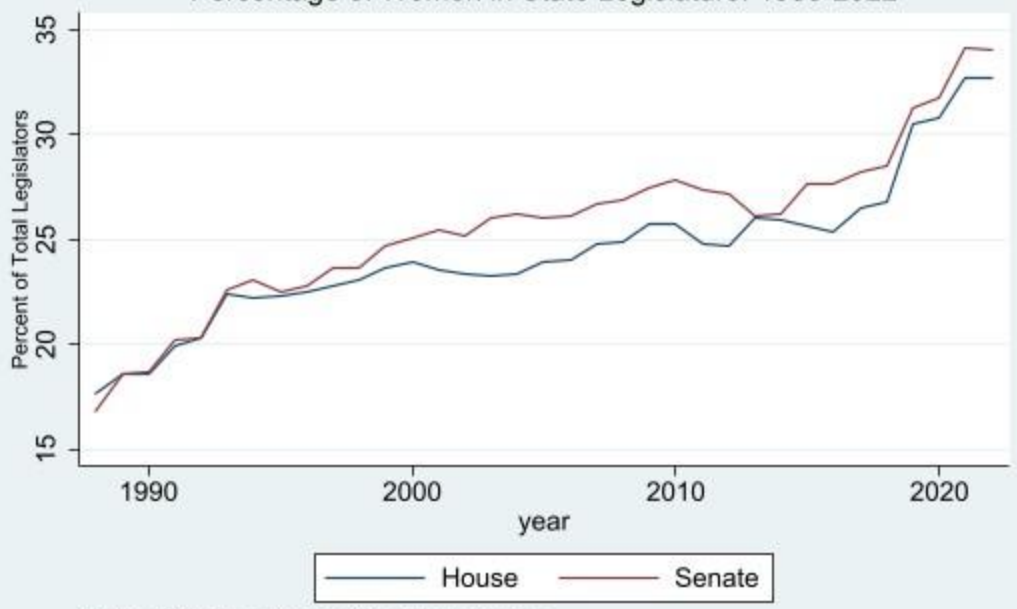
Table 3
Female legislators and gun legislation: Additional considerations

Dependent variable→	**LAWtotal**			**LAWdiff**			
	(3.1a)	**(3.2a)**	**(3.3a)**	**(3.1b)**	**(3.2b)**	**(3.3b)**	**(3.4b)**
FemHOUSE	0.047** (3.7)	0.047** (3.9)	0.052** (3.9)	0.128** (2.3)	0.055 (1.0)	0.108* (1.9)	0.106* (1.8)
FemSENATE	0.000 (0.0)	-0.004 (0.5)	0.002 (0.2)	-0.003 (0.1)	0.057 (1.3)	-0.004 (0.1)	0.012 (0.3)
INCOMEpc	-0.075 (1.3)	-0.073 (1.3)	-0.057 (1.1)	0.025 (0.2)	0.286** (2.3)	-0.014 (0.1)	-0.019 (0.1)
PopDensity	0.152** (8.1)	0.125** (6.3)	0.126** (6.8)	0.008** (2.8)	0.003 (1.6)	0.004 (1.4)	0.005* (1.8)
MASSshoot	0.143 (1.2)			1.374** (2.9)			
SAMEparty		-0.045 (0.5)			1.080* (1.9)		
GUNowners			0.041 (0.1)			-7.345** (2.1)	
LAWtotalLAG							0.040* (1.8)
Observations	1469	980	1322	245	196	245	245
Wald χ^2	2304.5**	10994.1**	2729.5**				
R-squared				0.17	0.17	0.15	0.15
F-value				9.8**	7.2**	7.8**	7.4**

Notes:
See Table 2.

Figure 1

Percentage of Women in State Legislature: 1988-2022



Source: Center for American Women and Politics