Online Appendix

Who Pays for Crime? Criminal Violence, Right-wing Incumbents, and Electoral Accountability in Latin America

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Appendix A: "State of the Union" speeches in Latin America

In this section, we expand the analysis conducted in the manuscript to the "state of the union" speeches in Chile and Mexico and include 190 new speeches from 11 other countries.[3] We identify the frequency of crime-related words[4] and whether a president is right-wing or not.[5] In Table A1 we regress the frequency of crime-related words on a binary indicator of right-wing presidents and the number of words used in the given speech. The unit of analysis corresponds to each "state of the union." We also include models with year and country fixed effects.

Table A1. Results of text analysis of presidential speeches in 13 Latin American countries

| | Frequency of crime-related words | | | |
	(1)	(2)	(3)	(4)
Right-wing president	4.83*	5.09*	5.26**	5.13**
	(2.52)	(2.62)	(2.37)	(2.43)
N	261	261	261	261
Year fixed effects	No	Yes	No	Yes
Country fixed effects	No	No	Yes	Yes
Total number of words	Yes	Yes	Yes	Yes

* p<0.1, ** p<0.05, *** p<0.01

The results show that right-wing presidents use five more crime-related words per speech than non-right-wing presidents (depending on the specification). The effect is significant but smaller than the one reported in the manuscript. We expected to see effect sizes not as large as before since we are including countries where ideological labels are less clear than in Chile and Mexico. In any case, we find a significant difference between right and non-right-wing presidents across a large number of cases in Latin America, which illustrate how certain candidates are more likely to emphasize crime than others.

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[3] 251 speeches in total from 13 countries (Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Paraguay, Peru, Uruguay, and Venezuela). We include all the cases where we there was an overlap between the "state of the union" speeches dataset (Arnold, Doyle, and Wiesehomeier 2017) and the ideology dataset (Baker and Greene 2016).

[4] Crime-related words: *delincuencia*, *crimen*, *delincuentes*, *criminales*, *seguridad*, *carabinero*, *carabineros*, *policía*, *policías*, *delitos, narcotraficantes*, *narcotráfico*, *criminal, delictual, violencia, delito, criminalidad, delincuenciales, delincuente, policiaca, policiacos, policial, policiales, violentos, pdi (policía de investigaciones)*.

[5] Using Baker and Greene (2016), we identify the following right-wing presidents: Carlos Menem, Sebastian Piñera, Andrés Pastrana, Alvaro Uribe, Juan Manual Santos, Miguel Angel Rodríguez, Abel Pacheco, Sixto Durán Ballén, Alvaro Noboa, Armando Calderón Sol, Francisco Flores, Antonia Saca, Alvaro Arzú, Alfornso Portillo, Oscar Berger, Otto Perez Molina, Vicente Fox, Felipe Calderón, Juan Carlos Wasmosy, and Albert Fujimori.

Appendix B: Evidence from PELA

We also provide evidence from the Observatorio de Elites Parlamentarias Latinoamericanas (PELA) project to show that right-wing legislators are more likely than non-right-wing legislators to focus on security.

Figure A1 is based on answers to the following question: "Consider these different areas of public spending. Please tell me which areas should receive more funding given their importance for the country's development?" (Policy areas mentioned: infrastructure, health, citizen security, education, defense, housing, pensions/social security, the environment). The figure shows the percentage of legislators who mentioned "citizen security" as one the two areas requiring more funding. It is worth restating that the PAN in Mexico and the RN and UDI in Chile are right-wing parties.
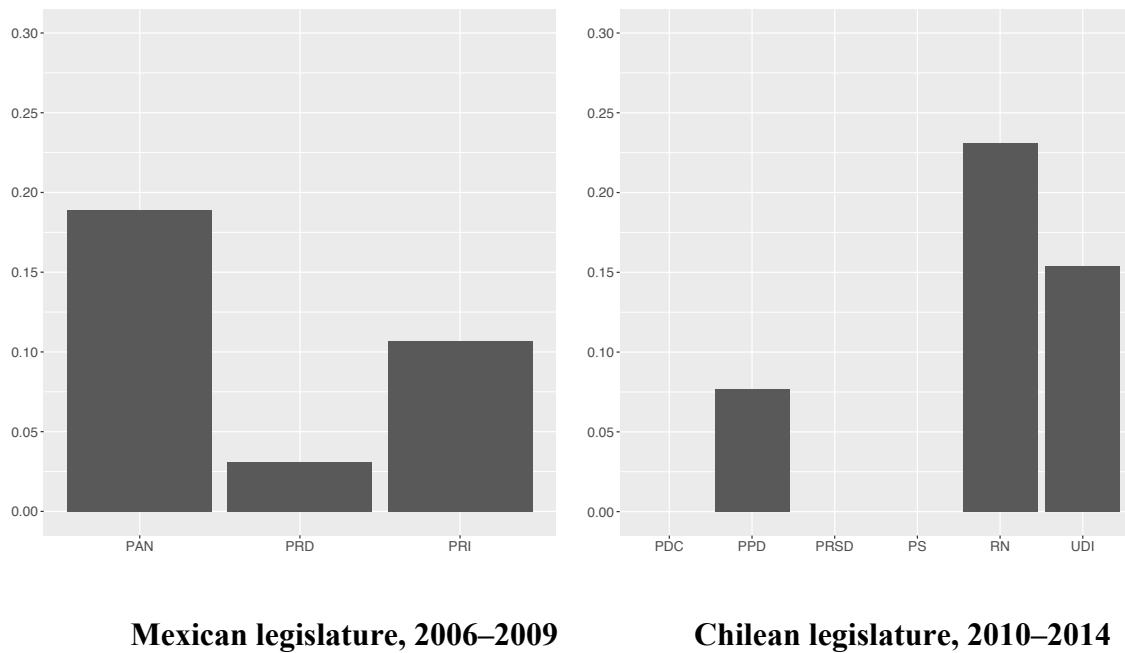

Mexican legislature, 2006–2009   **Chilean legislature, 2010–2014**

Figure A1. Percentage of legislators who want to increase funding for citizen security

Appendix C: Evidence from CSES

In this section we show that citizens are aware that right-wing parties talk more about crime and propose more punitive solutions. Unfortunately, the survey evidence on this question is sparse. Regional survey barometers such as LAPOP and Latinobarómetro do not ask questions that would allow us to capture citizens' perception of parties' policy priorities and issue ownership. However, some CSES election studies include items that can be used to assess citizens' perceptions of issue ownership. The CSES 2006 Mexico survey and the 2009 Chile survey, both implemented in electoral years, asked respondents which candidate/party in the presidential elections appeared more competent to address the most important problems facing the country. As can be observed in figure A2, in both cases the candidate of the right-wing party (Calderón in Mexico and Piñera in Chile) was perceived by the public as much more competent in the area of public security.
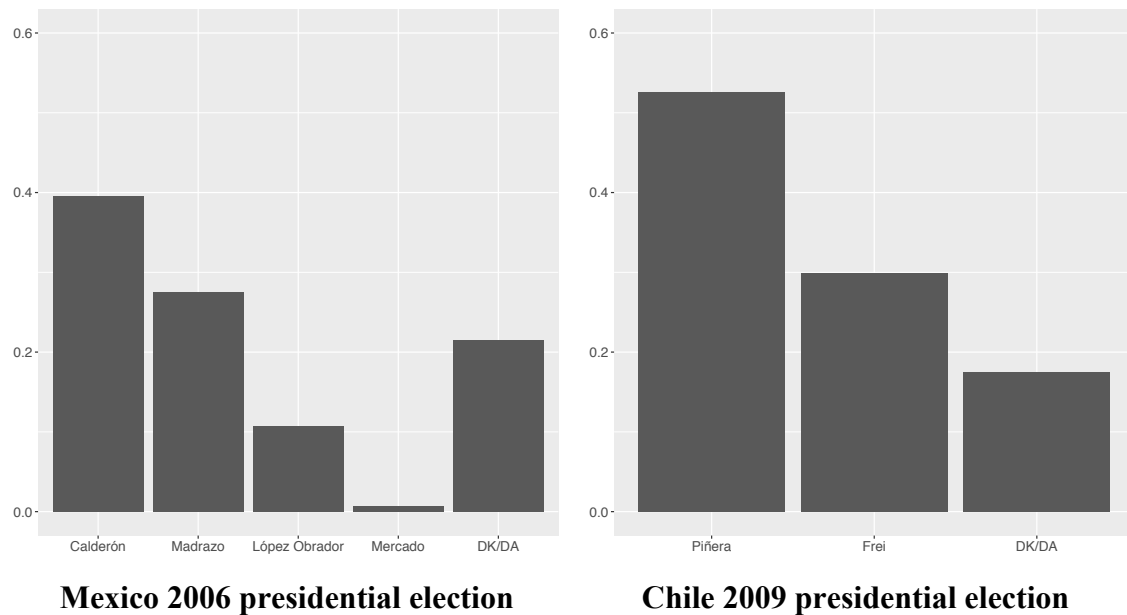

Mexico 2006 presidential election   **Chile 2009 presidential election**

Figure A2. Party/candidate most competent in the area of public security (Source: CSES)

Appendix D: Evidence from Mexican Panel Studies

In this section, we use the Mexico panel study conducted during and after electoral campaigns since 2000. As can be observed, PAN presidential candidates tend to be perceived as better able to fight crime than their centrist (PRI) and left-wing (PRD) competitors.
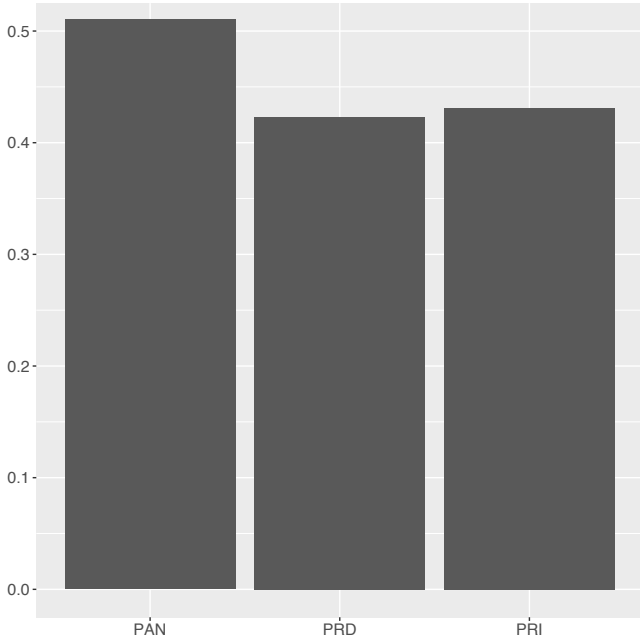

Figure A3. Percentage of survey respondents who perceive presidential candidates as able to fight crime in Mexico (average by party for three presidential elections: 2000, 2006, 2012).

Appendix E: Evidence from Chile

In a survey implemented three months before the 2017 presidential elections in Chile, Visconti (2021) shows how respondents can connect policy preferences with ideological labels. Figure A4 replicates Visconti's (2021) figure 1b, which indicates answers to the following question: do you associate the use of iron-fist policies with certain politicians?
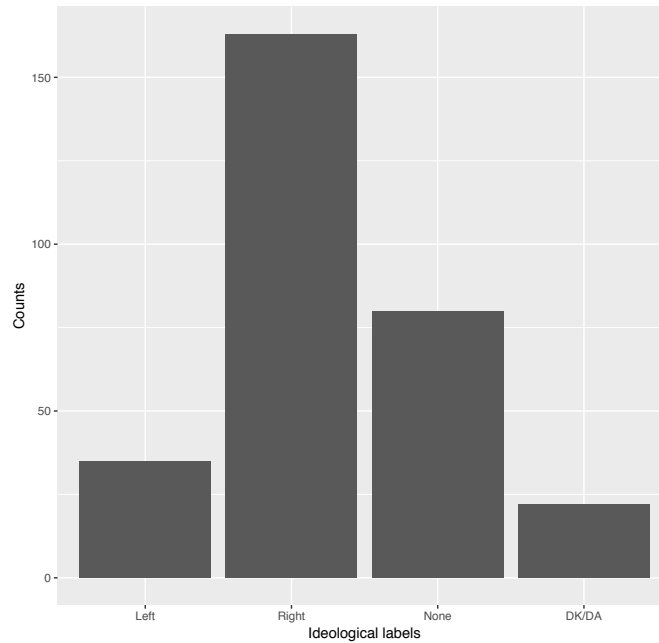

Figure A4. Iron-fist crime-reduction policies and politicians' ideological labels in Chile

The results show that a majority of survey respondents associated right-wing politicians with the use of strong-arm policies for combatting crime.

Appendix F: Robustness check

As a robustness check we change the cutoff to identify treated and control counties. In the main manuscript we use a standard deviation above the mean as the key criteria. In figures A5 and A6 we provide the results of the interaction (change in effect between left and right-wing incumbents) when using ten alternative cutoffs (1.05, 1.04, 1.03, 1.02, 1.01, 0.99, 0.98, 0.97, 0.96, and 0.95 standard deviations above the mean). Results are very consisent across the multiple thresholds for Mexico and Chile. The effect of crime is conditional on the ideology of the incumbent: in particular, right-wing incumbents are less likely to be punished by voters. In the case of Chile, all results are significant at a 0.05 level. In the case of Mexico, all results are significant at a 0.10 level and most of them at a 0.05 level.
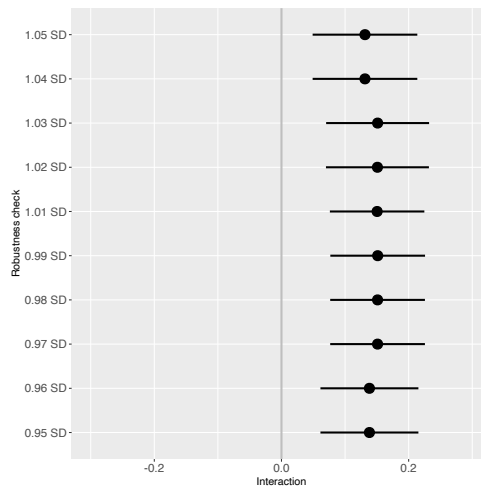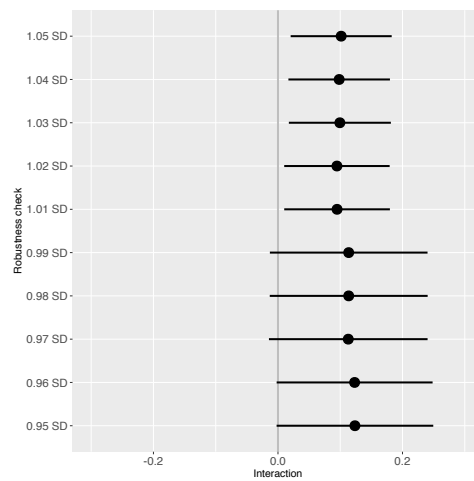

Figure A5: Robustness check Chile

Figure A6: Robustness check Mexico

Appendix G: Data

In the case of Chile, we use the following variables at the municipality level:

Total population: Total number of inhabitants according to the 2002 Census. We use a natural logarithm transformation.

Income index: Gross income per capita, as calculated by the United Nations Development Program in 2003.

Education index: Mean years of schooling and expected years of schooling, as calculated by the United Nations Development Program in 2003.

Crime rates: Total number of crimes divided by the total population 12 months before the 2005, 2009, and 2013 presidential elections. We focus on the criminological category of "crimes of greater social connotation," which corresponds to offenses including burglary, thefts, homicides, and rape. Data was obtained from the *Centro de Estudio y Análisis del Delito*, which sits under the Undersecretary of Crime Prevention.

Outcome: Change in the incumbent vote share. We calculated this variable using data from the *Servicio Electoral de Chile*.

In the case of Mexico, we use the following variables at the municipality level:

Total population: Total number of inhabitants according to the CONAPO (*Consejo Nacional de Población*). For the 2000 presidential election, we use data from 1995; for the 2006 election, data from 2000; and for the 2012 election, data from 2010.

Marginalization index: This indicator measures socioeconomic marginalization by creating an index using four dimensions: education, housing, rurality, and income. This index was calculated by the CONAPO. For the 2000 presidential election, we use data from 1995; for the 2006 election, data from 2000; and for the 2012 election, data from 2010.

Illiteracy: Percentage of the population older than 15 that is illiterate. This data was obtained by the CONAPO. For the 2000 presidential election, we use data from 1995; for the 2006 election, data from 2000; and for the 2012 election, data from 2010.

Crime rates: Total homicides divided by total population 12 months before the 2000, 2006, and 2012 presidential elections. Crime data was obtained from the *Instituto Nacional de Estadística y Geografía* (INEGI).

Outcome: Changes in the incumbent vote share. We calculated this variables using data from the *Instituto Federal Electoral* (IFE).

Appendix H: Results Chile and Mexico

Column 1 in tables A2 and A3 provides the results used to construct figure 4 in the main manuscript. Columns 2, 3, and 4 provide robustness checks by excluding covariates one by one. Results are consistent across all the specifications.

Table A2: Difference-in-differences Chile

	Change in the vote share for the incumbent			
	(1)	(2)	(3)	(4)
Crime shock	-0.069**	-0.069**	-0.069**	-0.069**
	(0.032)	(0.032)	(0.032)	(0.032)
Right-wing president	-0.173***	-0.173***	-0.173***	-0.173***
	(0.032)	(0.032)	(0.032)	(0.032)
Crime shock*Right-wing president	0.151***	0.151***	0.151***	0.151***
	(0.038)	(0.038)	(0.038)	(0.038)
Observations	932	932	932	932
Municipality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Placebo covariates	3	2	1	0
Note:				$^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table A3: Difference-in-differences Mexico

	Change in the vote share for the incumbent			
	(1)	(2)	(3)	(4)
Crime shock	-0.049	-0.048	-0.048	-0.048
	(0.035)	(0.035)	(0.034)	(0.034)
Right-wing president	0.007	0.013	0.017	0.018
	(0.025)	(0.022)	(0.015)	(0.014)
Crime shock*Right-wing president	0.096**	0.095**	0.096**	0.095**
	(0.043)	(0.043)	(0.042)	(0.042)
Observations	1243	1243	1243	1243
Municipality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Placebo covariates	3	2	1	0

Note: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Appendix I: LAPOP Data and Results

To provide further evidence for our theoretical arguments, we analyze the impact of crime victimization and perceptions of insecurity on voting for the incumbent in 18 Latin American countries using four waves of surveys from the Latin American Public Opinion Project data.

An important methodological challenge complicating the study of the political effects of crime when using survey data is reverse causality, which means that the outcome might also be affecting the treatment. For instance, voters who dislike the government might be more likely to report a crime or higher levels of insecurity to make the government look ineffective.

When using survey data, this concern can be partially addressed by subsetting the sample only to subjects who voted for the government in the previous elections. This decision allows ruling out by design individuals who might overreport crime because they never liked the government. Also, this helps to reduce the heterogeneity of the sample, which contributes to the primary goal of decreasing sensitivity to hidden biases (Rosenbaum 2004).

We use both crime victimization and perceptions of insecurity to test the main hypotheses. The outcome in the survey analysis is a dummy variable based on a LAPOP survey item (VB20) that asks respondents how they would vote if the next presidential elections were being held this week. Respondents are asked whether they would abstain, leave the ballot blank, vote for the incumbent party, or support a different party in this hypothetical election. Respondents do not have to mention candidates by name. We generate a binary indicator coded as 1 if respondents indicate an intention of voting for the incumbent and 0 otherwise. Before that, we subset the sample only to subjects who voted for the government in the previous elections (VB2).

We use a LAPOP survey item (VIC1EXT) that asks respondents the following question: "Have you been a victim of any type of crime in the past 12 months? That is, have you been a victim of robbery, burglary, assault, fraud, blackmail, extortion, violent threats, or any other type of crime in the past 12 months?"

We use the same strategy we employed in the local analysis to identify right-wing presidents. Presidents are categorized as right-wing when they have an ideology score greater than 15 in the 0–20 left-right scale in the Baker and Greene (2016) dataset.

We do not adjust for variables such as partisanship and ideology because they might be affected by exposure to crime. However, focusing on people who already voted for the incumbent allows us to control for political preferences.

One of the scope conditions of our theory is that we assume that a right-wing incumbent competes against centrist and/or left-wing parties. This is almost always the case in Latin American party systems, where conservative parties in power tend to be challenged by left-of-center political forces. If a right-wing party in government faces a viable right-wing contender, our theoretical framework might not apply. Using the Baker and Greene (2016) dataset, we identified five country-years where there is a right-wing incumbent and challenger at the same time (Colombia 2010 and 2014, Guatemala 2011 and 2015, and Paraguay 2008). We therefore excluded these cases from the survey analysis.

Regarding the estimation, we mimic equation 2, where Y is a binary indicator for voting for the incumbent. Since we subset the sample to subjects who voted for the incumbent in the previous election, the outcome captures loyalty to the incumbent (1: repeated vote for the government, 0: defection from the government), which is similar in nature to the outcome used in the local-level analysis data (i.e., the change in incumbent vote share). T is an indicator of crime

victimization or perceptions of insecurity, I is an indicator that captures whether there is a right-wing president at the time when the survey is conducted, X is a vector of placebo covariates (age, education, and gender),[6] σ_n represents municipality fixed effects, and ω_t year fixed effects (LAPOP 2008, 2010, 2012, and 2014). We cluster standard errors at the municipality level. The coefficient of interest is β_3, which captures the difference between right-wing and non-right-wing presidents (39,208 observations for crime victimization and 39,006 for perceptions of insecurity).

Column 1 in table A4 provides the main results. Columns 2, 3, and 4 provide robustness checks by excluding covariates one by one. Results are consistent across all the specifications.

Table A4: Difference-in-differences crime victimization LAPOP

	Voting (again) for the incumbent			
	(1)	(2)	(3)	(4)
Crime victimization	-0.039***	-0.037***	-0.041***	-0.040***
	(0.008)	(0.008)	(0.008)	(0.008)
Right-wing president	-0.025	-0.023	-0.024	-0.025
	(0.036)	(0.036)	(0.036)	(0.036)
Crime victimization*Right-wing president	0.036**	0.036**	0.036*	0.036*
	(0.018)	(0.018)	(0.018)	(0.018)
Observations	39208	39208	39208	39208
Municipality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Placebo covariates	3	2	1	0
Note:				*p<0.1; **p<0.05; ***p<0.01

In table A5 we replace crime victimization with perceptions of insecurity. We construct the independent variable using the following question from LAPOP: speaking of the neighborhood where you live and thinking of the possibility of being assaulted or robbed, do you feel very safe, somewhat safe, somewhat unsafe, or very unsafe? (1) Very safe (2) Somewhat safe (3) Somewhat unsafe (4) Very unsafe. The evidence shows that perceptions of insecurity do reduce the likelihood

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[6] Individuals' characteristics that are not very likely to be affected by the independent variables of interest. We borrow the term "placebo covariates" from the causal inference literature (see Calonico, Cattaneo, and Titiunik 2014; Cattaneo, Frandsen , and Titiunik 2015). In particular, it is always advisable to use pre-treatment covariates as a control to avoid adjusting for things that were affected by the treatment (Montgomery, Nyhan, and Torres 2018). Sometimes it is not possible to include covariates that were not captured before the treatment as controls. In this case, where we are using survey data, we do not have access to pre-treatment covariates since respondents' characteristics and outcomes are captured at the same time.

of voting for non-right-wing incumbents. However, the results show that there is a significant difference between non-right and right-wing incumbents. Specifically, the negative effect of perceptions of insecurity is smaller for the latter.

Table A5. Difference-in-differences perceptions of insecurity LAPOP

	Voting (again) for the incumbent			
	(1)	(2)	(3)	(4)
Perceptions of insecurity	-0.032***	-0.032***	-0.033***	-0.034***
	(0.004)	(0.004)	(0.004)	(0.004)
Right-wing president	-0.081**	-0.079**	-0.081**	-0.081**
	(0.040)	(0.040)	(0.040)	(0.040)
Perceptions of insecurity *Right-wing president	0.031***	0.031***	0.030***	0.031***
	(0.009)	(0.009)	(0.009)	(0.009)
Observations	39006	39006	39006	39006
Municipality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Placebo covariates	3	2	1	0
Note:				*p<0.1; **p<0.05; ***p<0.01

Figure A7 shows the impact of crime victimization and perceptions of insecurity on non-right and right-wing presidents, and the difference between these two effects. The plots provide the point estimates and 95% confidence intervals.
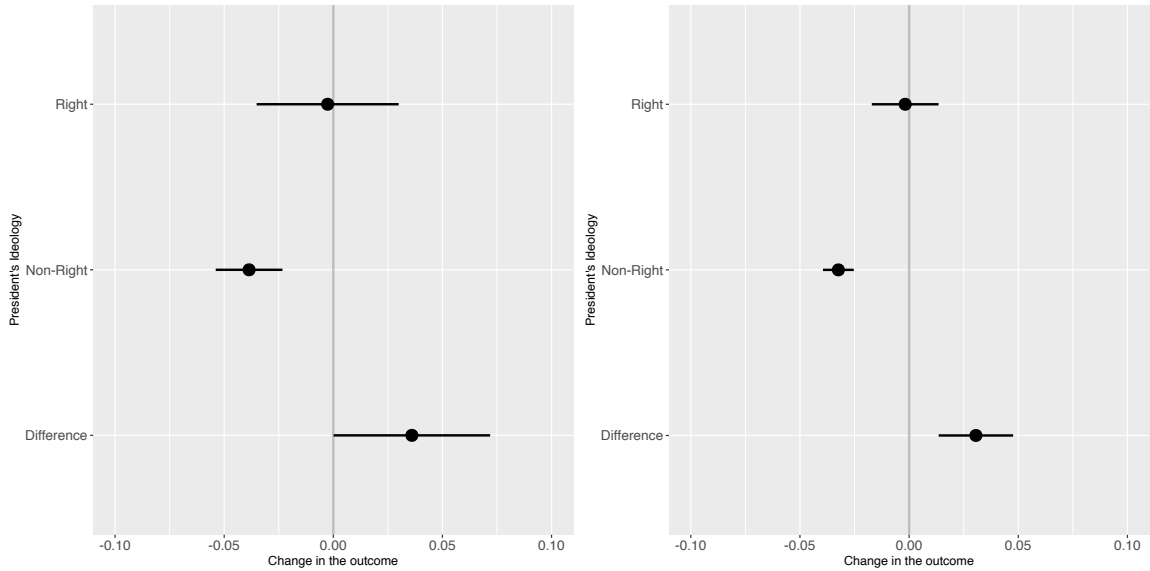
Crime Victimization   **Perceptions of Insecurity**

Figure A7: Heterogeneous effects of crime victimization using survey data

The results presented in Tables A4-A5 and Figure A7 show that crime victims do not evaluate right and non-right-wing incumbents equally. Exposure to crime or an increase in one-point in the perception of insecurity scale only reduces the chances of voting for non-right-wing incumbents (for people that already voted for the incumbent in the previous election). The difference between right and non-right-wing incumbents is 4 percentage points (CI: [0.012 - 0.071]) for crime victimization and 3 percentage points for perceptions of insecurity (CI: [0.013 - 0.047]).

As opposed to the local data from Chile and Mexico, voters do not seem to reward right-wing incumbents after an increase in crime or in crime perceptions when analyzing all the countries in Latin America. However, our theory does not generate expectations about voters rewarding or not rewarding right-wing incumbents, which might vary case by case. We hypothesize about the differential effect of crime shocks between right and non-right-wing incumbents, and these results provide robust evidence for our theoretical expectations.

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Appendix J: Six Months

In this section, we use six months as the reference to construct the crime shock (rather than three months) and compare it with crime rates between six and twelve months before the election. There are reasons to believe that a crime shock closer to the election date (e.g., three rather than six months) should be more salient in voters' minds when they choose their vote (Achen and Bartels 2016). Therefore, we expect to observe results that go in the same direction as this study's main conclusions but with smaller estimates. The findings confirm this expectation, the results follow the same direction as the ones reported in the manuscript, but the effect size is smaller.

Table A6. Six months Chile

	Change in the vote share for the incumbent			
	(1)	(2)	(3)	(4)
Crime shock (six months)	-0.032	-0.032	-0.032	-0.032
	(0.025)	(0.025)	(0.025)	(0.025)
Right-wing president	-0.229***	-0.229***	-0.229***	-0.229***
	(0.024)	(0.024)	(0.024)	(0.024)
Crime shock (six months)*Right-wing president	0.062**	0.062**	0.062**	0.062**
	(0.037)	(0.037)	(0.037)	(0.037)
Observations	1091	1091	1091	1091
Municipality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Placebo covariates	3	2	1	0

Note: $^{*}p<0.1; ^{**}p<0.05; ^{***}p<0.01$

Table A7. Six months Mexico

	Change in the vote share for the incumbent			
	(1)	(2)	(3)	(4)
Crime shock (six months)	-0.027	-0.027	-0.026	-0.026
	(0.022)	(0.022)	(0.022)	(0.022)
Right-wing president	0.037***	0.038***	0.033***	0.033***
	(0.016)	(0.015)	(0.009)	(0.009)
Crime shock (six months)*Right-wing president	0.027	0.027	0.026	0.025
	(0.025)	(0.025)	(0.025)	(0.025)
Observations	2378	2378	2378	2378
Municipality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Placebo covariates	3	2	1	0

Note: $^{*}p<0.1; ^{**}p<0.05; ^{***}p<0.01$

Appendix K: Standard Approach

In this section, as a robustness check, we use a more standard approach where we do not exclude any municipalities and find similar results. In this analysis, we compute how crime changes from one quarter to the other in percentage points. Then, instead of transforming this variable into a binary indicator, we use this continuous measure. Therefore, now we are including some partially exposed municipalities, and then we expect to observe similar but not as clear results such as in the main analysis. The results confirm this expectation, where the effect of crime spikes is attenuated when there is a right-wing incumbent.

Table A8. Standard Approach Chile

	Change in the vote share for the incumbent			
	(1)	(2)	(3)	(4)
Crime changes	-0.009	-0.009	-0.009	-0.009
	(0.020)	(0.020)	(0.020)	(0.020)
Right-wing president	-0.199***	-0.199***	-0.199***	-0.199***
	(0.004)	(0.004)	(0.004)	(0.004)
Crime changes *Right-wing president	0.035	0.035	0.035	0.035
	(0.027)	(0.027)	(0.027)	(0.027)
Observations	1347	1347	1347	1347
Municipality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Placebo covariates	3	2	1	0
Note:			*p<0.1; **p<0.05; ***p<0.01	

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Table A9. Standard Approach Mexico

	Change in the vote share for the incumbent			
	(1)	(2)	(3)	(4)
Crime changes	-0.022**	-0.022**	-0.022**	-0.022**
	(0.012)	(0.012)	(0.012)	(0.012)
Right-wing president	0.024	0.026	0.021	0.021
	(0.013)	(0.012)	(0.008)	(0.008)
Crime changes *Right-wing president	0.045***	0.044***	0.044***	0.043***
	(0.015)	(0.015)	(0.015)	(0.015)
Observations	2933	2933	2933	2933
Municipality fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Placebo covariates	3	2	1	0

Note: $^*p<0.1; ^{**}p<0.05; ^{***}p<0.01$

References

Achen, Christopher H., and Larry M. Bartels. 2016. *Democracy for Realists: Why Elections Do Not Produce Responsive Government*. Princeton: Princeton University Press.

Arnold, Christian, David Doyle, and Nina Wiesehomeier. 2017. "Presidents, Policy Compromise, and Legislative Success." *Journal of Politics* 79 (2):380-395.

Baker, Andy, and Kenneth F. Greene. 2016. Latin American Election Results with Party Ideology Scores. 2.0.

Calonico, Sebastian, Matias D. Cattaneo, and Rocio Titiunik. 2014. "Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs." *Econometrica* 82 (6):2295-2326.

Cattaneo, Matias D., Brigham R. Frandsen , and Rocío Titiunik. 2015. "Randomization Inference in the Regression Discontinuity Design: An Application to Party Advantages in the U.S. Senate." *Journal of Causal Inference* 3 (1):1-24.

Montgomery, Jacob M., Brendan Nyhan, and Michelle Torres. 2018. "How Conditioning on Posttreatment Variables Can Ruin Your Experiment and What to Do about It." *American Journal of Political Science* 62 (3):760-775.

Rosenbaum, Paul R. 2004. "Design sensitivity in observational studies." *Biometrika* 91 (1):153-164.

Visconti, Giancarlo. 2021. "Re-evaluating the Role of Ideology in Chile." *Latin American Politics & Society* 63 (2):1-25.