

Is Banning Corporate Contributions Enough? The Dynamics of Incomplete Campaign Finance Reform

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Abstract

This paper studies whether banning corporate contributions suffices to curb firms' efforts to influence politics. We examine Brazil's 2015 campaign finance reform, which banned companies from making political contributions but did not ban political contributions made by individuals. Following the reform, overall contributions decreased significantly. However, this does not mean that influence in politics disappeared. Firms with high prereform contributions responded by increasing individual donations at both the intensive and extensive margins. More critically, individual contributions became more valuable after the reform: postban individual contributions to winning candidates increased firms' valuation substantially, thereby replicating what only corporate donations achieved preban and partially offsetting the reform's intent. Despite this, the reform reduced total contributions, increased shareholder protection by reducing excessive contributions, and leveled political participation among firms. Moreover, the reform increased market valuations for contributing firms. Overall, incomplete campaign finance reform does deliver notable successes but has critical loopholes.

All contributions by corporations . . . for any political purpose should be forbidden by law; directors should not be permitted to use stockholders' money for such purposes; and, moreover, a prohibition of this kind would be . . . an effective method of stopping the evils aimed at in corrupt practices acts. (Theodore Roosevelt, President's Annual Message, 1905, 40 Cong. Rec. 96 [1906])

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A ban on direct corporate contributions leaves individual members of corporations free to make their own contributions, and deprives the public of little or no material information. (*Federal Election Commission v. Beaumont*, 539 U.S. 146, 161 [2003])

1. Introduction

For more than a century, concerns over the undue influence of money in politics have been voiced by politicians, government officials, and the public. In the United States, for example, these concerns first led to a ban on political contributions by corporations through the 1907 Tillman Act (Pub. L. No. 59-36, 34 Stat. 864b). Campaign finance reform, however, was incomplete: corporate contributions were banned, but the opportunity to exert influence persisted because contributions by individuals and many noncorporate institutions were allowed. In no small part because of this absence of limits on contributions by individuals, political parties, and political action committees (PACs), more public debate on the issue eventually forced Congress to enact major campaign finance legislation in 1972 and 1974 and then again in 2002.¹ Despite the century-long political debate surrounding the proper implementation of campaign finance regulation, the discussion is missing an empirical analysis of the dynamics inherent in incomplete campaign finance regulation and the consequences arising thereof. Analysis of this kind is crucial for the design of efficient campaign finance reform devoid of costly backdoor channels of influence.

This paper attempts to provide such analysis. We study the experience in Brazil, where in 2015 the Supreme Court banned corporate contributions for political purposes. Since the ban in Brazil applied only to corporations, it provides an ideal test case to evaluate the effects of contributions stemming from corporate influence vis-à-vis those stemming from the lack of binding limits on campaign contributions. This allows us to trace the dynamics arising from incompletely reforming campaign finance laws.

To shed light on the dynamics of incomplete reform, we construct a novel data set that links three core pieces of the system. The data include the size and recipient of all individual and corporate campaign donations in three national and subnational elections; institutional, financial, and compensation details for all registered companies, including the identities of their corresponding owners, board members, and management; and stock market data for those companies publicly listed.

We divide our analysis into two parts. In the first, we evaluate the direct effects of the ban on the reallocation of contributions from corporate donors to individuals. We show that there is substantial heterogeneity in the cross section of individual donations affiliated with firms and that they closely follow corporate contributions. This cross section of individual donations is important if it helps

¹ In 1974, following revelations of campaign finance abuse during the Watergate investigation, Congress set contribution limits by amending the Federal Election Campaign Act of 1971 (Pub. L. No. 93-443, 88 Stat. 1263).

preserve the political connections of firms absent corporate contributions. We then show that as a result of the ban on corporate contributions, an individual's likelihood of making a contribution increased when he or she is affiliated with a firm that made large corporate contributions before the ban. In addition, donors increased their contributions at the intensive margin in proportion to preban corporate contribution levels.² This increase in individual contributions accounts for a sizable 10.2 percent of the total corporate contributions made just prior to the reform, which points to the successes and limitations of banning corporate contributions.

Importantly, the rate of substitution between corporate contributions and individual contributions does not account for changes in political influence, as the political value of individual contributions can presumably increase absent corporate contributions. In the second part of the paper, we evaluate whether there is a realignment in the market response to individual contributions vis-à-vis corporate contributions—which would happen if the market expects individual contributions to exert stronger influence after corporate contributions are banned. To make this evaluation, we analyze the stock market response to corporate and individual donations around Brazil's general elections before and after the Supreme Court's ban on corporate contributions in 2015. During the 2014 general elections, we find that stock prices significantly increased in proportion to corporate donations made to winning candidates, while a firm's value was unaffected by individual donations made to the winning candidate or to donations, regardless of kind, made to losing candidates. After the 2018 ban, we find that individual donations made to winning candidates generate the same returns for firms that corporate donations to winning candidates used to generate prior to the reform (around 180 basis points for each percentage-point increase in normalized contributions), which suggests a realignment in the value of individual donations to the firm. From these estimates and the value of unspent contributions, we then estimate that the ban had a positive effect on the value of firms.

We make three main contributions to the literature. First, we provide, to the best of our knowledge, the initial empirical study of the effect on firms of a ban on corporate contributions. Most of the literature on banning corporate contributions focuses on its effect on politicians. For example, Avis et al. (forthcoming) find that following reforms in Brazil, the pool of candidates running for elective office increased and was on average less wealthy. On firms, Coates (2012) and Albuquerque et al. (2020) study the opposite direction, documenting the new political activity after *Citizens United*. Effective campaign finance legislation also needs to properly account for what happens to the firm and how it responds after corporate contributions are banned. We provide evidence to address these questions.

Second, we provide evidence of the dynamics that arise through incomplete campaign finance reform. The erosion of campaign finance legislation in the

² This effect is stronger for managers and board members who own stock in the firm and who, after the reform, might have the strongest incentives to make individual contributions to offset the lack of corporate contributions.

United States, for example, has been gradual. Because of how courts operate, if there is a shift toward limiting campaign contributions, it is also gradual and, hence, incomplete. Similarly, history suggests that completing campaign finance reform through legislation may take decades. The dynamics that arise from such incomplete reform are fundamental to our understanding of how campaign finance reform can achieve its intended goals. Unfortunately, these mechanisms are still not fully understood. In the United States, Hansen, Rocca, and Ortiz (2015) show that individuals, not corporations, played the key role in increased political spending following *Citizens United* and that employees of large corporations did not drive this increase (Hansen and Rocca 2019). However, Babenko, Fedaseyev, and Zhang (2020) provide evidence that the political preferences of chief executive officers (CEOs) affect employees' campaign contributions. Tenekedjieva (2019) and Bertrand et al. (2020) provide evidence of the use of corporate philanthropy to substitute for political donations or otherwise obtain influence, which suggests that corporations are able to influence the political process by more channels than traditionally measured. Bertrand et al. (2020) in particular note this need to identify and measure omitted channels of influence, as the amount of money in politics when measured by PAC and lobbying expenditures in the United States appears to be remarkably small (Tullock 1972). We contribute to this literature by documenting the potential limitations that campaign finance reform might face because of the connection between corporate and individuals' political contributions.

Third, by measuring how the connection between firms and politics evolves once the initial relationship is severed, we contribute to a growing literature that studies the connection between politics and firms. For example, Goldman, Rocholl, and So (2009) study the impact of board members politically connected to party nominations; Borisov, Goldman, and Gupta (2016) analyze the impact of limitations in lobbying; Fisman (2001) evaluates the value to firms of being connected to a president (Indonesia's); Acemoglu et al. (2016) evaluate the value of firms' ties to a member of a government cabinet; and Jayachandran (2006) evaluates connections to the US Senate (see also Khwaja and Mian 2005; Faccio, Ma-sulis, and McConnell 2006; Faccio 2006; Ferguson and Voth 2008; Butler, Fau-ver, and Mortal 2009; Fisman et al. 2012; Amore and Bennedsen 2013; Carvalho and Guimaraes 2018). The closest work to ours is Claessens, Feijen, and Laeven (2008), in which the authors explore the role of campaign contributions in Brazil. We closely follow their approach in the second part of this study. However, since their paper was published before the reform, it cannot provide an analysis of campaign finance reform, the main objective of this study.

Finally, it is also important to state what this paper does not intend to do. Although our work generally contributes to a literature that studies effects or returns to campaign spending,³ it is not within the scope of this paper to assess whether corporate benefits stemming from campaign contributions are norma-

³For other works on campaign spending, see, for example, Gerber (1998, 2004), Scarrow (2007), and Da Silveira and De Mello (2011). For reviews of electoral and campaign finance legislation, see also Scarrow (2007) and Gardner and Charles (2018). For theoretical works, see Austen-Smith (1987) and Ashworth (2006).

tively meaningful. While that discussion is no doubt important, it requires an independent legal and empirical treatment.⁴ Here we focus exclusively on the alternative questions of whether and how bans on corporate contributions work.

2. Campaign Finance Law in Brazil

Before 2015, campaign expenditures in Brazil were unrestricted, and there was no ceiling to campaign contributions. Restrictions on contributions had a relative but not absolute ceiling: individuals and corporations could donate 10 percent and 2 percent of their yearly gross income, respectively. If the goal of campaign finance regulation is to level the playing field, this proportionality requirement does little to ameliorate the disparities in the ability to gain influence through contributions.⁵

After 2015, Brazil passed a campaign finance reform consisting of two main components: a ban on contributions from all corporations and restrictions on the candidates' spending limits. The ban on corporate donations was made by Brazil's Supreme Court in 2015 (Law No. 13.165, September 29, 2015). In 2017, the Brazilian Congress codified campaign spending limits and creating a public fund to finance elections (Law No. 13.488, October 6, 2017). Before 2017, campaign spending limits were determined by Brazil's electoral commission, the Tribunal Superior Eleitoral (TSE). Following Law No. 13.488, campaign spending limits for presidential elections were set at BRL\$70 million for the first round and an extra BRL\$35 million if there was a runoff round.⁶ Limits for governors and senators were set in proportion to the size of the electorate they represented.

These statutory limits were below those typically prescribed by the TSE but above the size of individual donations before and after the reform. For example, in 2014 Dilma Rouseff had a prescribed limit of BRL\$298 million for both rounds, more than twice the statutory limit after 2017, but 98 percent of her campaign contributions came from corporate donors. In Section OA5 of the Online Appendix, we show that statutory campaign spending limits were high relative to individual contributions and moreover that markets did not have a reaction to Law No. 13.488 as would have been expected if the limits meaningfully affected

⁴ In addition to the many studies previously cited, we refer the interested reader to three recent papers on the topic. In the United States, Fowler, Garro, and Spenkuch (2020) find statistically insignificant effects of no more than 40 basis points on average, while Akey (2015) finds statistically significant increases of around 3 percent. In Brazil, Boas, Hidalgo, and Richardson (2014) find that donations to a winning candidate lead to a boost in government contracts for public work firms. For Brazil, our event-study results are closer in magnitude to those of Fowler, Garro, and Spenkuch (2020), but our estimates are statistically precise and exhibit significant variation across firm size, with large firms benefiting substantially more than the average firm. Results of our regression discontinuity design (Section OA6 of the Online Appendix) are closer in magnitude to the estimates reported by Akey (2015).

⁵ A more pressing problem with donations in Brazil is *caixa dois* (roughly translated as slush money), whereby individuals and corporations make secret donations with the intent of hiding their origin. Despite frequent debate in the Brazilian press, using a *caixa dois* is a criminal offense and carries a punishment of 5 years in prison (Código Eleitoral, art. 350, Law No. 4.737, July 15, 1965).

⁶ Runoff rounds are the norm for presidential elections in Brazil.

contributions in the near future.⁷ For this reason, this paper gives special attention to the role of the ban on corporate political contributions.

As in the United States, foreign individuals or entities and state-owned companies cannot contribute to elections. These restrictions were not modified in Brazil's reform and have remained in effect since the electoral law was passed (Law No. 9.504, September 30, 1997).

3. Data

3.1. Data Construction

Our data come from three main sources. The first is the Comissão de Valores Mobiliários (CVM)—the Securities and Exchange Commission of Brazil—which is Brazil's main securities market authority. We collect the CVM data at the year-company level. Companies registered with the CVM must report data on ownership, management, board members, compensation, and key financial metrics.

On average a company with over BRL\$1 million in assets has about nine owners and 14 board and management members. It is worth noting that the same individual can simultaneously be an owner, board member, and manager. We also collect data on board and management members' compensation. In addition, we collect company-level attributes, including those that allow us, among other things, to add fixed effects for the company's industry and for the state where the company is based.

The second data set contains all individual and corporate campaign donations in Brazil from the TSE.⁸ Each time an individual or a company makes a campaign donation (which can be made to a presidential candidate, to local government officials, to the National Congress, or to a committee), the donation amount, the identifier of the donor, and the political party of the beneficiary must be disclosed to the TSE. The data cover donation records for the 2010, 2014, and 2018 general elections. We complement the donations data with election results for first-round elections and any runoff elections.

The third data set comes from Brazil's stock exchange, B3, previously known as Bovespa. We use daily stock prices at the close of a trading day for all publicly listed companies in Brazil. Additional details about the data are provided in Section OA1 of the Online Appendix.

3.2. Summary Statistics

Table 1 provides summary statistics. The CVM data set contains filings for companies and individuals affiliated with them, including owners, board members, and managers. An average firm's assets and revenues are BRL\$45.2 billion and BRL\$2.8 billion, respectively. Figure OA1 in the Online Appendix shows the distribution of assets across firms. The TSE data contain donation records from

⁷ Part of the motivation of Law No. 13.488 was to limit the potential growth of campaign spending. Campaign spending limits increased 382 percent from 1994 to 2014.

⁸ Avis et al. (forthcoming) use data from the Tribunal Superior Eleitoral to study changes in the pool of candidates running for mayor, campaign spending, and donations.

Table 1
Summary Statistics

	CVM Filings	TSE Donation Records	CVM and TSE Donors	CVM and TSE Companies in B3
Companies	734	10,596	429	187
Individuals:	10,554	279,119	8,443	5,149
Owners	2,838		2,193	1,028
Board members	4,522		3,402	2,055
Managers	5,357		4,341	2,841
Mean assets	45,243		55,979	83,654
Median assets	2,554		3,408	7,284
Mean revenues	2,758		3,340	4,820
Median revenues	360		461	983
Mean corporate donation		219,545	4,985,851	7,112,778
Median corporate donation		10,300	300,000	520,000
Mean individual donation		5,931	181,391	217,876
Median individual donation		1,000	10,000	19,000
Corporate donations			.054	.069
Individual donations			.037	.053

Note. Data are from the Comissão de Valores Mobiliários (CVM) and the Tribunal Superior Eleitoral (TSE). Assets and revenues are in millions of Brazilian dollars. Donations are in millions of Brazilian dollars as a percentage of assets without rounding.

279,119 individuals and 22,522 organizations (for example, PACs, firms, cooperatives), of which 10,596 are for-profit companies.

Merging the CVM and TSE data results in records from 429 companies and 8,443 individuals. We note two important differences. First, donor companies have more assets and revenue. For instance, median assets for the CVM are valued at BRL\$2.6 billion, and they are BRL\$3.4 million for donor companies. Second, the size of donations is substantially larger among CVM registered companies. With regard to the assets of the company, corporate donations and the aggregated sum of affiliated individual donations represent on average about .054 percent and .037 percent, respectively. These estimates are computed for companies with at least BRL\$1 million in assets, winsorizing the ratio at 1 percent in both tails and without conditioning on a positive donation.

A total of 187 companies in the CVM data are linked with the stock exchange, and 5,149 individuals are affiliated with these companies. These companies are somewhat larger than the CVM donors. For instance, the median assets are BRL\$3.4 billion for the CVM donors and BRL\$7.3 billion for the publicly listed companies. Notably, donations are also larger.

Given the differences between the CVM or B3-listed companies and the universe of firms in Brazil, we offer a caveat to extending our results more generally. While further research should examine the behavior of small and start-up businesses, the reform was passed to address the donation patterns of the largest firms. Furthermore, the firms we analyze represent a vast portion of the shareholders' value in the country. We estimate that the equity value, as per registry re-

Table 2
Aggregate Donations

	2014			2018		
	All	Above-Median Assets	Below-Median Assets	All	Above-Median Assets	Below-Median Assets
Corporate	447.0	11.1	421.5			
Individual	45.8	9.41	32.21	58.8	11.29	45.44

Note. Assets and revenues are in millions of Brazilian dollars. Donations are in millions of Brazilian dollars without rounding.

ports, is BRL\$170 billion for the donor companies outside the scope of our study. In contrast, the equity value is BRL\$1,608 billion and BRL\$1,290 billion for the companies in the CVM and B3, respectively.

Table 2 shows summary statistics for aggregate donations. Total donations decreased significantly from one general election to the next, but individual donations increased 28 percent. The sum of donations made by individuals affiliated with small firms remained steady between elections, but donations made by individuals affiliated with large companies increased by 41 percent.

4. From Corporate to Individual Donations

Following the changes in Brazilian campaign finance laws, total contributions declined by 88.1 percent. The decline is exclusively driven by the disappearance of corporate contributions propelled by the ban. However, individual contributions increased. Importantly, the increase showcases that campaign spending limits were not binding once corporate contributions had been banned. Consequently, there was still room for individuals to offset the disappearance of corporate contributions. Individual contributions after the reform account for 13.2 percent of the prereform corporate contributions.

A natural question to ask is whether individuals affiliated with a firm that used to donate meaningfully before the reform experienced an increase in both their propensity to donate and the size of their contributions. This would be consistent with evidence showing that political activity of CEOs might affect the donations made by employees (Babenko, Fedaseyev, and Zhang 2020). We explore that question in this section.⁹

We would like to evaluate whether individuals affiliated with a corporation with high levels of prereform donations exhibit two changes after the reform: an increase in their likelihood of donating and an increase in their contribution

⁹ It is important to note that even if the level of individual donations remains unchanged, it does not follow that a reduction in corporate contributions implies a decline in corporate influence. If total contributions decline (and donations become more scarce), the value of the remaining contributions (made by individuals) will be greater for the recipient, and thus a reduction in contributions might still lead to no difference in influence; that is, the effect of the ban might be influence neutral. This means that the level of individual contributions is as important for understanding influence as its change is. For that reason, in Section OA2 of the Online Appendix we document the cross-sectional relationship between individual donations and prereform corporate donations.

amounts. To do so, we estimate the following generalized difference-in-differences specification:

$$Y_{ict} = \beta_0 + \beta_1 \log \text{Corporate Contributions}_{c,\text{Pre}} \times \text{Post}_t + \mu_c + \eta_t + \gamma \mathbf{X}_{ict} + \varepsilon_{ict}, \quad (1)$$

where Y_{ict} is either the total (log) contributions for individual i affiliated with firm c at time t or an indicator for whether individual i affiliated with firm c made a contribution at time t , $\text{Corporate Contributions}_{c,\text{Pre}}$ is the total prereform contributions of the company with which the individual is affiliated, and Post_t is an indicator equal to one if the reform has taken place and zero otherwise. The term \mathbf{X}_{ict} is a vector of controls that can include size and other firm characteristics or past donor status; μ_c is the set of company-level fixed effects; and η_t is the set of year-level fixed effects. Estimates are clustered at the firm level. Coefficients for the lower-order terms $\log \text{Corporate Contributions}_{c,\text{Pre}}$ and Post_t are absorbed by fixed effects and are thus omitted unless stated otherwise.

Table 3 shows estimates from equation (1). We first evaluate whether individuals are more likely to become donors after the reform by virtue of being affiliated with a company with high prereform contributions. The results for donor status show that, following the reform, individuals are between 20 and 46 basis points more likely to become donors for each log point in the size of corporate donations made by their affiliated companies. These estimates are robust to controlling for size or revenue (column 2), assessing differences in treatment by size (column 3), and controlling flexibly by B3-listed status, which provides evidence that size does not play a role in these findings. In addition, the estimates include firm fixed effects to absorb fixed unobservable traits of a firm. The estimates are also similar if we weight by company assets (Table OA7) or inversely weight by company assets (Table OA8).

We also evaluate whether individuals increase their contributions following the reform in proportion to their companies' prereform contributions. Table 3 shows that individual donations increased by between .025 and .052 log points for each log point in the size of corporate donations. Again, these effects are robust to different measures, including firm-level controls, using firm-level fixed effects, accounting for differences in treatment by size, and flexibly accounting for B3 listing. In Table OA4, we show that results are stronger for owners and board members.

These estimates are of similar magnitude to the cross-sectional estimates in Section OA2, which suggests that the large differences in the number of individual donors between high-contributing and low-contributing firms follow the reform. Despite this, as we discuss below, firms that did not donate heavily prior to the reform can comparatively benefit because the increase in individual donations is not enough to offset the removal of corporate contributions.

Importantly, these magnitudes are a lower bound on the potential ability of firms to siphon contributions through affiliated individuals. This is because campaign spending limits put in place in 2017 might have reduced the need for funding. In other words, absent campaign spending limits, the siphoning of contributions due to incomplete campaign finance reform might be greater. Nevertheless,

Table 3
Effects of the Ban on Individual Contributions and Donor Status

	Donor Status					Donations				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Post × Corporate Donations 2014	.362** (.075)	.425** (.079)	.442** (.074)	.463** (.171)	.197** (.074)	.043** (.008)	.049** (.009)	.052** (.008)	.046** (.017)	.025** (.008)
Post × Corporate Donations 2014 × Size			-.018 (.022)					-.002 (.002)		
Post × Corporate Donations 2014 × B3 Listed				-.012 (.167)					.003 (.018)	
Size		-.118 (.408)	-.106 (.414)	-.124 (.413)	-.270 (.471)		-.025 (.042)	-.023 (.043)	-.025 (.041)	-.039 (.048)
Revenue		-.345 (.435)	-.350 (.456)	-.344 (.438)	-.005 (.440)		-.022 (.043)	-.023 (.043)	-.022 (.042)	.009 (.045)
Individual Donors 2014					74,610** (1,942)					6,889** (.177)
Individual Donations 2014					-.488* (.257)					.028 (.029)
N	18,464	15,137	15,137	15,137	15,137	18,464	15,137	15,137	15,137	15,137
R ²	.1062	.1057	.1058	.1057	.4077	.1054	.1078	.1078	.1078	.4038

Note. Results are estimates from equation (1). Individual contributions are in logarithms, and donor status is in percentages. Single-order terms for B3-listed status and Corporate Donations 2014 are absorbed by firm fixed effects. All regressions include firm and year fixed effects. Standard errors clustered at the firm level are in parentheses.

+ Significant at the 10% level.

** Significant at the 1% level.

we show in Section 5.3 that there is no mismatch between the expectations of investors in 2015 and the value generated through individual donations in 2018. This suggests that, for purposes of analyzing the behavior of individual donors and firms' value, these campaign spending limits are largely secondary to the ban on corporate donations. We also provide evidence in Section OA5 that campaign spending limits were largely not binding for presidential, gubernatorial, and Federal Senate elections.

Potential endogeneity concerns arise if changes in individual contributions reflect differential trends as a function of prereform corporate contributions. To alleviate those concerns, we present estimates from an event-study specification of equation (1) for the electoral years 2010, 2014, and 2018, using both contributions and donor status as dependent variables. Results are shown in Figure 1. While these strategies may not fully assuage all possible endogeneity concerns, there are no discernible trends prior to the reform's passage for either dependent variable. The evidence presented here consistently indicates a strong pattern of substitution of corporate donations with individual donations.

5. Realignment of Value from Corporate to Individual Contributions

In this section, we provide evidence that the value of campaign contributions to a firm shifted from corporate to individual contributions following the reform. This analysis is important to determine whether, by using individual contributions, a firm can offset potential losses arising from the ban. To undertake this analysis, we rely mostly on event-study methodology as is standard in the finance literature (MacKinlay 1997). For our purposes, an advantage of using this methodology is that it aggregates investors' decisions. We proceed in three steps: identify the value of individual and corporate contributions in 2014, reevaluate the effect of postreform individual contributions, and assess the effects of the ban on corporate contributions on firms' value.

We use cumulative abnormal returns (CARs) as our dependent variable. In particular, we follow the approach of MacKinlay (1997) to construct CARs and to avoid the simultaneity problem inherent in estimating the expected value of a firm's stock price from data that include its realized value. To do this, we divide our sample into an estimation window (data used to predict the expected price of the stock) and an event window (data used to estimate the effect of the event on the price of the stock). Consistent with the literature (including MacKinlay 1997; Claessens, Feijen, and Laeven 2008), the event window is 41 business days (20 days prior to the event and 20 days after it),¹⁰ and the estimation window is

¹⁰ The size of the event window depends on context. Too small a window will underestimate effects that accrue slowly. For example, Lee and Mas (2012), when evaluating the impact of unions on firms, use a window of months rather than days. Conversely, too large a window may contaminate the estimates with other events. Here, we follow Claessens, Feijen, and Laeven (2008), which focuses on Brazil.

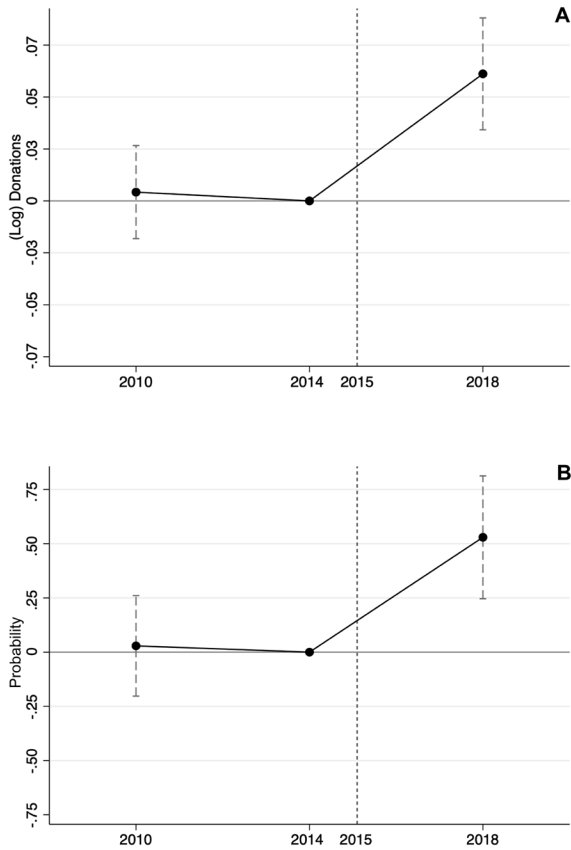


Figure 1. Event-study estimates of the behavior of individual donations. A, Individual contributions; B, donor status.

120 business days immediately preceding the event window.¹¹ The stock market data are from Brazil’s stock exchange B3 and exclude foreign firms (for example, Apple). Following Claessens, Feijen, and Laeven (2008), to calculate abnormal returns, we estimate a simple capital asset pricing model, imputing the market return from Bovespa.

The general specification of the model is

$$CAR_{it} = \beta_0 + \beta_1 Contributions_{i,t} + \gamma X_{i,t-1} + \varepsilon_{it}, \tag{2}$$

where t is the electoral or reform year; CAR_{it} refers to the CARs for firm i around the event window; $Contributions_{i,t}$ refers to contributions made by the firm as a percentage of its assets (normalized contributions) or by individuals affiliated

¹¹ The estimation window needs to be large. For sufficiently large estimation windows, results are not sensitive to estimation window length. See Armitage (1995) and MacKinlay (1997).

with the firm to winning candidates, losing candidates, or both during the current election year (or the most recent election year for the reform year). The term $X_{i,t-1}$ is a vector of firm-level controls, and ε_{it} is the error term.

Donations in Brazil are made to candidates at the presidential level (one position), gubernatorial level (27 positions), senators (three senators per federal unit),¹² and deputies (513 positions), who serve a function similar to representatives in the United States. In our analysis, we focus on the election results for presidential, gubernatorial, and Senate candidates, and we exclude deputy and mayoral elections because their campaign spending prior to the reform exceeded the limits later codified by legislation in 2017 (Law No. 13.488; see Section OA5). This would not allow us to distinguish whether the effects are due to the change in spending limits or the ban on corporate contributions. Moreover, campaign spending for presidential, gubernatorial, and Senate candidates never reached the limits, either before or after the reform.

5.1. Do Contributions Create Value for the Firm?

Figure 2 shows that around the timing of the electoral win of Dilma Rousseff in 2014, stock prices for firms that contributed to winning candidates increased sharply. More specifically, in Table 4, we estimate that the benefit of donating to a winning candidate is between 174 and 186 basis points for each percentage-point increase in normalized corporate contributions. In contrast, for individual contributions in 2014, that effect is almost nonexistent, with a statistically insignificant effect of between -11 and 2 basis points for each percentage-point increase in normalized contributions.

Figure 3 shows that in 2010, as in 2014, individual contributions had little effect on firm value. Only after the reform do individual contributions start having a sizable effect on the value of the firm. One interpretation is that the total amount of contributions rather than their source (that is, individual versus corporate donors) is what matters for influence; hence, the different results for corporate and individual contributions is driven by differences in their incidence. If that is the case, repeating our analysis using total contributions prior to the reform—that is, using corporate and individual contributions in 2014—should yield similar estimates to the ones we obtain using only corporate contributions. Table 4 shows that this is not the case. Instead, adding individual contributions to corporate contributions dampens their impact on CARs, which is what would happen if nonvaluable contributions were included in the estimation.¹³ These results imply that the source of contributions matters.

These results indicate not only that corporate contributions to winning candidates provide a quantifiable benefit to a firm but also that, prior to the ban, the

¹² While there are three senators per federal unit, elections are staggered. In any given campaign, only a seat or two is contested.

¹³ This is because the per-dollar contribution is lower and because adding irrelevant contributions is akin to inducing measurement error, which biases estimates toward 0.

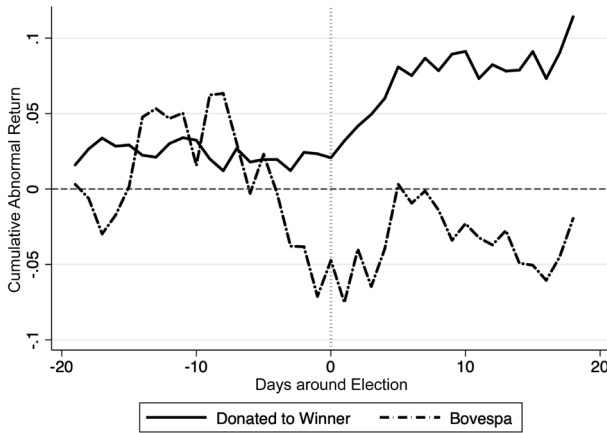


Figure 2. Cumulative abnormal returns around the 2014 presidential elections

benefits from corporate contributions outweighed the benefits from individual donations.¹⁴ This is because of the large difference in size between individual and corporate donations. If influence could still be retained at the arguably lower cost of individual contributions, contributing firms should benefit from the reform as obtaining influence becomes cheaper.

5.2. Does Influence Persist?

In Section 4, we document that individuals increased their contributions following the ban. This increase was even more pronounced among individuals with the strongest ties to companies that used to make large political contributions (like owners or board members; see Section OA3). In light of this, it is important to ask whether influence persists, despite the ban, through individual donations.

Figure 4 shows a sharp increase in the value of firms with large amounts of affiliated individual donations to winning candidates, where affiliation stems from ownership, board membership, or participation in management. Note that the sharp increase precedes election day. This is because Jair Bolsonaro's second-round election win was not close, as Rousseff's was, and immediately after first-round election polls were released, his probability of winning the second round spiked. The first two polls that made Bolsonaro's eventual win clear were released

¹⁴ While the baseline estimates use aggregate donations to winning and losing candidates for all elections, it is also possible to use the vote shares received by each candidate to restrict the analysis to close elections. More specifically, the vote shares can be used as the running variable in a regression discontinuity design (RDD) that focuses on companies and individuals who donated to winning candidates in close elections, which implicitly excludes contests that were somewhat anticipated. Overall, the RDD yields qualitatively similar results but higher magnitudes, which is consistent with contributions being more valuable in more competitive contests. See Section OA6.

Table 4
Cumulative Abnormal Returns of Firms with Donations to Political Candidates

	Corporate 2014		Individual 2014		Individual 2018		All 2014	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Corporate contributions to winner	173.91** (34.97)	185.67** (49.32)						
Corporate contributions to loser	-4.53** (1.52)	-7.18* (3.72)						
Individual contributions to winner			2.22 (11.09)	-10.98 (20.63)	178.90** (56.08)	149.16** (32.00)		
Individual contributions to loser			-15.56 (11.73)	-25.41* (11.06)	-25.57** (7.69)	-48.72** (8.42)		
Total contributions to winner							25.08 (35.11)	21.16 (36.38)
Total contributions to loser							-4.07 (5.39)	-5.04 (5.93)
Size		-3.15* (1.57)		-3.58* (1.57)		-1.87 (2.56)		-3.08* (1.60)
Revenue		3.53** (1.34)		3.97** (1.39)		-4.11 (3.46)		3.45** (1.41)
N	228	228	228	228	207	207	228	228

Note. Results are from equation (2) using an event window of 20 business days before and 20 business days after the election (Claessens, Feijen, and Laeven 2008). Robust standard errors are in parentheses.

+ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

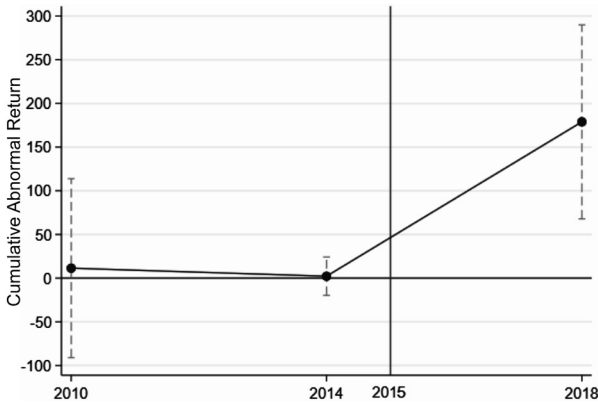


Figure 3. Cumulative abnormal returns of firms with individual donations

on October 10 and October 18, 2018; these dates are indicated by the vertical dashed lines in Figure 4.¹⁵

In Table 4 the effect of individual donations on the value of a firm for 2014 and 2018 moves from close to 0 in 2014 to between 149 and 179 basis points for each percentage-point increase in normalized contributions. This effect is comparable to the effect that corporate contributions had in 2014, which suggests that influence realigns from corporate contributions to individual contributions. This change is also apparent in Figure 3, where estimates are close to 0 for 2010 and 2014 but sharply jump in 2018, similar to the increase in the number of individual donors and the size of their donations (Figure 1). Taken together, the results thus far can be interpreted as indicating that the ban on corporate contributions opened the door for individual contributions to become a viable channel to gain influence.

5.3. How Does Persistent Influence Affect Firm Value?

Finally, we evaluate the response of the stock market to the ban against its expected response based on the size of contributions, its response based on corporate contributions before the reform, and its response based on individual contributions after the reform. This analysis addresses two questions: whether the value from making contributions exceeded its cost to a firm and whether the market expected individual contributions to increase, and influence to persist, after the reform. To assess if investors' expectations were aligned with the future contri-

¹⁵ In head-to-head polls Fernando Haddad closely trailed Bolsonaro before the first round. For example, in the last poll Haddad had 43 percent of the vote, while Bolsonaro had 45 percent. By contrast, the first and second polls had Bolsonaro leading Haddad by 49 percent to 36 percent and 50 percent to 35 percent, respectively (*UOL Notícias* 2018). For a limited examination in English, see Lemon (2018).

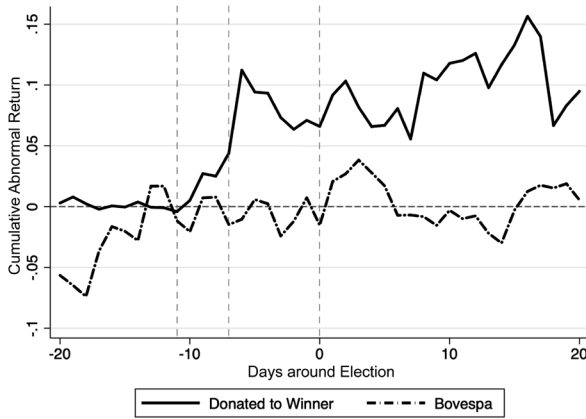


Figure 4. Cumulative abnormal returns around the 2018 presidential elections

butions and future influence of a firm, it is necessary to contrast the market response to the ban with the discounted present value of future cash flows.

5.3.1. Expected Value of the Reform

First, we evaluate the expected value of the reform. A ban on corporate contributions is not necessarily adverse to a firm. The firm would experience a decline in value for any loss of influence via corporate contributions, but it would also experience an increase in value by not spending corporate resources and from additional channels of influence obtained after the reform (for example, individual contributions). If the present value of all the unspent contributions plus the expected value of future influence through individual contributions exceeds the value of influence through corporate donations, the ban on corporate contributions might increase rather than decrease the value of the firm. This analysis sheds light on whether the corporate ban increased or decreased firm value.

The expected benefit to the firm arising from the passage of the reform is given by the present value of unspent corporate contributions, minus any benefits that might have accrued from such contributions, plus any benefits accruing to the firm through the donations made by individuals affiliated with the firm. We can state this formally as

$$\begin{aligned}
 \text{NPV}(\text{Ban}) = & \text{NPV}(\text{Unspent Corporate Contributions}) \\
 & - \text{NPV}(\text{Political Connection from Corporate Contributions}) \quad (3) \\
 & + \text{NPV}(\text{Political Connection from Individual Contributions}) + \lambda,
 \end{aligned}$$

where λ is a shadow cost that captures additional mechanisms that are not observed by the econometrician. For example, firms might compensate for lost cor-

porate contributions by making illegal *caixa dois* contributions¹⁶ or by increasing compensation for managers and board members.¹⁷ Inasmuch as backdoor channels are used, the value of unspent corporate contributions will be lower, and the realized value of the ban should be lower than its expected value.

To obtain the net present value of unspent corporate contributions, we calculate a perpetuity with payments every 4 years equal to the contributions made by the firm (as a percentage of assets). To obtain the net present value of political connections arising from corporate contributions or individual contributions, we first calculate a perpetuity with annual payments equal to A_C and A_I , respectively, which represent the net annual benefit to the firm from donating to a winning candidate, and then multiply the value of such perpetuity by the probability of a dollar contributed going to the winning candidate.

We can derive A_C and A_I from the CARs in Table 4: A_C and A_I are the payments of a 4-year annuity valued at the CAR adjusted by $1 - \pi_w$, where π_w is the expected probability of the winning candidate winning taken close to the election day. The reason for the adjustment is that stock prices will have already incorporated part of the expected value of the candidate winning. Formally, A_C and A_I solve

$$\frac{\text{CAR(Political Connection)}}{1 - \pi_w} = A + \frac{A}{1 + \kappa} + \frac{A}{(1 + \kappa)^2} + \frac{A}{(1 + \kappa)^3}, \quad (4)$$

where κ is the average cost of capital for the firm.

Table 5 shows the results from this exercise and the values and sources for each parameter. The annual benefits accruing to the firm from corporate and individual donations are not very dissimilar: the annual benefit from individual contributions is only 22 percent lower than that from corporate contributions. These annual benefits translate into a cash-flow stream with present value of 20.8 and 16.2 basis points. In contrast, the present value of corporate contributions spent relative to the size of the firm accounts for roughly half the value of the benefits. This indicates that the savings from not making future corporate contributions are not enough to offset losing the benefits from those contributions, let alone increase the value for the firm. However, the sum of the present value of future corporate contributions spent and the benefits stemming from individual contributions compensates for and exceeds the value of the benefits lost after the ban. The expected net benefit to the firm, according to equation (3), is 5.2 basis points.

5.3.2. Shareholders' Valuation of the Reform

We can assess if investors' expectations were aligned with the future contributions and future influence of the firm documented in Section 5.3.1 by looking at the direct stock market response to the ban. Figure 5 shows that, after the ban, firm value increased by around 62.9 basis points for each percentage-point in-

¹⁶ See note 5.

¹⁷ Section OA7 presents suggestive evidence that this might be taking place.

Table 5
Expected Value of the Ban on Corporate Donations

	Value	Definition	Source
Valuation inputs:			
CAR ^C	.10	Cumulative abnormal returns from corporate contributions as a percentage of assets	Tables 1 and 4
CAR ^I	.05	Cumulative abnormal returns from individual contributions as a percentage of assets	Tables 1 and 4
CAR ^{Ban}	.04	Cumulative abnormal returns from corporate contributions as a percentage of assets after the ban	Table 1 and Figure 5
π_W^C	57.3	Probability of winning for elected candidate in 2014	Carvalho and Guimaraes (2018)
π_W^I	70.0	Probability of winning for elected candidate in 2018	Rapoza (2018)
ϕ_W	35.0	Percentage of contributions to winning candidate	Table 1
κ	11.5	Weighted average percentage cost of capital	Ribeiro-Coutinho, Sheng, and Ivanoff-Lora (2012)
Intermediate items:			
A_C	6.8	Annual benefit in basis points from corporate donation to winner	Equation (4)
A_I	5.3	Annual benefit in basis points from individual donation to winner	Equation (4)
NPV(Corporate Contributions)	9.9	Present value in basis points of contributions every 4 years	Contributions from Table 1/((1 + κ) ⁴ - 1)
NPV(Payoff Corporate Contributions)	20.8	Present value in basis points of annual cash flows A_C times the probability of the candidate winning	$\phi_W \times A_C/\kappa$
NPV(Payoff Individual Contributions)	16.2	Present value in basis points of annual cash flows A_I times the probability of the candidate winning	$\phi_W \times A_I/\kappa$
Value of ban on corporate contributions:			
NPV _{Realized} (Ban)	4.4	Value in basis points of the ban on cumulative abnormal returns	CAR ^{Ban}
NPV _{Expected} (Ban)	5.2	Value in basis points of the ban estimated from cash flows	Equation (3) with $\lambda = 0$
λ	.8	Shadow cost in basis points of the ban	NPV _{Realized} - NPV _{Expected}

crease in normalized contributions. This is close to 40 percent of the estimated value obtained from influence through corporate contributions. It is important to note that in the months preceding the ban there was political turmoil involving the Brazilian national petroleum company Petrobras, politicians including then-president Dilma Rouseff, and industry leaders—this is the well-known Operation Car Wash scandal. Because of this, we urge the reader to view these estimates with caution. Nevertheless, we attempt to mitigate concerns that the estimates might be driven by industries directly affected by the scandal. More specifically, Figure 5 has estimates excluding industries with historical ties to corruption, namely, energy, construction, communications, and real estate. It also shows estimates controlling for industry fixed effects. All estimates are economically similar and statistically indistinguishable from the main estimate. Furthermore, the timing of the increase in CARs in the event study in Figure 6, which compares CARs for firms with donations in 2014 with firms that made no donations, mitigates the concern that preexisting conditions are driving the estimates.

We close this section by noting that the realized value of the ban is 15 percent below the estimate in Section 5.3.1, which, if the market is efficient, might be interpreted as evidence that *caixa dois* contributions or increases in executive compensation erode potential gains from the ban. Nevertheless, both approaches point toward the conclusion that the ban did increase the value of firms and that savings from unspent contributions and influence persisting through individual donations are both important drivers of this increase.

6. Discussion: Which Legal Arguments Work?

In this section, we connect our findings with some of the broad intents or rationales behind the design and implementation of campaign finance regulation. In particular, we discuss how the ban could have affected persistence of influence, the playing field across firms, and shareholder protection.

6.1. Persistence of Influence

A back-of-the-envelope calculation shows that a meaningful amount of influence persists. Using corporate contributions in 2014 and individual contributions in 2018 from Table 1 and annual benefits for a firm in terms of annuity values from Table 5, we find that the persistence of influence due to individual contributions is an economically meaningful 10.2 percent relative to the levels of influence before the ban's implementation.¹⁸ This effect is likely a lower bound, since the ability of individuals to siphon contributions was limited to 10 percent of their income. Still, despite this large effect stemming from a back door in the policy change, the reform was fairly successful, reducing influence by almost 90 percent.

¹⁸ The measure is obtained by taking the ratio of the annual benefit times contributions for individual donations in 2018 to the annual benefit times contributions for corporate donations in 2014. Recall that individual contributions exerted no influence prior to the ban.

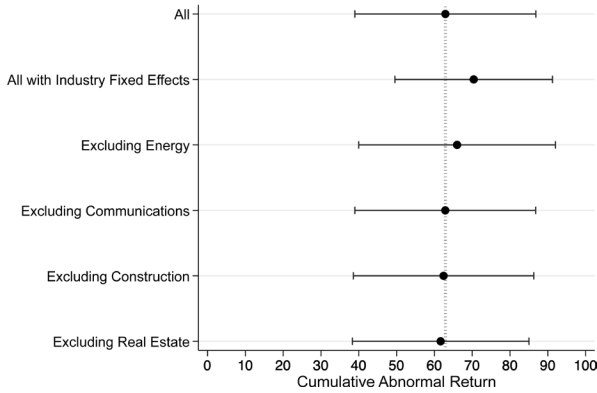


Figure 5. Cumulative abnormal returns of firms with corporate donations after the ban

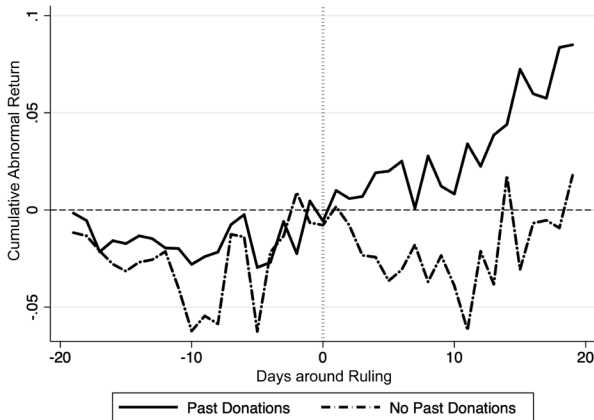


Figure 6. Cumulative abnormal returns around the ban

6.2. Level Playing Field for Firms

Another important concern is whether the shift from influence through corporate contributions to influence through individual contributions leveled the playing field between companies, presumably by making contributions more affordable. In other words, do companies that did not benefit from corporate contributions before the ban obtain influence through individual donations after the ban?

Figures 7 and 8 show the effects of contributions for firms below and above the median firm size. In 2014, corporate contributions yielded higher value for large firms, with CARs jumping to around 10 basis points following the electoral victory of a candidate to whom they had contributed. In contrast, for small firms there was no meaningful effect during election day, and the CARs were largely

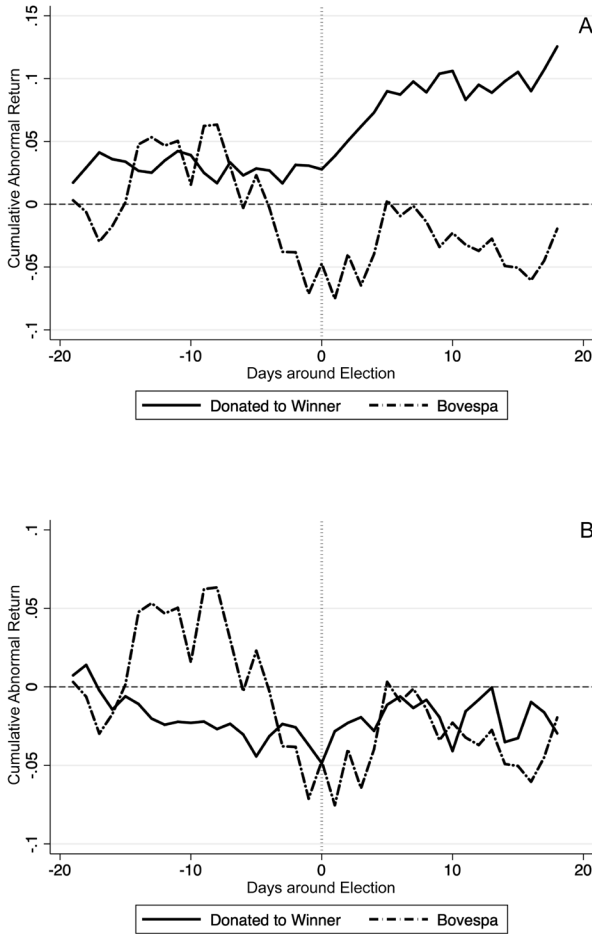


Figure 7. Cumulative abnormal returns around the 2014 presidential elections by firm size. A, Above-median assets; B, below-median assets.

negative during the event window. This is consistent with larger firms, which make the largest contributions, being the main beneficiaries of influence stemming from political contributions.

Following the ban on corporate political donations, the pattern flips. Smaller firms now benefit the most from contributions made by their affiliated individuals. Taken together, Figures 7 and 8 suggest that the ban had a leveling effect on the participation of firms in the political process.

However, it is important to make two caveats. First, while Figure 7 shows that CARs for large firms were statistically different from those for smaller firms in 2014, we cannot reject the null hypothesis that CARs for small and large firms were different from each other in 2018. Second, and more important, while the

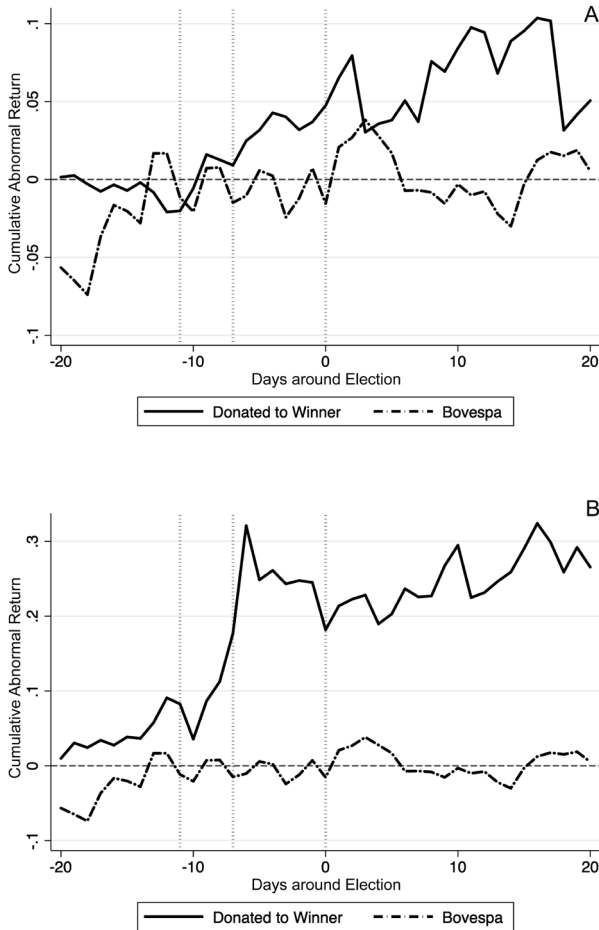


Figure 8. Cumulative abnormal returns around the 2018 presidential elections by firm size, A, Above-median assets; B, below-median assets.

paradigm shift between 2014 and 2018 appears to be dramatic, we cannot rule out better alignment between small firms and Bolsonaro in 2018 than between small firms and Rousseff in 2014. We believe that the realignment of influence between small and large firms would benefit from further research, especially in settings with larger pools of firms and where alignment between the winner of an election, or the ideology thereof, and firm size can be controlled for more effectively.

6.3. Shareholder Protection

During the litigation of *Citizens United*, the main argument espoused by then-solicitor general and now Supreme Court justice Elena Kagan in defense of a ban

on corporate contributions was the adverse effect it had on minority shareholders. There is a freedom-of-speech argument in support of this position on the grounds that the firm may use funds to support positions that are at odds with the views of shareholders.¹⁹ There is also an economic argument, namely, that contributions made by a firm may not be economically beneficial to shareholders and in particular to minority shareholders.

In Section 5.3.1, we document that the reform increased the market valuation of firms. This partly stemmed from reincorporating to the firms the expected present value of unspent future contributions. But it also stemmed from incorporating the value of influence acquired through the contributions made by individuals affiliated with firms and hence not directly financed by firms. Thus, exclusively from a financial perspective, minority shareholders were adversely affected by corporate contributions if such contributions did not provide sufficient influence for firms. As we described, smaller firms did not experience any benefit from contributing to a winning candidate. For larger firms, the economic side of the shareholder protection argument is less clear.

7. Conclusion

This paper studies the dynamics inherent in incomplete campaign finance reform, whereby corporate contributions are banned but individual contributions are left unchecked. We find that when banning corporate donations is not accompanied by binding limits on individual contributions, loopholes arise that permit undue influence to persist. This is because corporate contributions can be substituted by individual contributions and because, after the reform, individual contributions yield benefits to firms. These dynamics suggest that the proper implementation of campaign finance reform must take into account reallocation of contributions from corporations to individuals.

Still, there are large potential gains from incomplete campaign finance reform, as individuals' ability to absorb part of the contributions formerly made by corporations is limited. This restricts the cost of contributions to shareholders (the shareholder protection argument) and allows for a more level playing field across firms.

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¹⁹ The implications of this argument are broad and outside the scope of this paper. There is extensive legal analysis on this subject. See Gardner and Charles (2018).

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