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Lobbying and lending by banks around the financial crisis

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Abstract
Despite the unprecedented levels of liquidity provided by the Federal Reserve to banks during the 2007–2008 financial crisis, lending by banks slowed dramatically during and after that global episode. In this study, we propose that, given capital constraints, the lobbying expenditures by banks to combat Dodd-Frank might have crowded out lending activity. A variety of univariate and multivariate tests show that while lending by banks fell significantly around the financial crisis, lobbying rose dramatically. Our results also show that bank lobbying and lending are imperfect substitutes during non-crisis periods. Such substitutability likely is explained by the value perceived in the political connections gained through lobbying, such as the ability to influence regulation, preferential treatment on supervisory or enforcement decisions, and protection against adverse shocks in the form of government bailouts.

Keywords Corporate lobbying · Bank Lending · Regulation · Financial Crisis · Political connections · Bailouts

JEL Codes G21 · G28 · D72

1 Introduction

Until the recent Covid-19 pandemic, the liquidity provided to the financial system during the 2007–2008 global crisis (financial crisis hereafter) by the Federal Reserve (Fed) was unprecedented. In 2011, the US Government Accountability Office (GAO) conducted the

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first full-scale audit of the Fed since its inception in 1913. The audit revealed that both during and after the financial crisis, the Fed provided approximately $16 trillion in "emergency support" funding to various firms. Despite the extraordinary amount of liquidity injected into the financial system, lending activity by banks fell dramatically during the crisis and remained unusually low throughout its aftermath. For instance, Ivashina & Scharfstein (2010) report that, during the fourth quarter of 2008, lending activity declined by nearly 47%; and De Haas & Van Horen (2012, 2013) document that cross-border lending shrank by 58% following the collapse of Lehman Brothers.[1]

Admittedly, the primary objective of the additional funding by the Fed during the financial crisis was not only to improve the level of lending activity but also to provide firms with a capital cushion to absorb losses during times of stress and to moderate "systemic risk". Still, in 2012, then-Fed Chairman Ben Bernanke – speaking at the Annual Conference on Bank Structure and Competition – noted that "bank lending has been improving but remains restrained in some areas" and that the "Federal Reserve takes seriously its responsibility to ensure that supervisory actions … do not unintentionally constrain lending".[2] The focus on bank lending, particularly during times of crisis, is based on both theoretical and empirical literature that suggests that bank credit enhances economic growth and development (Schumpeter, 1912; Levine, 1991; King & Levine, 1993; Bencivenga et al., 1995; Demirgüç-Kunt & Maksimovic, 1996; Levine & Zervos, 1998). Thus, the substantial decline in lending activity around the financial crisis is troubling and warrants explanation.

While the existing research provides some explanations for the decline in bank lending around the financial crisis, no one catch-all reason has been identified. In the theoretical model of Bebchuk & Goldstein (2011), banks might abstain rationally from lending to nonfinancial firms during times of crisis out of a "self-fulfilling" fear that other competing banks would withhold similar loans. Giannetti & Laeven (2012) note that the collapse in the global lending market around the financial crisis was in part a function of lenders rebalancing their portfolios to domestic borrowers. Košak et al., (2015) show that the quality of a bank's capital directly affected its lending practices during the financial crisis. Dagher & Kazimov (2015) find that US banks that relied more on wholesale funding, such as federal funds and public funds, reduced their credit lending by more during the financial crisis than those reliant on more traditional retail demand deposits. Di Patti & Sette (2016) show that the securitization of loans before the crisis is inversely related to the amount of credit supplied by a particular bank and, therefore, the freeze on securitization during the financial crisis may help explain the decline in lending.

In this study, we hypothesize that banks substituted lending opportunities for political investments in corporate lobbying around the financial crisis. We then examine whether substitutability between bank lending and lobbying holds more generally during non-crisis periods. Lobbying often is defined as a practice whereby legally sanctioned actions are taken by individuals or special interest groups to sway political opinions and affect regulation (see, e.g., Drutman 2015). Lobbying by banks has increased in absolute terms from $36.3 million in 1999 to around $86.3 million in 2016 (Igan & Lambert, 2019). The question that arises is, why would banks substitute lending for lobbying?

[1] Several other studies document a decline in cross-border lending around the financial crisis (see, e.g., Takáts 2010; Cetorelli & Goldberg, 2011; Brei & Schclarek, 2013).

[2] See the article "Banks and Bank Lending: The State of Play" by Fed Chairman Ben S. Bernanke released on May 10, 2012 available at https://www.federalreserve.gov/newsevents/speech/bernanke20120510a.htm.

A primary explanation for why banks lobby is to influence the initiation of regulation. Grossman & Helpman (1996) develop a theoretical model in which special interest groups, through their lobbying efforts, persuade legislatures to support their parochial aims. Consistent with that conjecture, Igan & Mishra (2014) show empirically that lobbying increases the likelihood that legislators will switch their votes on key bills. Not only are bank lobbyists attempting to sway votes on certain legislation, but they also are involved heavily in the drafting of the bills. Allowing banks to participate in the legislative process is a highly controversial practice because many scholars believe that poor policy choices were a leading cause of the financial crisis and that a greater separation of regulatory powers is necessary (Lastra & Wood, 2010; Nichols et al., 2011).

In response to the financial crisis, President Barack Obama signed into law the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank"), which overhauled the entire financial regulatory system. However, bank lobbyists did not sit on the sidelines while the reform was being crafted. In fact, President Obama stated that "passing this bill was no easy task. To get there, we had to overcome the furious lobbying of an array of powerful interest groups … determined to block change."[3] Ban & You (2019) found that a staggering 2,961 organizations participated in lobbying during the congressional bill stage of the Dodd-Frank Act, the rulemaking stage, or both. Even after the bill's passing, bank lobbyists continued to put pressure on regulators to relax provisions and restrictions. The *New York Times* reported that Citigroup lobbyists helped draft a House bill that would relax the "push-out-rule" associated with the Dodd-Frank Act that prohibited banks from trading certain derivatives. Indeed, regulators adopted 70 lines written by Citigroup in the final 85-line bill.[4] Spitler (2020) provides a detailed review of banks' lobbying efforts in their decade-long fight against the Dodd-Frank Act. Thus, banks lobby to influence regulations to their own benefit.

Another reason why banks lobby is to receive preferential treatment, particularly on supervisory and enforcement decisions. Stigler (1971) first introduced the idea that regulation can induce rent-seeking behavior by profit-maximizing firms that seek to convince the government to exercise its power to the firms' benefit. That theory, which often is referred to as *regulatory capture*, was generalized by Peltzman (1976). Dal Bó (2006) provides a thorough review of the relevant literature. More specifically in the financial sector, Igan & Lambert (2019) build a conceptual framework showing that banks lobby to induce regulators to cater to their own narrow interests. Empirical evidence supports that claim: Lambert (2019) shows that regulators are nearly 45% less likely to initiate enforcement actions against banks that lobby. Therefore, it appears that bank lobbying leads to laxer enforcement decisions.

Banks also lobby to receive regulatory protection against adverse macroeconomic shocks. Faccio et al., (2006) show that politically connected firms, the majority of which belonged to the financial sector, were more likely to receive government bailout money than similar non-connected firms between 1997 and 2002. Additionally, Duchin & Sosyura (2012), Igan et al., (2012), and Blau et al., (2013) show that banks that had lobbied before

[3] See the summary of "President Obama Signs Wall Street Reform: No Easy Task" by Jesse Lee on July 21, 2010 available at https://obamawhitehouse.archives.gov/blog/2010/07/21/president-obama-signs-wall-street-reform-no-easy-task.

[4] See the *New York Times* article, "Banks' Lobbyists Help in Drafting Financial Bills," by Lipton and Protess published on May 23, 2013.

the financial crisis were substantially more likely to receive support from the US Treasury's Troubled Asset Relief Program (TARP). Likewise, Blau (2017) shows that lobbying banks were between 28% and 36% more likely to participate in the Federal Reserve's emergency loan programs during the financial crisis. Therefore, bank lobbying can be described as synthetic insurance that can be claimed during a crisis.

As banks that lack political connections observe the previously discussed benefits received by connected banks, they may become more prone to engage in political activity themselves. Such behavior would be consistent with the theoretical models of how networks influence economic behavior (Ellison & Fudenberg, 1993). To the extent that the actions and subsequent payoffs of corporate lobbying are observable, bank managers might base their investment decisions, at least in part, on the actions and experience of peer banks. The empirical findings of Dougal et al., (2015) and Fracassi (2017) show that investment decisions made by a particular firm are influenced heavily by the investment decisions of peer firms. Ozoguz & Rebello (2013) and Foucault & Fresard (2014) suggest that firms rely on the valuation of peer firm stock prices to make capital allocation decisions.

Regardless of the motivations to develop political connections, in the presence of capital constraints, spending on corporate lobbying might crowd out lending activity. To examine both the lending and political activities of banks, we obtain a broad sample of 621 banks over the 2000 − 2016 period. Our results show that during the post-crisis period (2009 to 2016), relative to the pre-crisis period (2000 to 2008), the number of banks that lobby during a particular year increased by nearly 71% and the total dollar expenditure on lobbying nearly doubled over the same period. Interestingly, lobbying expenditures, relative to total assets, for the sample banks increased by nearly 567% during the post-crisis period versus the pre-crisis period. Furthermore, the loan-to-asset ratio declined significant by 2.7% during the same period for the average bank in our sample. In multivariate tests that control for various bank characteristics, we find qualitatively similar results that are both statistically and economically meaningful.

In our second set of tests, we focus primarily on the post-crisis period and find a significant negative association between lending activity and lobbying activity more generally. Ex post, banks that lobbied reported a loan-to-assets ratio that was 8.18% lower than banks that had not lobbied. Similar results are found when we examine loan growth instead of the loan-to-asset ratio. We also find that the ratio of lobbying expenditures to assets is associated significantly with a reduction in both loan-to-assets and loan growth. In additional tests, we partition the types of lending activity into residential and commercial lending. We find some evidence of a negative association between lobbying activity and both types of lending activity, suggesting that our post-crisis results are not driven entirely by either residential or commercial lending. Those findings support our hypothesis and suggest that the banks' investments in political activity may be responsible (in part) for the reduction in lending that occurred during and after the financial crisis.

Our results contribute to the existing literature, both theoretical and empirical, attempting to explain the decline in lending activity by banks around the financial crisis (see, e.g., Bebchuk & Goldstein 2011; Giannetti & Laeven, 2012; Di Patti & Sette, 2016). We provide evidence that banks substituted lending activity for corporate lobbying during the financial crisis. Our results also have broader implications: we show that lobbying activity crowds out lending activity more generally during non-crisis periods. Our findings highlight some

potential externalities associated with political activism.[5] Thus, a capital-constrained, profit-maximizing bank must carefully evaluate the costs and benefits associated with lobbying and treat it as one of their available investment opportunities. More specifically, we show that expenditures on political connections forged through corporate lobbying is positively related to the extent to which banks tighten their credit supply, both during and after a financial crisis.

Traditionally, the economics literature has focused on the moral hazard associated with governmental bailouts (Baldwin & Robert-Nicoud, 2007), which suggests that a direct financial subsidy might create perverse incentives for a firm to take on more risk in its investment or operating activities. For instance, prior research indicates that insurance markets can create moral hazard because insured parties might engage in more risk-taking activities than their uninsured counterparts (Pauly, 1968; Shavell, 1979; Rubinstein & Yaari, 1983; Alger & Ma, 2003; Saito, 2006). To the extent that political connections offer a synthetic insurance benefit or protection against adverse shocks (Faccio et al., 2006; Duchin & Sosyura, 2012; Igan et al., 2012; Blau, 2017), our documented surge in bank-level lobbying during and after the crisis may have systemic risk implications for the financial system. The potentially negative implications associated with corporate political activity fits nicely into the public choice literature that highlights the tradeoffs between productive activities – like innovation – and unproductive activities – like rent-seeking opportunities (Baumol, 1990).

The rest of this paper is organized as follows. Section 2 describes the dataset studied throughout the analysis and presents descriptive statistics. Section 3 reports the results of our empirical tests. Section 4 offers some concluding remarks.

2 Data description

The information relied on herein comes from two sources. From Bank Compustat, we obtain several different financial-statement variables for our sample of 621 banks. We gather data on the amount of lending activity as well as observations from the balance sheet and income statement of each of the sample banks. From the Center for Responsive Politics (CRP), we collect data that captures the lobbying expenditures of each bank. The lobbying expenditures are gathered from disclosure reports that are required by the Lobbying Disclosure Act of 1995, which begin in 1998. Those reports are filed with the Office of Public Records and formalized by the CRP. Our sample period runs from the year 2000 to 2016 and consists of an unbalanced panel of 8,229 bank-year observations.

The following variables, used throughout the empirical analysis, are defined as follows. *Lobby* is an indicator variable equal to one if a particular bank has positive lobbying expenditures and zero otherwise. *LobbyAmt* is the number of lobbying expenditures for a bank in a given year. *LobbyAmt/Assets* is the ratio of *LobbyAmt* to total assets. *Loans* is the aggregate face value of all outstanding bank loans in USD millions. *Assets* is total bank assets in USD millions. *Loans/Assets* is the ratio of outstanding loans to total assets. *D/E* is the ratio of total

[5] A large body of research shows that shareholders value lobbying efforts, or political connections more generally (see, e.g., Morck et al., 2001; Johnson & Mitton, 2003; Faccio, 2006; Borisov et al., 2016). Additionally, Coyne et al., (2010) suggest that unproductive rent seeking eventually will lead to more future rent-seeking activity. In the context of our study, the substitution effects of lobbying and lending activity might become stronger given that current lobbying activity may lead to more lobbying activity in the future.

liabilities to total equity. *ROE* is the return on equity or net income scaled by total equity. *Deposits* is the total amount of deposits in USD millions.

Table 1 reports summary statistics for our dataset. The average bank in the sample has roughly $43 billion in assets. Nearly 2% of banks have positive lobbying expenditures during a given year. Furthermore, the average bank reports $17,093 in lobbying expenditures, which makes up a very small fraction of total assets – 0.00001%. While that amount is not superficially substantial, the average *LobbyAmt* is biased downward because many banks in the sample have zero lobbying expenditures. For banks that have lobbied, the mean *LobbyAmt* is nearly $885,000, which represents approximately 0.055% of total assets. The average bank in our sample has $20.6 billion in *Loans*, a loan-to-assets ratio of 66.5%, a debt-to-equity (*D/E*) ratio of 9.92, a return on equity (*ROE*) of 7.73%, and *Deposits* of $23.5 billion.

We also report pairwise correlations between the variables in Table 2. *Lobby* is positively correlated with *LobbyAmt* (0.4494), *LobbyAmt/Assets* (0.3124), *Loans* (0.1910), *Assets* (0.2703), and *Deposits* (0.2489). The size of the financial institution is an important indicator of its propensity to lobby, as can be seen by the positive and significant correlations between *Assets* and each of the lobbying variables. In contrast, the loan-to-asset ratio is negatively and significantly correlated with the lobbying variables. Those correlations start to hint at a substitutional relation between bank lending and lobbying.

3 Empirical results

3.1 Bank lobbying and lending around the financial crisis – univariate tests

We begin our empirical analysis by examining bank lobbying and lending around the financial crisis graphically. Figure 1 plots three measures of lobbying activity against loans-to-assets across the entire sample period. The top panel plots the lobbying-to-assets ratio, the middle panel plots the average amount of lobbying expenditures, and the bottom panel plots the percentages of banks that lobby. A visual inspection of the graphs supports our hypothesis of a negative relation between lending and lobbying generally: the plots seem to move in opposite directions. Average bank lobbying appears to increase dramatically following the peak of the financial crisis in 2011. Conversely, average bank lending relative to assets appears to decline substantially following the financial crisis, reaching a trough around 2011. We believe that the plots offer supporting evidence for the conjecture that banks lobby to influence regulation (i.e., Dodd-Frank) and, in doing so, sacrifice lending opportunities.

We now estimate more formal univariate models of bank lobbying and lending around the financial crisis. The pre-crisis period is defined as 2000 to 2008; the post-crisis period is defined as 2009–2016. Panel A of Table 3 applies to the pre-crisis period and Panel B to the post-crisis period; Panel C reports the difference in means for each variable (post minus pre) with t-statistics in parentheses. We find that about 1.47% of banks lobbied before the financial crisis, which increased to 2.52% after the crisis. The difference of 1.05% points reported in Panel C is significant at the 0.01 level, representing roughly a 71% increase in the number of banks that allocated resources to lobbying after the financial crisis. Similarly, the average *LobbyAmt* increased from $11,996.51 to $23,598.05 after the financial crisis. That difference of $11,601.54 is statistically significant at the 0.10 level. We also show that the average *LobbyAmt/Assets* increased by approximately 567% after the financial cri-

Table 1 – Summary statistics. The table reports statistics that summarize the data used throughout the analysis. Assets is the total assets in $ millions. Lobby is an indicator variable equal to one if a firm has positive lobbying expenditures in a given year and zero otherwise. LobbyAmt is the dollar amount of lobbying expenditures by a firm in a given year. LobbyAmt/Assets is the ratio of total lobbying expenditures to total assets. Loans is the aggregate face value of all outstanding loans in $ millions. Loans/Assets is the amount of total outstanding loans to total assets. D/E is the ratio of total liabilities to total equity. ROE is the return on equity or the net income scaled by total equity. Deposits is the total amount of deposits in $ millions

	Mean	Std. dev.	25th Perc	Median	75th Perc
	[1]	[2]	[3]	[4]	[5]
Assets	$42,875.40	$227,329.11	$511.64	$1,130.31	$3,919.21
Lobby	1.93%	13.77%	0.00%	0.00%	0.00%
LobbyAmt	$17,093.07	$270,991.90	$0.00	$0.00	$0.00
LobbyAmt/Assets	0.00001%	0.00024%	0.00000%	0.00000%	0.00000%
Loans	$20,611.98	$99,610.24	$339.83	$760.79	$2,585.59
Loans/Assets	66.50%	13.50%	59.80%	68.20%	75.60%
D/E	9.92	34.73	7.72	9.56	11.61
ROE	7.73%	188.54%	4.22%	8.14%	11.85%
Deposits	$23,529.16	$112,038.90	$386.94	$869.49	$2,925.44

Table 2 – Correlation matrix. The table reports the correlation matrix for variables used throughout the analysis. Lobby is an indicator variable equal to one if a firm has positive lobbying expenditures in a given year and zero otherwise. LobbyAmt is the dollar amount of lobbying expenditures by a firm in a given year. LobbyAmt/Assets is the ratio of total lobbying expenditures to total assets. Loans is the aggregate face value of all outstanding loans in $ millions. Assets is the total assets in $ millions. Loans/Assets is the amount of total outstanding loans to total assets. D/E is the ratio of total liabilities to total equity. ROE is the return on equity or the net income scaled by total equity. Deposits is the total amount of deposits in $ millions. The bold coefficients are significant at the 0.01 level

	Lobby	LobbyAmt	LobbyAmt/Assets	Loans	Assets	Loans/Assets	D/E	ROE	Deposits
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Lobby	1.0000	**0.4494**	**0.3124**	**0.1910**	**0.2703**	**-0.1477**	0.0087	-0.0002	**0.2489**
LobbyAmt		1.0000	**0.1117**	**0.2660**	**0.3789**	**-0.1372**	0.0060	0.0003	**0.3598**
LobbyAmt/Assets			1.0000	0.0175	**0.0231**	**-0.0635**	0.0021	-0.0004	**0.0237**
Loans				1.0000	**0.9367**	**-0.1950**	0.0339	0.0006	**0.9672**
Assets					1.0000	**-0.2571**	0.0391	0.0002	**0.9557**
Loans/Assets						1.0000	-0.0096	-0.0037	**-0.2448**
D/E							1.0000	**-0.9644**	**0.0333**
ROE								1.0000	0.0008
Deposits									1.0000

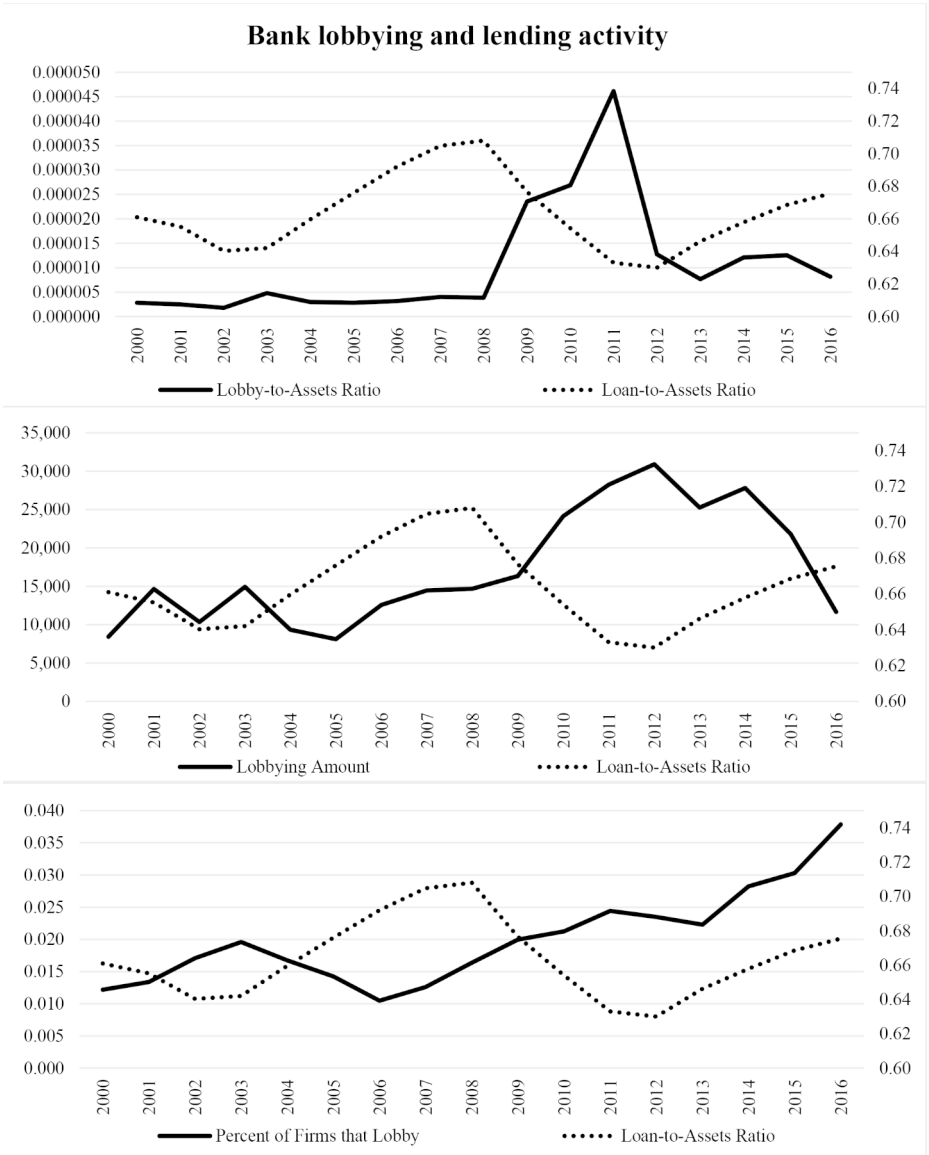

Fig. 1 The figure plots three measures of lobbying activity against the loan-to-assets ratio across the sample period. For all three panels, loan-to-assets are reported on the right vertical axes. The top panel plots the lobbying-to-assets ratio (on the left vertical axis). The middle panel plots the average amount of lobbying expenditures (on the left vertical axis). The bottom panel plots the percent of banks that lobby (on the left vertical axis)

sis. Therefore, while banks became more active lobbyists after the financial crisis, lending declined. Again, we believe that the lobbying-lending relationship is driven primarily by the congressional push on the Dodd-Frank Act, which resulted in a lobbying blitz by banks.

Table 3 – Lobbying and lending activity by banks around the financial crisis. The table reports statistics during the Pre-Crisis (Panel A) and the Post-Crisis (Panel B) period. In Panel C, we report the mean difference between the Post- and the Pre-Crisis Periods. Lobby is an indicator variable equal to one if a firm has positive lobbying expenditures in a given year and zero otherwise. LobbyAmt is the dollar amount of lobbying expenditures by a firm in a given year. LobbyAmt/Assets is the ratio of LobbyAmt to total assets. Loans/Assets is the aggregate face value of all outstanding loans to total assets. T-statistics testing whether the difference in means is statistically different from zero are reported in parentheses. *, **, and *** denote statistical significance at the 0.10, 0.05, and the 0.01 levels, respectively

	Pre-Crisis Period (2000–2008)	Post-Crisis Period (2009–2016)	Difference (Post-Pre)
Lobby	1.47%	2.52%	1.05%***
			(3.41)
LobbyAmt	$11,996.51	$23,598.05	$11,601.54*
			(1.93)
LobbyAmt/Assets	0.000003%	0.000020%	0.000017%***
			(3.12)
Loans/Assets	67.26%	65.45%	-1.81%***
			(-6.07)

3.2 Bank lobbying around the financial crisis – multivariate tests

Although our univariate tests indicate a rise in lobbying and a fall in lending by banks around the financial crisis, a variety of other factors could influence our results. To control for other factors that might influence both lobbying and lending, we begin our multivariate analysis by estimating the following equation on a pooled sample of firm-year observations in both a linear probability model and a probit regression:

$$Lobby_{i,t} = \beta_1 PostCrisis_t + \boldsymbol{\gamma}' \boldsymbol{X} + \alpha + \epsilon_{i,t}. \quad (1)$$

The dependent variable, *Lobby*, is an indicator variable equal to one if firm *i* has positive lobbying expenditures in year *t* and zero otherwise. The independent variable of interest is the indicator variable *Post Crisis*, which equals one if year *t* is 2009 or later and zero otherwise. We enter several control variables in the matrix **X**, which we defined previously. Clustering robust standard errors by firm and year, we calculate t-statistics, which are enclosed in parentheses.

The results from estimating Eq. (1) are reported in Table 4. Columns [1] and [2] of Table 4 show the results from the linear probability model, while Columns [3] and [4] show the results from the Probit model. The positive and significant coefficient on *Post Crisis* (0.0104, t-stat=3.31) reported in Column [1] confirms the univariate findings presented previously. The specification in Column [2] includes our control variables. As expected, after controlling for other factors, we see reductions in the absolute size of the coefficient on *Post Crisis* and its corresponding significance (0.0049, t-stat=1.74). Those results suggest that the number of banks that lobby increased between 1.04 and 0.50% points from the pre- to post-financial crisis periods. Similar findings are reported in Columns [3] and [4] in the Probit specifications, where we document an increase in likelihood of lobbying by banks after the financial crisis.

We also see indications of a strong negative relation between bank lobbying and lending, other factors held constant. In Column [2], the coefficient on *Loans* is -1.1943 with a t-statistic of -10.24. Similar results are reported for the Probit model in Column [3], where we show a much lower probability of lending by banks for those that lobby versus those that do not (-6.6147, t-stat = -7.52). Therefore, controlling for other factors, banks that lobby tend to lend less and vice versa. That finding is somewhat troubling given the economic benefits associated with bank lending (Schumpeter, 1912; Levine, 1991; King & Levine, 1993; Bencivenga et al., 1995; Demirgüç-Kunt & Maksimovic, 1996; Levine & Zervos, 1998). It appears that to a certain extent, banks substitute lending opportunities to pursue political connections.

Next, we examine continuous measures of lobbying around the financial crisis. More specifically, we estimate specifications of the following equation on a pooled sample of firm-year observations in both a linear model and a Tobit model:

$$LobbyAmt/Assets_{i,t} or LobbyAmt_{i,t} = \beta_1 PostCrisis_t + \boldsymbol{\gamma}' \boldsymbol{X} + \alpha + \epsilon_{i,t}. \quad (2)$$

The dependent variable here is defined either as the ratio of total lobbying expenditures to total assets (*LobbyAmt/Assets*) or raw lobbying expenditures (*LobbyAmt*). Since *LobbyAmt* is zero for the majority of observations, we have censoring concerns. Therefore, we follow

Table 4 – Lobbying activity by banks around the financial crisis. The table reports the results from estimating the following equation using pooled firm-year data. $Lobby_{i,t} = \beta_1 PostCrisis_t + \boldsymbol{\gamma}' \boldsymbol{X} + \alpha + \epsilon_{i,t}$ The dependent variable is Lobby, which is an indicator variable equal to one if firm i has positive lobbying expenditures in year t and zero otherwise. The independent variable of interest is the indicator variable Post Crisis, which equals one if year t is 2009 or later and zero otherwise. We include several control variables in the matrix X. D/E is the ratio of total liabilities to total equity. ROE is the return on equity or the net income scaled by total equity. Loans is the aggregate face value of all outstanding loans scaled in $ millions. Assets is the total assets in $ millions. Deposits is the total amount of deposits in $ millions. Columns [1] and [2] show the results from a linear probability model. Columns [3] and [4] show the results from a Probit model. T-statistics, which are obtained from robust standard errors that account for clustering across by firm and year, are reported in parentheses. *, **, and *** denote statistical significance at the 0.10, 0.05, and the 0.01 levels, respectively

	Linear Probability Model		Probit Model	
	[1]	[2]	[3]	[4]
Post Crisis	0.0104***	0.0049*	0.2201***	0.1270*
	(3.31)	(1.74)	(3.38)	(1.81)
D/E		-0.0001		-0.0025
		(-1.21)		(-1.23)
ROE		-0.0016		-0.0440
		(-1.21)		(-1.23)
Loans		-1.1943***		-6.6147***
		(-10.24)		(-7.52)
Assets		0.3039***		1.1253***
		(4.98)		(4.99)
Deposits		0.7427***		5.1379***
		(4.43)		(5.83)
Constant	0.0147***	0.0123***	-2.1771***	-2.2358***
	(8.31)	(6.96)	(-45.78)	(-41.28)
Adjusted R^2	0.0014	0.1215		
QIC			1,562.36	1,340.67
Robust SEs	Yes	Yes	Yes	Yes
N	8,229	8,229	8,229	8,229

Wooldridge (2010) and estimate a Tobit model for corner solution responses. Once again, our independent variable of interest is *Post Crisis*, which is equal to one for year 2009 or later and zero otherwise. The remaining control variables in matrix $\boldsymbol{X}$ have been defined previously. The results from estimating Eq. (2) are reported in Table 5 with t-statistics in parentheses obtained from robust standard errors clustered at the firm and year levels.

Once again, the estimated coefficient on *Post Crisis* is positive and statistically significant, indicating that lobbying activity increased for our sample banks after the financial crisis. In contrast to Table 4, we do not see a reduction in coefficient size nor its significance level on the *Post Crisis* indicator variable after we enter the additional control variables. In economic terms, the results suggest that lobbying-to-assets increases between 533% and 567% after the financial crisis. We find qualitatively similar results in the Tobit regressions, when total lobbying expenditures by banks rose around the financial crisis. We also continue to find a negative relation between lobbying activity and lending. Again, it appears that banks became more active lobbyists after the crisis at the expense of additional lending.

3.3 Bank lending after the financial crisis

Our next set of multivariate tests examine the relation between lending activity and lobbying activity during the post-crisis period. In particular, we begin by estimating specifications of the following regression equation:

$$LendingActivity_{i,t} = \beta_1 LobbyingActivity_{i,t} + \boldsymbol{\gamma}'\boldsymbol{X} + \tau + \alpha + \epsilon_{i,t}, \tag{3}$$

where the dependent variable is *Lending Activity*, which we define in two ways. *Loans/Assets* is the aggregate face value of all outstanding loans to total assets; *% Loan Growth* is defined as the year-over-year percent change in aggregate loans held on a bank's balance sheet. The independent variable of interest is *Lobbying Activity*, which also is defined in two ways. *Lobby* is equal to one if firm *i* has positive lobbying expenditures in year *t* and zero otherwise. *LobbyAmt/Assets* is the ratio of lobbying expenditures per year scaled by total assets. The remaining control variables in matrix $\boldsymbol{X}$ are the same as before. We also enter year fixed effects (τ) in each specification. We report *t*-statistics calculated from robust standard errors that account for clustering by firm and year in parentheses.

We find a strong negative relation between lending and lobbying activities. The coefficient on *Lobby* is -0.1428 (t-statistic = -8.75) in Column [1], which regresses the *Loans/Asset* ratio on our indicator variable *Lobby*. In Column [2], when we add control variables to the specification, the coefficient on *Lobby* is -0.0818 with a t-statistic of -6.52. Both coefficients are statistically significant at the 0.01 level. In economic terms, firms that lobby have an 8–14% lower *Loans/Asset* ratio on average. Results using *LobbyAmt/Assets* as our proxy for lobbying activity are even stronger and are reported in Columns [3] and [4]. Since our dependent and independent variables are scaled by assets, we can interpret the coefficients on *LobbyAmt/Assets* as the percentage change in loans relative to a one-standard deviation change in lobbying. Doing so, we find loans to be almost 30% lower for firms with more lobbying activity. Columns [5] through [8] enter *% Loan Growth* as the dependent variable. Similar to the previous specifications, we find stronger results for our continuous variable of *LobbyAmt/Assets*, which are reported in Columns [7] and [8]. The coefficients on *LobbyAmt/Assets* range from − 13.2824 (t-statistic = -4.78) to -13.7254 (t-statistic = -4.58).

Table 5 – Lobbying expenditures by banks around the financial crisis. The table reports the results from estimating specifications of the following equation using pooled firm-year data. $LobbyAmt/Assets_{i,t} or LobbyAmt_{i,t} = \beta_1 PostCrisis_t + \boldsymbol{\gamma}' \boldsymbol{X} + \alpha + \epsilon_{i,t}$ The dependent variable is one of two variables: *LobbyAmt/Assets* or *LobbyAmt*. *LobbyAmt/Assets* is the ratio of total lobbying expenditures to total assets. *LobbyAmt* is the total dollar amount of lobbying expenditures. The independent variable of interest is the indicator variable *Post Crisis*, which equals one if year *t* is 2009 or later and zero otherwise. We include several control variables in the matrix X. *D/E* is the ratio of total liabilities to total equity. *ROE* is the return on equity or the net income scaled by total equity. *Loans* is the aggregate face value of all outstanding loans scaled in $ millions. *Assets* is the total assets in $ millions. *Deposits* is the total amount of deposits in $ millions. Columns [1] and [2] show the results from a linear regression model. Columns [3] and [4] show the results from a Tobit censored model. T-statistics, which are obtained from robust standard errors that account for clustering across by firm and year, are reported in parentheses. *, **, and *** denote statistical significance at the 0.10, 0.05, and the 0.01 levels, respectively.

	OLS Model		*Tobit Model*	
	LobbyAmt/Assets		*LobbyAmt*	
	[1]	[2]	[3]	[4]
Post Crisis	0.000017***	0.000016**	1.1782***	0.4774***
	(2.77)	(2.49)	(4.62)	(2.79)
D/E		0.000000		-0.0155*
		(0.89)		(-1.72)
ROE		0.000003		-0.2771
		(0.90)		(-1.33)
Loans		-0.000206***		-15.1413***
		(-5.34)		(-7.08)
Assets		0.000020		2.2231***
		(1.49)		(4.76)
Deposits		0.000182***		12.6262***
		(4.77)		(7.37)
Constant	0.000003***	0.000001	-7.9590***	-4.9678***
	(4.46)	(0.22)	(-12.80)	(-12.93)
Adjusted R^2	0.0012	0.0021		
Sigma			3.4322***	2.1171***
N	8,229	8,229	8,229	8,229

Table 6 – Total lending activity by banks after the financial crisis. The table reports the results from estimating the following equation using pooled firm-year data during the post-crisis period, which extends from 2009 to 2016. $LendingActivity_{i,t} = \beta_1 LobbyingActivity_{i,t} + \boldsymbol{\gamma}' \boldsymbol{X} + \tau + \alpha + \epsilon_{i,t}$ The dependent variable, Lending Activity, is set to one of two variables: Loans/Assets or % Loan Growth. Loans/Assets is the aggregate face value of all outstanding loans to total assets. % Loan Growth is defined as the year-over-year percent change in aggregate loans held on a bank's balance sheet. The independent variable of interest is Lobbying Activity, which is defined in two ways. Lobby is equal to one if firm i has positive lobbying expenditures in year t and zero otherwise. LobbyAmt/Assets is the ratio of lobbying expenditures in each year scaled by total assets. We include several control variables in the matrix X. D/E is the ratio of total liabilities to total equity. ROE is the return on equity or the net income scaled by total equity. Assets is the total assets in $ millions. Deposits is the total amount of deposits in $ millions. We also include year fixed effects () in each specification. T-statistics, which are obtained from robust standard errors that account for clustering across firm and year, are reported in parentheses. *, **, and *** denote statistical significance at the 0.10, 0.05, and the 0.01 levels, respectively

	Loans/Assets				*% Loan Growth*			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Lobby	-0.1428***	-0.0818***			-0.0344**	-0.0242		
	(-8.75)	(-6.52)			(-2.26)	(-1.52)		
LobbyAmt/Assets			-29.5400***	-28.2452***			-13.7254***	-13.2824***
			(-6.31)	(-7.12)			(-4.58)	(-4.78)
Adjusted R^2	0.0469	0.1118	0.0239	0.1088	0.0074	0.0078	0.0073	0.0078
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Robust SEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	3,592	3,592	3,592	3,592	3,592	3,592	3,592	3,592

However, we still find negative coefficients and some statistical significance for our indicator variable *Lobby*. Columns [5] and [6] have coefficients of -0.0344 (t-statistic = -2.26) and −0.0242 (t-statistic = -1.52), respectively.[6]

Given that one of the main goals of the Fed's actions during and after the financial crisis was to shore up the housing market, our next set of tests examine the relation between lobbying and mortgage lending activities. We re-estimate Eq. (3) but adopt one of two measures of *Mortgage Lending Activity* as our dependent variable instead of more general *Lending Activity*. The results of that analysis are reported in Table 7. We note that our sample in Table 7 is limited to firms that engage in mortgage lending, which reduces our sample size from 3,592 bank-year observations to 368.

The first real-estate-based measure, which we enter as the dependent variable in Columns [1] through [4], is the *Mortgage Loans-to-Assets Ratio*, or the dollar amount of mortgage loans divided by the total bank assets. In Columns [1] and [2], we adopt the indicator variable *Lobby* as our proxy for lobbying; once again, we find a negative and significant relation between lobbying and mortgage lending. The coefficient on *Lobby* in the simple regression that controls for time fixed effects and robust standard errors is -0.0368 with a t-statistic of -2.11. Column [2] reports the results when our other control variables are held constant; the similar coefficient of -0.0330 (t-statistic = -2.12) demonstrates the robustness of the result. Both of the coefficients on *Lobby* are significant at the 0.05 level. Columns [3] and [4] report the results when *LobbyAmt/Assets* is our independent variable of interest. In contrast to Table 6, where results are consistently stronger when *LobbyAmt/Assets* is entered, we do not find coefficients that are significantly different from zero. Since the coefficients actually are similar to those reported in Table 6, and still quite large −28.3284 and −41.3193, respectively, the lack of significance could be a power issue with the smaller sample size.

Our second real-estate-based measure, which we adopt as the dependent variable in Columns [5] through [8], is *% MortLoan Growth*, which is defined as the year-over-year percentage change in aggregate loans secured by real estate held on a bank's balance sheet. Columns [5] and [6] report results for *Lobby* and Columns [7] and [8] report results for *LobbyAmt/Assets*. In contrast to the specifications in which *MortLoans/Assets Ratio* is the dependent variable, when *% MortLoan Growth* is on the left-hand side we see an insignificant relation for *Lobby* and a significant relation for *LobbyAmt/Assets*. Given the somewhat inconsistent nature of the results when examining the relation between mortgage lending and lobbying, we conclude that the strong relation previously reported between lobbying and lending is not simply an artifact of mortgage lending, but must exist in other types of lending as well.

To examine further whether a specific type of lending is driving the strong negative relation between lending and lobbying, we focus on commercial lending. We once again re-estimate Eq. (3) but enter one of two measures of commercial lending as the dependent variable. The results of this analysis are reported in Table 8. In Columns [1] through [4], we define the dependent variable as the ratio of commercial loans to total assets (*CommLoans/*

[6] It is possible that the reduction in banks' lending activity is that the Federal Reserve paid interest on bank reserves. In fact, Rezende et al., (2019) suggest that the interest income on reserves affects loan volumes because the Fed's interest rate raises other shorter-term rates, thus slowing credit growth. In a series of unreported tests, we obtain average interest rates on bank reserves from the St. Louis Federal Reserve bank and replicate our analysis in Table 6. Our results are nearly identical when controlling for that interest rate, which suggests that while paid interest on bank reserves might affect bank lending activity during the crisis, controlling for this it did not affect the association between lending activity and lobbying activity during the crisis.

Table 7 – Mortgage lending activity by banks after the financial crisis. The table reports the results from estimating the following equation using pooled firm-year data during the post-crisis period, which extends from 2009 to 2016. $MortgageLendingActivity_{i,t} = \beta_1 LobbyingActivity_{i,t} + \boldsymbol{\gamma}'\boldsymbol{X} + \tau + \alpha + \epsilon_{i,t}$ The dependent variable is Mortgage Lending Activity, which is defined in two ways. MortLoans/Assets is the ratio of total mortgage-related loans to total assets. % MortLoan Growth is the year-over-year percent change in aggregate loans secured by real estate held on a bank's balance sheet. We note that mortgage loan data are not populated for each bank in our sample so the total number of observations used in the analysis is markedly lower than in previous tables. The independent variable of interest is Lobbying Activity, which is defined in two ways. Lobby is equal to one if firm i has positive lobbying expenditures in year t and zero otherwise. LobbyAmt/Assets is the ratio of lobbying expenditures in each year scaled by total assets. We include several control variables in the matrix X. D/E is the ratio of total liabilities to total equity. ROE is the return on equity or the net income scaled by total equity. Assets is the total assets in $ millions. Deposits is the total amount of deposits in $ millions. We also include year fixed effects () in each specification. T-statistics, which are obtained from robust standard errors that account for clustering across firm and year, are reported in parentheses. *, **, and *** denote statistical significance at the 0.10, 0.05, and the 0.01 levels, respectively

	MortLoans/Assets				*% MortLoan Growth*			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Lobby	-0.0368**	-0.0330**			-0.0117	0.0009		
	(-2.11)	(-2.12)			(-0.46)	(-0.04)		
LobbyAmt/Assets			-28.3284	-41.3193			-83.5632***	-62.7968**
			(-0.70)	(-1.09)			(-2.82)	(-2.18)
Adjusted R^2	0.0159	0.1403	0.0065	0.1350	0.0534	0.1004	0.0604	0.1046
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Robust SEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	368	368	368	368	368	368	368	368

Assets). In Columns [5] through [8], the dependent variable is the year-over-year growth in commercial loans (*% CommLoan Growth*). We note that the sample is reduced even further by this analysis, from 3,592 bank-year observations to 196.

Once again, we see a strong negative relation between lending and lobbying. All of the coefficients on the lobbying variables in Columns [1] through [4] are significant at the 0.01 level. That strong statistical relation materializes even though the number of observations is only 5% of the original sample. However, we do not find a significant relation between our lobbying variables and *% CommLoan Growth*. None of the coefficients on lobbying variables in Columns [5] through [8] are significantly different from zero. Despite the much smaller sample, our initial results do not seem to be driven by commercial lending, although we do find a very strong relation between firms that lobby and the amounts of commercial lending initiated by banks *after* the financial crisis. Combined, Tables 7 and 8 seem to suggest that the inverse association between lending activity and lobbying activity by banks is not driven by mortgage lending or commercial lending.

4 Conclusion

Despite massive government intervention into the banking sector during the 2007–2008 global financial crisis, lending remained constrained (Ivashina & Scharfstein, 2010; De Haas & Van Horen, 2013). In this study, we propose that lobbying expenditures by banks might crowd out lending activity – particularly during times of crisis. To examine the relation between lending activity and political activity, we rely on a broad sample of 621 US banks from 2000 to 2016. Our results show that during the post-crisis period (2009 to 2016), relative to the pre-crisis period (2000 to 2008), the number of banks lobbying actively during a particular year rose by nearly 71% and, moreover, banks' total spending on lobbying activity nearly doubled. Furthermore, lobbying expenditures scaled by total assets increased by nearly 567% during the post-crisis period. At the same time, the loan-to-asset ratio fell significantly by 2.7% for the average bank in our sample. Thus, our results suggest that while lending by banks declined significantly around the financial crisis, lobbying increased dramatically. These results are consistent with the evidence that banks flooded Capitol Hill with lobbyists to help shape the sweeping regulatory changes associated with the Dodd-Frank Act (see, e.g., Ban & You 2019; Spitler, 2020).

Next, we focus our attention on the post-crisis period and find a more general negative relation between lending activity and lobbying activity. During that period, the average bank that lobbied had a loan-to-assets ratio 8.18% lower than banks that did not lobby. Similar results are found when we examine loan growth instead of loan-to-asset ratios. We also find that the ratio of lobbying expenditures to assets reduced both loan-to-assets and loan growth significantly. In additional tests, we examine both mortgage lending and commercial lending separately, finding that although both types of lending are influenced when resources are diverted to lobbying, neither drives the broader relation between lobbying and lending. Together, our findings support our hypothesis suggesting that lobbying and lending are imperfect substitutes, thereby at least partially explaining the reduction in lending by banks surrounding the financial crisis.

Our findings seem to suggest that lobbying activity might crowd out lending activity, which provides an important contribution to the research discussing and attempting to

Table 8 – Commercial lending activity by banks after the financial crisis. The table reports the results from estimating the following equation using pooled firm-year data during the post-crisis period, which extends from 2009 to 2016. $CommercialLendingActivity_{i,t} = \beta_1 LobbyingActivity_{i,t} + \boldsymbol{\gamma}'\boldsymbol{X} + \tau + \alpha + \epsilon_{i,t}$ The dependent variable is Commercial Lending Activity, which is defined in two ways. CommLoans/Assets is the ratio of total commercial loans to total assets. % CommLoan Growth is defined as the year-over-year percent change in aggregate loans made to commercial entities held on a bank's balance sheet. We note that commercial loan data are not populated for each bank in our sample so the total number of observations used in the analysis is markedly lower than in previous tables. The independent variable of interest is Lobbying Activity, which is defined in two ways. Lobby is equal to one if firm i has positive lobbying expenditures in year t and zero otherwise. LobbyAmt/Assets is the ratio of lobbying expenditures in each year scaled by total assets. We include several control variables in the matrix X. D/E is the ratio of total liabilities to total equity. ROE is the return on equity or the net income scaled by total equity. Assets is the total assets in $ millions. Deposits is the total amount of deposits in $ millions. We also include year fixed effects () in each specification. T-statistics, which are obtained from robust standard errors that account for clustering across firm and year, are reported in parentheses. *, **, and *** denote statistical significance at the 0.10, 0.05, and the 0.01 levels, respectively

	CommLoans/Assets				*% CommLoan Growth*			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Lobby	-0.0791***	-0.0413***			0.0573	0.0759		
	(-4.01)	(-2.77)			(-0.87)	(-0.96)		
LobbyAmt/Assets			-157.7122***	-86.7834***			150.8655	172.9050
			(-2.75)	(-2.99)			(-0.97)	(-1.06)
Adjusted R^2	0.0469	0.1266	0.0273	0.1241	0.2021	0.2130	0.2016	0.2115
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Robust SEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	196	196	196	196	196	196	196	196

explain lower bank lending activity during and after a financial crisis. During the recent global crisis, much was said by policymakers about the moral hazard associated with bail-outs, which can create perverse incentives for additional risk-taking. However, bailing out the most politically connected firms might create incentives for non-connected banks to become politically connected and potentially misallocate their scarce capital away from lending opportunities.

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