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Winning connections? Special interests and the sale of failed banks

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ABSTRACT

We study how banks' special interests affect the resolution of failed banks. Using a sample of FDIC auctions between 2007 and 2016, we find that bidding banks that lobby regulators have a higher probability of winning an auction. However, the FDIC incurs larger costs in such auctions, amounting to 24.8 percent of the total resolution losses. We also show that lobbying winners match less well with acquired banks and display worse post-acquisition performance than their non-lobbying counterparts, suggesting that lobbying interferes with an efficient allocation of failed banks. Our results provide new insights into the bank resolution process and the role of special interests.

1. Introduction

Banks devote significant resources to lobby regulators (Admati and Hellwig, 2013). However, little is known about how bank lobbying affects regulatory decisions. On the one hand, banks may employ lobbyists or rely on connected board members to introduce their own interest into regulatory decisions, potentially impairing the interests of the general public. On the other hand, lobbying may convey important information to regulators and provide them with relevant expertise, thus leading to better outcomes overall. The welfare implications of these two channels are diametrically opposite. Empirical work on these channels of bank lobbying is scarce (Bombardini and Trebbi, 2020), leaving an important policy debate unaided by evidence.

This paper examines the consequences of bank lobbying using the sale of failed banks as a laboratory. The federal deposit insurance corporation (FDIC) routinely auctions failed banks to interested bidders; it has acted as receiver for several thousand of failed banks since 1934. The sale of failed banks is a critical part of the resolution process and has elements of the market for corporate control. Banks with inefficient operations should be closed and sold to efficient banks, improving the allocation of resources in the financial system, and likely also its stability.

Specifically, an efficient resolution process should result in ownership being transferred to bidders that are best equipped to incorporate a certain failed bank and have the highest valuation for it. An additional consideration in the context of FDIC auctions is that the sale should result in low resolution costs as stipulated by the "least-cost" test that requires the FDIC to seek solutions that minimize the burden on the deposit insurance fund (DIF). In this context, lobbying may lead to a more efficient and less costly resolution by providing the FDIC with useful private information (for example, signaling a bidder's ability to acquire a specific bank), but may also distort the allocation by introducing private interests into the decision-making process.[1]

We present a simple model of how lobbying may affect auction outcomes. We first consider that lobbying results in a bidding bank obtaining insights into the auction competition, thus gaining an advantage over other bidders (*rent-seeking* explanation).[2] We

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[1] In its task of resolving bank failures, the FDIC is empowered to act independently, without interference from Congress, other agencies or courts, and to use its own discretion. Morrison (2010) raises potential concerns about transparency in the resolution process.

[2] Typically, the FDIC does a roadshow before it decides on the opening offer and may be persuaded to put a bank in its list—it maintains "preference lists"—as well as modify the opening offer based on the feedback it receives from prospective buyers. This means that banks' special interests may develop a comparative advantage on how to lead the opening offer in a certain direction and/or prepare a bid that looks attractive relative to this starting point.

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show that this enhances the bank's likelihood of winning the auction, while also lowering the auction premium (the amount the winner pays relative to the covered bidder). Crucially though, it lowers resolution efficiency as the bank's advantage sometimes results in getting allocated the failed bank even if another bidder has a higher valuation for it. This distinguishes it from an *informational* explanation, under which a lobbying bank may also be more likely to win the auction but which results in a better matching at the auction. We also use the model to examine other explanations through which lobbying may relate to auction outcomes, and show that they produce different predictions (in terms of likelihood of winning, auction premium, and efficiency) than the rent-seeking and informational channels.

We then examine the empirical relationship between lobbying and the three auction outcomes. Studying failed-bank auctions during the wave of bank failures following the 2008–09 financial crisis,[3] we first find that bidding banks engaged in lobbying activities are indeed more likely to win an auction. Bidders lobbying banking regulators and, in particular, the FDIC increase their probability of winning an auction by 18.5 percentage points. We also find that bidders having board members who currently serve (or have previously served) on the board of advisory committees or councils of banking regulators have a higher probability of winning an auction.

Next, we study whether lobbying affects the auction premium. In a failed-bank auction, bidders mainly compete in terms of the *net discount* at which they offer to take over the failed bank. We compare the net discount of the winning bank with the one offered by the covered bidder. We find the net discount differential to be significantly reduced when acquirers lobby. The implied cost to the DIF is substantial. At 24.8 percent of the total resolution losses, it amounts to a total transfer from the DIF to lobbying acquirers of $10.7 billion.

Last, we examine the quality of the match resulting from an auction, as a measure of auction efficiency. We find that lobbying acquirers are geographically more distant, more different in their assets, and less driven by the desire to consolidate markets than non-lobbying acquirers. This suggests that auctions won by lobbying banks produce less efficient outcomes (as judged at the time of the auction). This result is confirmed by studying outcomes post-auction. In a difference-in-differences setting, we first provide evidence consistent with the expectation that acquisition of a failed bank generally improves efficiency as measured by a higher return on assets and a lower cost-to-asset ratio following the acquisition. However, we find that efficiency improves significantly less at lobbying acquirers, relative to their non-lobbying counterparts.

Taken together, our empirical results suggest that banks' special interests (as represented by lobbyists or connected board members) reduce the allocational efficiency of failed-bank auctions, consistent with the rent-seeking channel. In the context of bank resolution, lobbying may thus have costs by providing an opening for special interests to influence the process. This, by no means, implies that allowing regulators to interact with lobbyists and connected board members and exercising discretion in decision-making is undesirable—the ability to incorporate private information and to react to new circumstances in a flexible manner has important benefits, in particular for financial stability. Rather, the resolution process should be designed to mitigate these costs by ensuring proper checks and balances. This includes establishing strong accountability mechanisms and a high level of transparency, allowing independent judgements by third parties on the fairness of the process (Igan and Lambert, 2019). Our findings are thus relevant not only for the United States—where a framework for resolution of smaller banks is relatively well established and that for resolution of systemically important financial institutions has recently been reformed—but also for other jurisdictions (e.g., the European Union) where the implementation of new resolution frameworks is in progress (Philippon and Salord, 2017).

Our paper is related to several strands of literature. First, the literature on the resolution of failed banks, originating in the savings and loan (S&L) crisis of the 1980s. James and Wier (1987) study how the setup of the FDIC auction and competition affect the price at which the failed bank's assets are sold, and report evidence of wealth transfers to winning bidders. Our findings suggest that the magnitude of such welfare transfers is related to bidders' lobbying activities. In related work, Giliberto and Varaiya (1989) find that winning bids tend to increase with the number of competitors, consistent with the winner's curse hypothesis. James (1991) shows that losses—measured as the difference between the book value of assets and the recovery value net of direct expenses related to the failure—are substantial, averaging 30 percent of the failed bank assets. We observe losses in similar magnitude in our sample.

Another set of studies followed the 2008–09 financial crisis. Cole and White (2017) examine the timing of FDIC receivership and estimate the costs of forbearance to be almost 40 percent of the FDIC's estimated costs of closure.[4] Closer to our line of inquiry, Cowan and Salotti (2015) and Vij (2021) show that winning bidders experience positive abnormal returns. Granja (2013) finds that regulators incur lower resolution costs when disclosure requirements for failed bank are more comprehensive, suggesting that such requirements help mitigate information asymmetries inherent to the auction process. Granja et al. (2017) document that the wedge between potential acquirers' willingness to pay—as captured by their proximity with the failed bank in terms of location and lines of business—and ability to pay—as proxied by their capitalization—distorts the allocation of failed banks. The authors conclude that frictions in the sale of failed banks are significant. Our work shows that special interests are another source of distortion in the allocation of failed banks. Therefore, our work is also related to the corporate finance literature on bankruptcy auctions (Stromberg, 2000; Thorburn 2000; Eckbo and Thorburn, 2008).

We also contribute to the literature on the political economy of financial crises (for a survey, see Lambert and Volpin, 2018). Mian et al. (2013) show that both special and constituent interests influenced public policy, leading to higher subprime mortgage lending in the years prior to the crisis. Igan and Mishra (2014) document that special interests of the banking industry swayed legislators' position toward deregulation between 1999 and 2006. Mian et al. (2010) find that special interest campaign contributions from the financial services industry were positively associated to votes in favor of the Emergency Economic Stabilization Act of 2008—a bill that transferred wealth from taxpayers to the financial services industry (Veronesi and Zingales, 2010). A few studies focus, like we do, on bank lobbying. These studies provide evidence that lobbying banks were more likely to be bailed out (Duchin and Sosyura, 2012) and that they were less likely to face supervisory sanctions (Lambert, 2019), even though they took on more excessive risks in the run-up to the financial crisis (Igan et al., 2012).

[3] During 2007–16 the FDIC auctioned off 484 banks (including WaMu) with a combined total balance sheet size of about $643 billion, equal to around 5 percent of the size of the FDIC-insured banks in 2010.

[4] Kroszner and Strahan (1996) investigate the role of politics and the incentives of regulators to intervene in failing banks' operations, and provide compelling evidence that regulators deferred the realization of costs in failing S&L associations. Kane (1989) analyzes the conflicts between regulators, politicians, and taxpayers in resolving troubled financial institutions. Also in the United States, Liu and Ngo (2014) and Kang, Lowery, and Wardlaw (2015) show that political concerns play a significant role in the timing of bank failures, particularly in the 1980s and 1990s. Brown and Dinc (2005) find consistent evidence from a sample of large banks in 21 emerging countries, while Imai (2009) examines the case of Japan in 1999–2002. Our paper looks at the next stage in bank distress and provides evidence of special interest politics being at play in the failed-bank resolution process.

Our results suggest that lobbying might not only have an effect prior to bank failure but also affects outcomes post failure. In that sense, our analysis relates to the literature on the optimal resolution of bank failures (Acharya and Yorulmazer, 2008; Colliard and Gromb, 2018; Walther and White, 2020).

The rest of the paper is organized as follows. Section 2 gives information on the institutional background and the data used in the analysis. Section 3 provides the analytical framework for how lobbying affects auction outcomes. Section 4 presents the results of the empirical analysis on bidder lobbying and auction outcomes. Section 5 concludes.

2. Institutional background and data

2.1. An overview of the FDIC resolution and receivership process

The FDIC, together with the other federal agencies—the Federal Reserve (Fed) and the Office of the Comptroller of the Currency (OCC)—and state regulators, supervises banks, but also has the authority to resolve failing or failed institutions. When a bank is about to fail, the FDIC initiates its resolution process, which formally begins when it receives a notification (the failing bank letter) from the institution's primary regulator. The main reasons for a failure are critical undercapitalization, insolvency, deposit runs, and implication in a severe case of fraud. Upon receiving the notification, the FDIC contacts the management of the failing institution and arranges for specialists to go to the bank to compile information in preparation for the closing. During this on-site visit, the specialists prepare an information package for potential bidders, perform an asset valuation review (subsequently used to set a reservation value on the sale), estimate the amount of uninsured deposits, determine the resolution method, and plan for the closing and receivership (FDIC, 2014, chapter 3).

Using the information collected on site, the FDIC chooses the most appropriate resolution method to be offered. During the recent crisis, and for most of the FDIC's history, the purchase and assumption (P&A) transaction has been the preferred resolution method—i.e., in more than 90 percent of cases in our sample period. In a P&A transaction, a healthy financial institution agrees to purchase some or all of the assets of the failing depository institution and assumes some or all of the liabilities, including all insured deposits. This is performed through a process that resembles a *first-price sealed bid auction*. Other methods, including deposit payoffs and purchase and assumption of the insured deposits only (PIs), are usually considered by the FDIC when the auction does not attract any interested bidder or when bids revealed to be below its reservation value.

After gathering the necessary information and determining the resolution method, the FDIC starts to confidentially market the failing institution to a group of approved potential bidders. This initial contact does not contain any identifiable information regarding the distressed institution. Then, a virtual data room—access to which is conditional on signing a confidentiality agreement—is set up to provide potential bidders with details of the failing institution (loan review, schedules representing the value of the items on the balance sheet, operational information, legal documents, bidding procedure). If feasible, prospective bidders are also given the opportunity to review this information as part of their on-site due diligence. The FDIC is not required to reveal whom it invites for the bidding.

After having completed due diligence, bidders submit their bids to the FDIC, generally one to two weeks before the scheduled closing. The bidders can place one or more sealed bids for the failed bank. A bid consists of, at least, two pricing terms: The first is the franchise value for the deposits (the premium) and the second is the amount for the assets. A bid may also contain a loss-sharing agreement with the FDIC over the subsequent losses on the assets transferred in the resolution process.[5] The FDIC uses a proprietary model to evaluate submitted bids and then selects the one (given the reservation value set by the FDIC) that is the least-costly for the DIF. The FDIC is, however, not required to disclose the specifics of these tests and may choose a bid without the least-cost test, taking into account other (primarily systemic) considerations (IMF, 2015). Arguably, in these circumstances private information is more valuable and public interest appraisal is more complicated, and consequently the FDIC exerts more discretionary powers.

Once the FDIC board of directors approves the resolution transaction, the final step is the closing of the bank, and the appointing of the FDIC as receiver. Immediately after closure, the FDIC informs the public of the institution's closing, and announces the winning bidder together with an estimate of the cost of resolving the failed institution. The FDIC as receiver is responsible for settling the affairs of the failed institution, which comprises transferring to the acquirer the assets purchased and deposits assumed, and to the extent possible, satisfying the creditor claims against the receivership. An insured depository institution is generally placed in receivership within 90 days; this does not include the settlement timeframes which can take much longer (Hynes and Walt, 2010). Despite the expedient and orderly resolution of the vast majority of failed banks, the FDIC took a loss on most failures since the beginning of the crisis; the cumulated loss so far adds up to $72 billion.

To fulfill this mission as receiver, the U.S. Congress has entrusted the FDIC with complete responsibility. The FDIC is not subject to the direction or supervision of any other executive agency, state, or court in the operation of the receivership, which allows the FDIC to use its discretion in determining the most effective resolution of failed institutions (FDIC, 2014, chapter 5).

2.2. Bank lobbying in the United States

Lobbying is pervasive in the American democratic process (Drutman, 2015) and, in particular, constitutes the bulk of politically-targeted spending aimed at influencing policies and regulatory decisions (Kerr et al., 2014). Lobbyists attempt to sway the influence of regulators and politicians on specific issues, using a combination of contacts, expertise, persuasion and public relations skills. Banking interests are particularly well represented by lobbyists. In 2009, at the height of the crisis, commercial banks spent approximately $50 million in hiring lobbyists, which is five times the money they spent on campaign contributions over the same year. Part of this money was spent to lobby particular agencies. For example, lobbyists specifically targeted the FDIC 120 times in 2009.[6]

Legally, a *lobbying contact* is defined as "any oral or written communication (including an electronic communication) to a covered executive branch official or a covered legislative branch official that is made on behalf of a client with regard to (i) the formulation, modification, or adoption of Federal legislation (including legislative proposals); (ii) the formulation, modification, or adoption of a Federal rule, regulation, Executive order, or any other program, policy, or position of the United States Government; (iii) the administration or execution of a Federal program or policy (including the negotiation, award, or administration of a Federal contract, grant, loan, permit, or license); or (iv) the nomination or confirmation of a person for a position subject to confirmation by the Senate" (Lobbying Disclosure Act [2 U.S.C. 1602]). The definition under

[5] Under a loss-sharing agreement, the FDIC agrees to absorb a portion of the loss on a specified pool of assets (i.e., commercial assets and residential mortgages).

[6] Sourced from www.opensecrets.org (last accessed: August 2018).

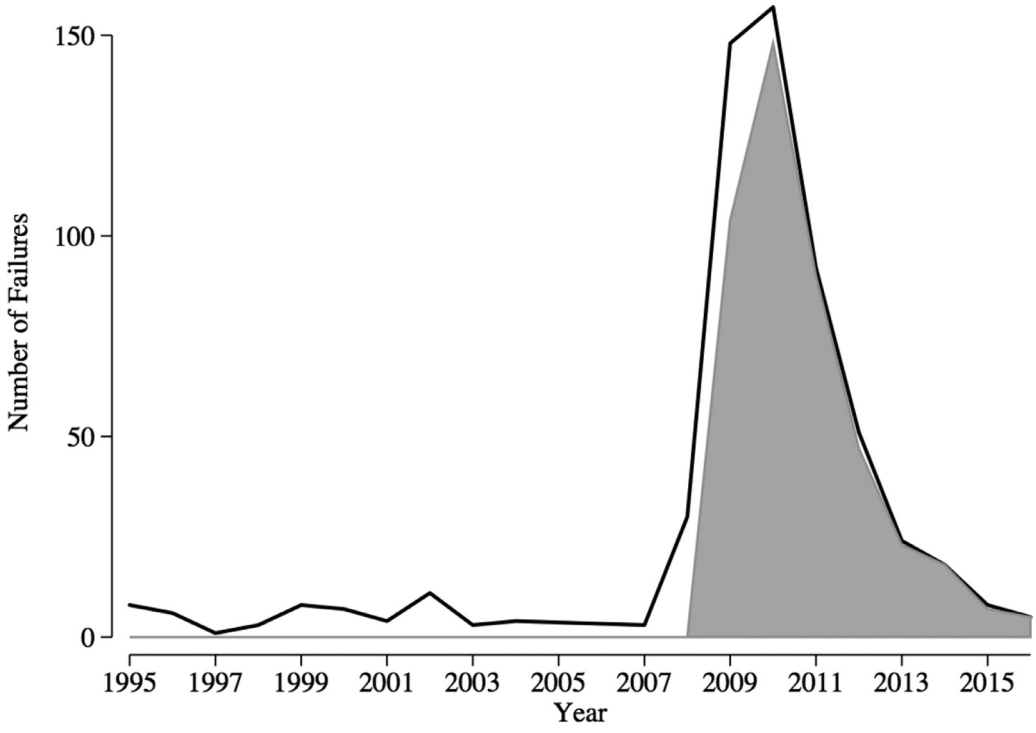

Fig. 1. Number of Bank Failures.
This figure plots the time series of all bank failures between 1995 and 2016. Data are obtained from the FDIC website: www.fdic.gov/bank/individual/failed/banklist.html. The solid line presents the number of bank failures in each year, excluding assistance transactions. The shaded area presents the sample used in the main analysis.

(iii) is, in our analysis, the type of activity we are mostly interested in.

The Lobbying Disclosure Act of 1995 (LDA), by bringing a certain level of accountability to federal lobbying practices, imposes lobbyists to register and report periodically information on their activities to the Senate Office of Public Records (SOPR). The information that lobbyists have to disclose includes the amount of money they receive by their clients as well as the issues and the officials (at the agency level) targeted. In other words, one can observe which bank hired which lobbyist to contact which agency, allowing a detailed examination of whether bank lobbying activities have a bearing on failed-bank auction outcomes.

Although hiring lobbyists is one of the main dimensions of the influence vector used by banks, other dimensions can also be effective. Notably, connections via board memberships in relevant agencies is another important channel through which banks can reach out to banking regulators and exert influence (Adams, 2017; Lim et al., 2019).

2.3. Sample composition, data sources, and key variables

Our empirical analysis combines data on each government-assisted deal from SNL Financial and publicly available information released by the FDIC on these deals.[7] We obtain from these sources information on the identities of failed banks and acquirers, bidding information,[8] P&A terms, estimated costs of resolution, and, if available, the identities of other bidders. The shaded area of Fig. 1 shows the time distribution of all failed banks in our sample, while Table 1 presents the construction of the auction sample. From 2007 to 2016, our period of interest, the FDIC acted as the receiver for 535 commercial and savings banks and chose the P&A transaction as the resolution method in 483 of cases. We drop from our analysis 39 cases without auction disclosures occurring prior to May 2009 as well as the P&A transactions of Home National Bank and Doral Bank, which involved two acquirers.[9] We exclude assistance transactions (13 cases), direct payoffs (26), and PIs (13), because there are no auction data available. We end up with a sample composed of 442 P&A transactions, accounting for $279.4 billion of aggregate total assets. Table 1 also reports that 295 of the FDIC-run auctions attract bids from at least two eligible institutions, out of which 131 records four or more bidders.

We obtain financial characteristics of both failed and bidding banks from the Quarterly Report on Condition and Income (or Call Report) filings. These Call Reports provide detailed information on the size, capital structure, and asset composition for each commercial and savings bank, while SNL Financial provides further information on bank characteristics and an estimation of banks' CAMELS rating. Moreover, we compute various measures of bidders' proximity to failed banks using information from the Summary of Deposits database provided by the FDIC.

We use lobbying disclosure filings of SOPR to identify banks that are engaged in lobbying. The version of the data used comes from the Center for Responsive Politics (CRP) www.opensecrets.org. We merge CRP data with the SNL Financial database using a name-matching procedure (i.e., an algorithm that finds common words) enabling us to generate a list of potential matches between the names in CRP and SNL Financial. We then manually check whether the pairs of name strings are actual matches with current and his-

[7] FDIC data are retrieved from www.fdic.gov/bank/individual/failed/banklist.html (last accessed: July 2018).

[8] The FDIC discloses the list of all bidders, but their bidding information is only available for the winning bidder and the cover bidder (i.e., the second-best bidder).

[9] Before May 2009 little was known about other bidders and their bidding prices. From November 2009, the FDIC, in compliance with the Freedom of Information Act (FOIA), began to disclose all the bids in auctions subsequent to May 2009. The information disclosed by the FDIC increased due to the change in the FDIC's internal policy under public pressure. Before the change, one needed to file a FOIA request to obtain such information.

Table 1
Auction Sample Construction. This table presents the construction of the auction sample used in the analysis. The main sample starts with all failed banks in the U.S. between 2007 and 2016, excluding 13 assistance transactions and the outlier WaMu Bank. Assistance transactions via either open bank assistance or providing assistance to the acquirer are rarely used after 1992. Such methods were only used in 5 failed banks belonging to Citigroup on November 23, 2008, and 8 failed banks belonging to Bank of America on January 16, 2009. Payoffs are failed bank resolutions where there is no acquirer and the FDIC pays off all insured deposits. PIs are the acquisitions of only insured deposits of failed banks. The disclosure of failed-bank auctions started from May 2009. Two auctions where two acquirers took over the failed bank are excluded. On July 9, 2010, RCB Bank and Enterprise Bank & Trust together purchased Home National Bank. Enterprise Bank & Trust took over a collection of loans while RCB Bank assumed the rest of assets, including all deposits. On February 27, 2015, Banco Popular and TPG Opportunity Partners together purchased Doral Bank. TPG took over a collection of loans while RCB Bank assumed the rest of assets, including all deposits. The aggregate value of total deposits and total assets (in $ million) are from the last Call Reports of the failed institutions. Aggregated Resolution Cost (in $ million) is the amount disbursed from the Deposit Insurance Fund to cover obligations to insured depositors and the amount estimated (by the FDIC) to be ultimately recovered from the failed bank resolutions.

Sample		Obs.	Aggregated Deposits	Aggregated Assets	Aggregated Resolution Cost
	All failed banks, excluding 13 assistance transactions (2007–2016)	522	320,913	391,814	73,273
–	Payoffs (no acquirer)	−26	13,888	15,901	4356
–	PIs (acquiring insured deposits only)	−13	27,687	40,357	15,096
–	No auction disclosures	−39	37,517	49,682	10,105
–	Two acquirers	−2	4612	6484	771
	P&As with auction disclosures	**442**	237,208	279,390	42,945
	1 bidder	147	58,820	65,828	15,524
	2 bidders	83	59,765	73,998	10,295
	3 bidders	81	40,544	47,840	7983
	4 bidders	63	37,887	45,411	5231
	>4 bidders	68	40,191	46,313	3912

torical bank names via eyeballing, web searches, and additional information provided in disclosure filings. We also assign the lobbying activities from the parent institution, if any, to an individual bank because individual banks may benefit from the lobbying done by their parent without necessarily lobbying on their own. The main lobbying variables used in the analysis (see Table A1 in the appendix for definitions) are constructed with the following information from lobbying disclosure filings: the name of the registrant (i.e., the lobbying firm) and the name of the client (in the case of in-house lobbying, the bank is the registrant and client); the annual amount the client pays, which is calculated by the CRP by summing the information in quarterly reports; and the name of agencies lobbied. First, we construct a variable that captures the bidder lobbying status during the current year of the bank failure date. More specifically, this is an indicator variable that takes the value of 1 if the bank lobbies the Treasury or any of the banking regulators potentially involved (FDIC, Fed, OCC, and OTS (Office of Thrift Supervision)).[10] Second, we construct a variable that reflects the intensity with which a bank lobbies. This variable is the dollar amount of lobbying expenditures directed specifically toward the Treasury and the aforementioned banking regulators. Consistent with prior literature, we view our lobbying variables as general proxies for how well connected a bank is with regulatory authorities.

In addition to lobbying activities, we construct variables proxying special interests using the current and historical employment of board members of bidding banks at the time of the failure from BoardEx, campaign contributions from the federal election committee (FEC), and banking subcommittee representations from Congress Journal archives.

2.4. Descriptive statistics

In Table 2 we present descriptive statistics of the main variables used in our analysis for failed-bank auctions (Panel A) and bidders (Panel B). The vast majority of failed banks in our sample are state chartered (74 percent).[11] At the time of the failure, the median failed bank's total assets are $198.5 million, with a high standard deviation of $1.4 billion. Bank failures impose substantial costs on the FDIC: The median resolution cost of a sold failed bank in our sample is 22.5 percent of total assets of the failed bank, with a significant dispersion (standard deviation of 12.4 percent).[12] Similar insights apply for the net discount, as defined by the difference between the asset discount and the deposit premium of the winning bid (standardized by total assets of the failed bank). In levels, the median resolution amounts to $38.1 million, with a standard deviation of $148.3 million. The resolution of bank failures in our sample led to total DIF costs of approximately $43 billion (Table 1).

Comparing the characteristics of failed banks with bidding banks reveals interesting patterns. Bidding banks are, as expected, much larger than sold failed banks. The average bidding bank's assets are $8.5 billion with a standard deviation of $3.2 billion, while the average failed bank's assets amount to $591.3 million (standard deviation of $1.4 billion). Bidding banks are also well capitalized (average Tier 1 capital ratio of 15.9) and have no significant regulatory concerns (an average estimated CAMELS rating of 1.6). Bidding banks are located relatively close to failed banks with a median distance of 225.9 km ($e^{5.42}$) between pairs.

Many bidders are engaged in lobbying at the time of a target bank failure (10 percent of bidders). The proportion of lobbying banks in our sample is in line with prior studies and reflects the high entry barriers to lobbying process (Bombardini, 2008; Kerr et al., 2014). The average lobbying expenditures (on any issues) in our sample are $130,120, with a significant dispersion (standard deviation of $596,020). Moreover, 5 percent of bidders have connections via their board members, while 17 percent of bidders made campaign contributions to congressmen serving in congressional committees responsible for banking matters and 19 percent are headquartered in a district that is represented by a congressman serving in banking subcommittees. Focusing on lobbying bidders only, they spent on average approximately $1.3 mil-

[10] We focus on lobbying directed at all regulators rather than only at the FDIC. The reason is that, while the FDIC has full authority on receivership matters, information-sharing with the primary regulator of the failed bank as well as that of the acquirer is common.

[11] From the 442 P&A transactions in Table 1, 45 (untabulated) concern state-chartered banks supervised by the Fed. State non-member banks and savings institutions (chartered and supervised by the FDIC) account for 312 of the transactions. Federally chartered banks and savings institutions (supervised by the OCC) are observed in 71 cases, while thrifts make up the remainder with 14 P&A transactions at the time the OTS still existed.

[12] Bank failures typically represent a cost to the DIF because the FDIC must liquidate assets that have declined substantially in value while, at the same time, making good on the institution's deposit obligations. The cost is calculated as the difference between the liabilities of the failed bank and the market value of its assets net of expenses incurred by the FDIC.

Table 2
Descriptive Statistics. This table presents descriptive statistics of the main samples used in the analysis. Panel A describes the auction sample. Panel B describes the bidding banks participating in the auctions of failed banks. The variable Resolution Cost in Panel A is expressed as both the dollar amount (in $ million) and percentage of Total Assets of the failed bank at the time of the failure. Lobbying expenditures are in three forms: (1) indicators that take the value 1 if lobbying expenditures is positive in the year of failures; (2) dollar amount (in $ thousands) of lobbying expenditures in the year of failures; and (3) log-transformation of the dollar amount in (2). All the other variables are in the quarter prior to the failure dates. See Table A1 for more details about variable definitions. All variables are winsorized at the 1st and 99th levels.

Panel A: Failed-Bank Auctions

	Obs.	Mean	Std. Dev.	25th Percentile	Median	75th Percentile
Resolution Cost:						
Resolution Cost ($ million)	442	87.66	148.25	18.09	38.05	86.25
Resolution Cost (%)	442	23.28	12.44	13.95	22.5	31.56
Net Discount (%)	442	11.55	9.15	5.39	10.33	16.09
Net Discount Differential (%)	280	-2.05	7.95	-5.12	-1.90	-0.01
Financial Characteristics of Failed Banks:						
Total Assets ($million)	442	591.29	1404.16	94.82	198.54	448.15
Liquidity Ratio (%)	442	17.09	8.17	11.23	15.92	21.53
Tier 1 Capital Ratio (%)	442	1.18	3.4	0.3	1.55	2.69
NPL Ratio (%)	442	16.21	9.16	9.44	14.81	20.3
OREO Ratio (%)	442	5.36	4.85	1.77	4.12	7.54
CRE Loans (%)	442	34.9	16.44	24.25	33.68	44.22
C&I Loans (%)	442	10.51	8.52	4.36	8.33	14.19
Residential Loans (%)	442	25.95	17.64	12.92	23.69	32.71
Core Deposit (%)	442	54.09	18.87	43.51	55.35	67.07
State Bank	442	0.74	0.44	0	1	1
Estimated CAMELS Rating	421	4.97	0.17	5	5	5
Acquirers' Special Interests:						
Lobbying Regulators > 0	442	0.07	0.25	0	0	0
Lobbying Regulators ($000)	442	72.39	384.25	0	0	0
Lobbying Regulators (log)	442	0.9	3.34	0	0	0
Lobbying > 0	442	0.12	0.33	0	0	0
Lobbying ($000)	442	161.25	616.14	0	0	0
Lobbying (log)	442	1.62	4.38	0	0	0
Board Connection	442	0.07	0.25	0	0	0
Campaign Contribution	442	0.18	0.38	0	0	0
Banking Subcommittee Representation	442	0.18	0.39	0	0	0

Panel B: Bidding Banks

	Obs.	Mean	Std. Dev.	25th Percentile	Median	75th Percentile
Financial Characteristics:						
Total Assets ($million)	1189	8495.92	32319.37	506.72	1437.25	3770.75
Liquidity Ratio (%)	1189	16.52	9.95	9.65	14.37	21.08
Tier 1 Capital Ratio (%)	1189	15.93	6.87	11.99	14.06	17.37
NPL Ratio (%)	1189	3.98	4.42	1.24	2.61	4.83
OREO Ratio (%)	1189	1.03	1.13	0.21	0.64	1.41
CRE Loans (%)	1189	33.41	13.74	24.64	33.83	41.4
C&I Loans (%)	1189	14.03	9.05	7.34	11.82	18.8
Residential Loans (%)	1189	25.13	15.5	14.88	22.57	31
Core Deposits (%)	1189	49.08	17.67	36.08	50.56	61.62
State Bank	1189	0.7	0.46	0	1	1
Estimated CAMELS Rating	1155	1.58	0.6	1	1.5	1.5
Proximity to Failed Banks:						
Distance	1186	5.41	1.35	4.34	5.42	6.52
Distance CRE Loans (%)	1189	14.82	11.58	5.44	12.32	21.37
Distance C&I Loans (%)	1189	9.04	8.21	2.94	6.59	12.6
Distance Residential Loans (%)	1189	15.1	13.71	5.31	11.55	20.13
Change in HHI	1189	2.35	11.02	0	0	0.08
Special Interests:						
Lobbying Regulators > 0	1189	0.05	0.22	0	0	0
Lobbying Regulators ($000)	1189	65.53	393.07	0	0	0
Lobbying Regulators (log)	1189	0.66	2.92	0	0	0
Lobbying > 0	1189	0.1	0.29	0	0	0
Lobbying ($000)	1189	130.12	596.02	0	0	0
Lobbying (log)	1189	1.28	3.91	0	0	0
Board Connection	1189	0.05	0.22	0	0	0
Campaign Contribution	1189	0.17	0.38	0	0	0
Banking Subcommittee Representation	1189	0.19	0.39	0	0	0

lion (i.e., 65.53/0.05 in Panel B) on lobbying expenditures targeted at regulators during the year of the failure, again with a very significant dispersion.

In Table 3 we compare the characteristics of auction winners (i.e., acquirers) with auction losers. We note that acquirers tend to be located closer to failed banks relative to other bidders, consistent with Granja et al. (2017). However, winners and losers do not appear to differ on many other characteristics but their lobbying activities. Acquiring banks tend to lobby significantly more than other bidders. For instance, acquirer's average lobbying expenditures targeted at banking regulators are 46.2 percent larger than the ones of a loser ($e^{0.38} - 1 = 0.462$). Acquiring banks are

Table 3
Winning and Losing Bidders This table presents the results of *t*-test with unequal variances of the mean difference between auction winners and losers. All variables on financial characteristics are in the quarter prior to the failure dates. See Table A1 for more details about variable definitions. All variables are winsorized at the 1st and 99th levels. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels.

	Winner		Loser		Winner-Loser	
	Obs.	Mean	Obs.	Mean	Difference	*t*-stat.
Financial Characteristics:						
Size	429	14.28	760	14.25	0.02	(0.23)
Liquidity Ratio (%)	429	16.90	760	16.30	0.60	(0.99)
Tier 1 Capital Ratio (%)	429	15.99	760	15.89	0.11	(0.24)
NPL Ratio (%)	429	4.08	760	3.92	0.16	(0.59)
OREO Ratio (%)	429	0.96	760	1.07	-0.11*	(-1.65)
CRE Loans (%)	429	33.52	760	33.35	0.17	(0.20)
C&I Loans (%)	429	14.80	760	13.59	1.21**	(2.28)
Residential Loans (%)	429	24.70	760	25.37	-0.67	(-0.73)
Core Deposits (%)	429	48.28	760	49.54	-1.26	(-1.18)
State Bank	429	0.68	760	0.71	-0.03	(-1.02)
Estimated CAMELS Rating	419	1.59	736	1.58	0.02	(0.44)
Proximity to Failed Banks:						
Distance	426	5.25	760	5.49	-0.24***	(-2.99)
Distance CRE Loans (%)	429	14.40	760	15.06	-0.67	(-0.97)
Distance C&I Loans (%)	429	9.06	760	9.02	0.04	(0.08)
Distance Residential Loans (%)	429	15.28	760	14.99	0.29	(0.35)
Change in HHI	429	2.47	760	2.29	0.18	(0.27)
Special Interests:						
Lobbying Regulators > 0	429	0.07	760	0.04	0.03**	(2.10)
Lobbying Regulators (log)	429	0.90	760	0.52	0.38**	(2.00)
Lobbying > 0	429	0.12	760	0.09	0.04**	(2.01)
Lobby (log)	429	1.64	760	1.08	0.56**	(2.24)
Board Connection	429	0.07	760	0.04	0.03**	(2.14)
Campaign Contribution	429	0.18	760	0.17	0.01	(0.32)
Banking Subcommittee Representation	429	0.19	760	0.19	-0.01	(-0.29)

also significantly more likely to have connected board members. These differences can be interpreted as suggestive evidence that banks' special interests affect auction outcomes.

3. Analytical framework

Our goal in this section is to provide a simple economic framework for our empirical analysis of the effects of lobbying on failed-bank auctions. The model formalizes the idea that lobbying banks may pay a relatively lower premium in order to win, leading to potential inefficient allocation of failed banks. Besides examining the direct effect of lobbying on auctions, we also use the framework to analytically show how a correlation of lobbying and other bank characteristics may create an indirect (spurious) relationship between lobbying and auction outcomes.

3.1. Rent-seeking explanation

We consider a failed-bank auction with two bidders, bank *A* and *B*. The two banks have different gains from taking over the failed bank (arising, for example, because of differences in synergies or in the ability to turn around the activities of the failed bank), resulting in different valuations of the target bank. Specifically, the value of acquiring the failed bank to bank *A* and *B* is denoted with θ_A and θ_B, respectively, and is independently and uniformly distributed on the interval [0,q], in which q is a measure of the potential (maximum) value of the bank. A bank's valuation is only known to the bank itself. The auction process can be summarized as follows. Bidders submit bids to the FDIC, following which the FDIC selects the bidder with the highest bid (first-price auction). In the case of equal bids, the FDIC selects the winner randomly.

Bank *A* is a lobbying bank (e.g., it has a lobbyist on his payroll or has a connected board member) and hence has an established communication channel with banking regulators. We assume that the lobbying relationship is "effective" with probability $\phi \in (0, 1)$. In the case of lobbying not being effective, the auction takes place in the form of a standard first-price sealed bid auction. In the case of lobbying being effective, however, bank *A* gets to know the bid of bank *B* and can tailor its bid to this information.[13] Bank *B* is aware of the lobbying status of bank *A*, and hence knows that its bid will become known to bank *A* with a certain probability.

We are interested in three characteristics of the auction. The first is how lobbying affects the likelihood of winning an auction, denoted π. The second is how lobbying affects the (average) premium that has to be paid by the winner. We define this premium as $Prem_A = \frac{E[b_A^* - b_B^* | b_A^* \geq b_B^*]}{q}$ and $Prem_B = \frac{E[b_B^* - b_A^* | b_B^* > b_A^*]}{q}$ for bank *A* and *B*, respectively (in which b_A and b_B denote the bids), that is, the "excess" the winner has to pay relative to the covered bidder, normalized by the maximum value of the bank, *q*. This variable measures how much a bank has to pay to win the auction; it also affects the costs of bank failure to the FDIC as a lower premium will result in higher losses to the FDIC. Note that by defining the price relative to the second bidder, the premium controls for differences in (failed) bank quality across auctions, an issue to which we will return below. The third characteristic is the efficiency of the auction, in terms of matching the failed bank with the bidder with the highest valuation. We can measure this as the average valuation of the winning bank, scaled by the maximum value of the failed bank: $Eff_A = \frac{E[\theta_A | b_A^* > b_B^*]}{q}$ and $Eff_B = \frac{E[\theta_B | b_B^* > b_A^*]}{q}$.

[13] This aims to capture that, through its connections with regulators, the lobbying bank may get an idea about the auction competition (for example, how aggressive some bidders are likely to behave; see also Footnote 2), allowing it to bid more efficiently. It does *not* imply that the lobbying bidder is given confidential information that would violate legal and ethical rules.

The setup is a variation of a standard first-price sealed bid auction. In such an auction, bidders are known to bid less than their private valuation of the bank (contrary to second-price auctions). In fact, when determining the bid, a bidder trades off two effects. First, a higher bid increases the chances of winning the auction. Second, a higher bid means that more has to be paid when the auction is won. When setting the optimal bid, a bidder also has to form beliefs about the strategy followed by the other bidder, as this will determine under which circumstances the auction is won. We consider a Bayesian Nash equilibrium to this game and constrain ourselves to strategies where bank B always bids a fraction α_B ($\in (0,1)$) of its private valuation θ_B. Bank A also bids a constant fraction α_A ($\in (0,1)$) of its valuation in case it does not get to know the bid of B, otherwise it can condition its bid freely on both on its own valuation as well as the bid of bank B.

Proposition 1. *The lobbying bank:*

i) has a higher likelihood of winning the auction than a non-lobbying bank: $\pi_A > \pi_B$;
ii) pays a lower (expected) premium when it wins the auction: $Prem_A < Prem_B$;
iii) produces lower auction efficiency when it wins the auction: $Eff_A < Eff_B$.

Proof. See Appendix B. ■

The second result is fairly obvious. A lobbying bank (with a certain probability) obtains information about the bid of the other bank. In such case it can entirely avoid paying a premium when it wins. Its *average* winning premium thus declines. The reason for the first result is the following. When the lobbying bank knows the competing bid, it can acquire the failed bank at a lower cost. This makes it optimal to acquire the failed bank in more states of the world, resulting in a higher likelihood of winning. For bank B the effect works in the opposite, resulting in a lower likelihood of winning. The reason for the third result is that in certain situations the lobbying bank can now (profitably) win the auction even if does not have the highest valuation of the two banks. This occurs precisely when $\theta_A \in (b_B^*, \theta_B)$, that is, when bank A's valuation is between the bid of bank B and bank B's valuation of the target bank. In this case, bank A (profitably) wins the auction by bidding slightly more than b_B^*. By contrast, for non-lobbying banks, winning becomes more difficult. They hence tend to win only when their valuation is fairly high.[14]

3.2. Other channels

In our empirical exercises, we relate lobbying to the three auction outcomes analyzed above. However, besides the rent-seeking explanation, there are other channels through which lobbying may (directly or indirectly) relate to auction outcomes. To facilitate identification of the rent-seeking channel, we now discuss whether alternative channels produce similar auction outcomes.

3.2.1. Informational explanation

The informational channel posits that information exchange between a lobbying bank and the FDIC improves the matching in the auction. For example, it may take the form of a lobbying bank credibly relaying information about its private valuation to the FDIC, allowing the FDIC to allocate the failed bank to the acquirer with the highest valuation. While under the informational channel, lobbying may also result in a higher likelihood of winning and a lower premium, it should produce opposite efficiency results. In particular, under the informational channel, lobbying should result in a better matching of target banks to acquirers, and thus improve efficiency. This allows distinguishing the informational channel from the rent-seeking channel.

3.2.2. Correlation between lobbying and target valuation

Lobbying may also relate to auction outcomes when lobbying is endogenous, and correlates with bank A's valuation of the target. In this case a correlation between lobbying and auction outcomes arises irrespective of whether lobbying has a direct influence on the auction process. Such a correlation may take two forms. First, certain type of banks (e.g., sophisticated banks) may lobby, and have a high ability to incorporate failed banks at the same time. Second, a bank may have a high valuation for a specific target and may thus start to lobby the FDIC surrounding a specific auction.

To analyze this possibility, consider a situation in which lobbying does not have any direct effect on the auction process (i.e., in the model above the regulator follows the first-price sealed bid auction process with probability 1) but that lobbying bank A has a higher expected valuation of the target. Specifically, we assume that with probability $1-\eta$ ($\eta \in (0,1)$), the valuation of the lobbying bank is uniformly distributed on $[0,q]$ (as in the baseline model) but that, with probability η, it takes the maximum value q.

Proposition 2. *A bank with a high valuation for the target:*

i) has a higher likelihood of winning the auction than a bank with a lower valuation;
ii) pays on average a higher premium when it wins the auction;
iii) produces a higher auction efficiency when it wins the auction.

Proof. See Appendix B. ■

The first result is obvious, a bank that has a higher valuation (in expectation) will bid more aggressively in an auction, and is thus more likely to win the auction. A positive relationship between lobbying and winning the auction is thus, besides the rent-seeking channel, also consistent with lobbying banks having a higher target valuation. However, as result *ii)* shows, in this case the premium to be paid relative to the covered bidder should be *higher*, as the bank bids on average higher values. In addition, if lobbying reflects higher valuation of the target, lobbying winners should result in higher auction efficiency (and not lower, as predicted by the rent-seeking channel). A correlation between lobbying and valuations thus produces distinct predictions for auction outcomes than the rent-seeking channel.

3.2.3. Correlation between lobbying and target quality

Another issue that may arise in our empirical setup is that lobbying banks may prefer targets of a specific quality. This may create a spurious correlation between lobbying and auction results unrelated to lobbying (i.e., selection problem). In particular, if lobbying banks seek out low-quality banks this may result in the lobbying winners to be associated with lower bid premia and possibly lower auction efficiency. This is of concern since in the empirical work we will not be able to perfectly control for bank quality.

We analyze the following modification of the baseline model. Suppose that target banks can either be of bad or good quality, $q \in \{q_B, q_G\}$ ($q_B < q_G$) and let us assume that, when the target bank is of low quality, the lobbying bank has a higher valuation of the target. Specifically, consider the following structure. The proportion of low-quality banks in the population of failed banks is $\frac{1}{2}$. In the case of the low-quality bank, nature draws two valuations from the uniform distribution $[0, q_B]$ and assigns with probability 1 the higher value to bank A and the lower to bank B (opposite for high-quality bank). Let us also assume that banks are not aware of this bias; they believe that values are randomly assigned to them.

[14] We consider here lobbying that provides bidders with better information about the competing bid. An alternative way to model lobbying effectiveness is that with probability ϕ it results in a bank winning an auction even if it does not have the highest bid. Proposition 1 continues to hold also under this alternative rent-seeking channel.

Proposition 3 analyzes the impact on auction outcomes. Next to the three outcomes studied before, we also analyze the impact on the total resolution costs the FDIC incurs related to the sale of the failed bank. We can model this resolution cost as $R = 1 - \max(b_A^*, b_B^*)$, that is, the difference between the value of the bank if it were not distressed and what the FDIC receives from the auction. Intuitively, the resolution cost has two components, the quality of the failed bank (ceteris paribus, banks that are more distressed will result in higher resolution costs) and how aggressive the winner had to bid to win the auction (for constant bank quality, less aggressive bidding will result in higher resolution costs as well).

Proposition 3. *A bank that prefers low-quality targets:*

i) has the same likelihood of winning an auction as a bank that prefers high-quality targets;
ii) pays the same auction premium;
iii) produces the same auction efficiency when it wins;
iv) produces higher resolution costs to the FDIC when it wins.

Proof. See Appendix B. ■

We can see that the selection problem does not distort the three auction outcomes used in our empirical analysis; lobbying thus may not create a spurious relationship in that respect. However, it creates a spurious relationship with the FDIC's resolution costs. The reason is that, since lobbying banks prefer worse targets, the resolution costs to the FDIC are higher when they win auctions, unrelated to lobbying. To the contrary, the premium (which is defined relative to the second bidder) effectively controls for target quality as the latter is reflected in the bid of the cover bidder. This is one of the reasons why in our empirical work we use the auction premium instead of the resolution costs to the FDIC.

4. Empirical results

4.1. Auction winning likelihood

To evaluate the effect of lobbying on the probability that a bidder wins a FDIC-run auction, we use $\Phi(\cdot)$ denoting a probit and estimate the specification

$$\Pr\left(win_{ijt} = 1\right) = \Phi\left(\alpha + \beta l_{jt} + \Gamma_j X_{jt} + \Gamma_{ij} X_{ijt} + \mu_i + \mu_t\right), \qquad (1)$$

in which win_{ijt} is a dummy variable equal to 1 if a bidder j acquired failed bank i at time t, and 0 if not.[15] α is a constant term. l_{jt} is a measure of bidder j's lobbying activities, usually either taking the value of 1 when the bidder directs its lobbying toward a banking regulator or calculated as the log of 1 plus the lobbying expenditures on banking regulators, measured in thousand dollars. X_{jt} is a vector of control variables that always includes the following characteristics of bidder j in the quarter prior to the failure date t: Banking Subcommittee Representation, Size, Liquidity Ratio, Tier 1 Capital Ratio, NPL Ratio, OREO Ratio, CRE Loans, C&I Loans, and Residential Loans.[16] X_{ijt} is another vector of variables of proximity between a failed bank i and a bidder j, which always includes the variable Distance, calculated as the log of the average distance of the branch network of the bidding bank j from the branch network of the failed bank i, the variables Distance X Loans, calculated as the absolute difference in X loans between a failed bank i and a bidder j (X meaning CRE, C&I, or Residential Loans), and the variable Change in HHI, calculated as the average increase in local deposit market concentration across failed bank branch locations.[17] μ_i and μ_t represent a full set of failed bank and quarter fixed effects. The failed bank fixed effects μ_i ensure that our results are not driven by the characteristics of the bank being sold and its auction process, while quarter fixed effects μ_t control for any macro movements (the latter effects matter only when bank fixed effects are not included). The coefficient of interest is β, which measures the effect of lobbying on the probability that a bidder wins a FDIC-run auction. Throughout the main text, we report standard errors clustered at the level of the state where the failed bank's headquarters is located.

Table 4 shows our basic regressions, estimates of Eq. (1). The results across columns 1–4 confirm that lobbying is positively associated with the probability of acquiring a failed bank. Column 1 is the most parsimonious specification regressing the probability of winning an auction on our lobbying dummy variable and both quarter and state fixed effects. The probit estimate of β yields a marginal effect of 0.1434 (s.e.= 0.0441), statistically significant at the 1-percent level. In column 2, we estimate the same specification as in column 1 but we replace state fixed effects by failed bank fixed effects μ_i, which allow for within-auction differences in lobbying status of bidders. The inclusion of μ_i implies that auctions with only one bidder are dropped. The average marginal effect estimate on lobbying status is 0.2876 (s.e.=0.0647), statistically significant at the 1-percent level.

Column 3 is our standard specification, which adds controls for characteristics of bidders and proximity to failed banks. The result on lobbying is statistically and economically meaningful. The estimate, 0.1849 (s.e.=0.0676), implies that targeted lobbying on regulators increases the probability of winning the auction by 18.5 percentage points. Column 4 mirrors the specification in column 3 but turns to estimating the effect of lobbying expenditures. The coefficient estimate on lobbying expenditures is 0.0130 (s.e.=0.0043), again statistically significant at the 1-percent level. In economic terms, a one-standard-deviation increase in targeted lobbying expenditures on regulators (3.91) leads to an increase in the probability that a bidder wins the auction by 5.1 percentage points.[18]

The evidence from control variables in columns 3 and 4 shows that winning bidders are relatively larger and more capitalized than losers. By contrast, the coefficient on liquidity (as measured by Liquidity Ratio) is not statistically distinguishable from zero, suggesting that actual acquirers do not differ much in terms of liquidity constraint. The coefficient estimate on geographical distance indicates that bidders that are located farther from a failed bank have a lower probability of acquiring it.

Thus far we have investigated bidders that specifically started their lobbying efforts during the resolution of a failed bank (*direct influence*). However, a connection between lobbying and auc-

[15] Our fixed-effect maximum likelihood estimators may be inconsistent due to the incidental parameters problem. We thus also run conditional fixed-effect logit regressions $\Phi(\cdots|\mu_i)$ in which bidder-failed bank pairs are grouped by the failed bank i and the likelihood is calculated relative to each group (μ_i denotes the fixed effect for failed bank i). The results obtained are very similar.

[16] All our results presented in the next sections are robust to the inclusion of other variables in X_{jt} (Core Deposits, State Bank, Estimated CAMELS Rating). We do not report them in the paper for brevity reasons.

[17] Note that we do not include a control for the price offered by the bidder (i.e., the net discount). The reason is that the price is endogenous to lobbying efforts, as shown in Section 3. However, our results (unreported) are robust to the inclusion of this control. As we can only match the net discount to the winner and the cover bidder, for this robustness check we randomly assign unmatched net discounts to the remaining bidders.

[18] Bidders may self-select to bid (upon the invitation from the FDIC to join an auction), raising the concern that our results do not apply to a representative potential bidder. We address possible self-selection bias by performing a Heckman-probit analysis. For each failed-bank auction, we first extend the bidder sample to all potential bidders (based on the FDIC qualifying criteria). We then employ the Heckman-probit method, for which both the dependent variable (win_{ijt}) and participation variable (bid_{ijt}) are binary. The estimated effects of lobbying are qualitatively similar to the ones in Table 4. At the same time, we do not find that lobbying significantly affects banks' propensity to participate into an auction (and the Wald tests fail to reject the null), suggesting that our probit estimations reported in Table 4 are appropriate.

Table 4
Auction Winning Likelihood. This table reports the average marginal effects on the likelihood of winning an auction. The dependent variable of the probit regression is Win and the independent variables of interest are the measures of special interests—Lobbying Regulators>0, Lobbying Regulators, Past Lobbying Regulators>0, Board Connection, Campaign Contribution, Banking Subcommittee Representation. Control variables include financial characteristics of bidders in the quarter prior to failure dates—Size, Liquidity Ratio, Tier 1 Capital Ratio, NPL Ratio, OREO Ratio, CRE Loans (%), C&I Loans (%), and Residential Loans (%)—and proximity measures—Distance, Distance *X* Loans, and Change in HHI. See Table A1 for more details about variable definitions. All variables are winsorized at the 1st and 99th levels. Robust standard errors of marginal effects are presented in the parentheses and clustered at the level of the failed bank's state headquarters. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels.

	(1)	(2)	(3)	(4)	(5)	(6)
	Pr(Win)					
Lobbying Regulators > 0	0.1434***	0.2876***	0.1849***			0.1818**
	(0.0441)	(0.0647)	(0.0676)			(0.0792)
Lobbying Regulators				0.0130***		
				(0.0043)		
Past Lobbying Regulators > 0					0.1647***	
					(0.0588)	
Board Connection						0.1792**
						(0.0749)
Campaign Contribution						0.0037
						(0.0404)
Banking Subcommittee Representation						0.0163
						(0.0522)
Size			0.0676***	0.0681***	0.0669***	0.0634***
			(0.0184)	(0.0184)	(0.0189)	(0.0190)
Liquidity Ratio			0.0011	0.0011	0.0012	0.0015
			(0.0023)	(0.0023)	(0.0023)	(0.0024)
Tier 1 Capital Ratio			0.0071*	0.0070*	0.0067	0.0066
			(0.0041)	(0.0042)	(0.0042)	(0.0041)
NPL Ratio			−0.0089	−0.0090	−0.0091	−0.0074
			(0.0081)	(0.0082)	(0.0082)	(0.0081)
OREO Ratio			−0.0011	−0.0008	0.0003	0.0019
			(0.0329)	(0.0330)	(0.0333)	(0.0328)
CRE Loans (%)			−0.0027	−0.0028	−0.0028	−0.0029
			(0.0022)	(0.0022)	(0.0022)	(0.0023)
C&I Loans (%)			0.0020	0.0021	0.0020	0.0014
			(0.0034)	(0.0034)	(0.0035)	(0.0035)
Residential Loans (%)			−0.0031	−0.0032	−0.0032	−0.0031
			(0.0026)	(0.0026)	(0.0026)	(0.0026)
Distance			−0.0743***	−0.0740***	−0.0740***	−0.0694***
			(0.0146)	(0.0146)	(0.0145)	(0.0147)
Distance CRE Loans (%)			−0.0005	−0.0005	−0.0006	−0.0006
			(0.0021)	(0.0021)	(0.0021)	(0.0021)
Distance C&I Loans (%)			−0.0012	−0.0011	−0.0012	−0.0011
			(0.0030)	(0.0030)	(0.0030)	(0.0030)
Distance Residential Loans (%)			0.0003	0.0002	0.0003	0.0001
			(0.0017)	(0.0017)	(0.0016)	(0.0016)
Change in HHI			−0.0004	−0.0004	−0.0007	−0.0008
			(0.0011)	(0.0011)	(0.0011)	(0.0011)
Quarter Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Failed Bank State Fixed Effects	Yes	No	No	No	No	No
Failed Bank Fixed Effects	No	Yes	Yes	Yes	Yes	Yes
Pseudo R-squared	0.057	0.066	0.099	0.099	0.099	0.105
Auctions	434	288	285	285	285	285
Observations	1197	1029	1021	1021	1021	1021

tion winning likelihood may also arise because a bidder may benefit from a relationship established prior to distress of the bank (*established connections*). In column 5, we evaluate the impact of lobbying performed during the eight quarters prior to the failure date employing, similarly as before, a binary indicator. The coefficient estimate is statistically significant at the 1-percent level, and of slightly lower magnitude than its counterpart in column 3. This result suggests that the "established connections" channel drives our results, rather than lobbying that is started specifically at the time of the auction. This is also consistent with the general notion that it takes considerable time to build lobbying relationships and, hence, pre-existing relationships are important (Drutman, 2015).

We also examine an array of measures of special interests (see Table A1 for the exact variable definitions). Adams (2017) and Lim et al. (2019) provide compelling evidence that having connected board members is critical for banks to exert influence on banking regulators. We thus look at the role played by bidders with board members who are currently serving (or have served) on the board of advisory committees or councils of banking regulators. Duchin and Sosyura (2012), among others, further show the relevance of connections to powerful politicians as a channel of influence. We thus also analyze bidders having contributed to election campaigns of politicians sitting on relevant congressional committees or being headquartered in the same district as a congressman serving in the banking subcommittees. As can be observed in column 6, the effect of lobbying status remains unaltered. Furthermore, we find that board connections to banking regulators significantly increase the likelihood of winning an auction, whereas ties to powerful politicians do not. These results are expected since lobbying efforts and board connections are specifically

Table 5
Matching Results. This table describes the matched sample and reports regression results in the matched sample. Panel A compares the 31 pairs of matched lobbying and non-lobbying bidders. For each lobbying bidder (Lobbying Regulator > 0), the matching non-lobbying bidder is the closest in the variable Size among non-lobbying bidders within the same auction. Matching pairs with the absolute difference in size larger than 10 percent of the lobbying bank size are dropped. The last columns in Panel A report the results of *t*-test with unequal variances of the mean difference in bank characteristics between lobbying and matched non-lobbying bidders. Panel B reports the average marginal effects on the likelihood of winning an auction in the matched sample. See Table A1 for more details about variable definitions. All variables are winsorized at the 1st and 99th levels. Robust standard errors of marginal effects are presented in the parentheses and clustered at the level of the failed bank's state headquarters. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels.

Panel A: Comparison of Matched Bidders

	Lobbying Bidders		Non-Lobbying Bidders		Lobbying – Non-Lobbying	
	Obs.	Mean	Obs.	Mean	Difference	*t*-stat.
Size	31	15.41	31	15.36	0.06	(0.14)
Liquidity Ratio (%)	31	15.36	31	14.06	1.31	(0.52)
Tier 1 Capital Ratio (%)	31	17.68	31	15.21	2.47	(1.08)
NPL Ratio (%)	31	6.76	31	4.47	2.29	(1.48)
OREO Ratio (%)	31	0.65	31	0.95	-0.30	(-1.27)
Distance	31	5.43	31	6.42	-0.98***	(-2.86)
Board Connection	31	0.19	31	0.06	0.13	(1.52)
Campaign Contribution	31	0.19	31	0.16	0.03	(0.33)
Banking Subcommittee Representation	31	0.06	31	0.23	-0.16*	(-1.82)

Panel B: Marginal Effects on the Probability of Winning

	(1) Pr(Win)	(2)	(3)
Lobbying Regulators > 0	0.1815*	0.2978**	0.2925**
	(0.0973)	(0.1390)	(0.1295)
Size			-0.3317***
			(0.1034)
Distance			-0.1288***
			(0.0389)
Year Fixed Effects	Yes	Yes	Yes
Failed Bank State Fixed Effects	Yes	No	No
Failed Bank Fixed Effects	No	Yes	Yes
Pseudo R-squared	0.122	0.096	0.414
Auctions	29	16	16
Observations	58	32	32

directed toward the FDIC and other banking regulators, which are the agencies in a position to affect the resolution process. However, the effect of ties to the elected politicians is a priori less clear as politicians are not able (by law) to interfere in this process. Politicians may also have more incentives, in this context, to serve constituent interests than banks' special interests.

As discussed theoretically above, a concern in our setting is that lobbying might also relate to auction outcomes if it correlates with a bidder's valuation of the target bank. The issue arises with respect to a *specific* failed bank, causing a bidder with a high valuation for a particular failed bank to lobby surrounding a specific auction. It may also arise because lobbying correlates with a bank's *general* ability to acquire other banks. However, as shown in Section 3.2.2, in this case we would expect lobbying to be associated with a larger bid premium, contrary to what we find in Section 4.3 (see below). That said, lobbying banks are significantly bigger, with worse liquidity and non-performing loan ratios than non-lobbying banks. They are also more active in political engagement in terms of having board members with connections to banking regulators and making donations to congressmen sitting on the banking committees.[19]

To alleviate the concern that the findings may be biased by potential correlations between auction outcomes and such differences between lobbying and non-lobbying bidders, we conduct a matching exercise. The results are presented in Table 5. [20] We retain only non-lobbying bidders that are comparable to lobbying bidders. Specifically, for a given lobbying bidder, we match a non-lobbying bidder with the smallest distance in size *within* the same auction. We measure the distance in size by the absolute difference in size (i.e., using the variable Size) between the lobbying and matched non-lobbying bidders divided by the lobbying bidder size and only keep the ones with a distance of less than 10 percent. Therefore, this matching procedure drops auctions in which either only one bidder participates or all/none of the bidders lobby. We end up with 31 pairs of matched lobbying and non-lobbying bidders, which covers 54 percent of the lobbying bidders. The matching procedure results in a very balanced sample of lobbying bidders that are comparable to non-lobbying bidders across an array of common bank characteristics (see Panel A). We run our regressions for this matched sample that is significantly smaller than the baseline sample. We thus only control for Size and Distance (i.e., the two control variables that have the most significant effects in Table 4) and the fixed effects to allow for reasonable degrees of freedom. Despite the highly limited sample, we still observe that lobbying is positively associated with the probability of winning an auction (Panel B). Alternatively, we also use a propensity score matching approach to construct the matched sample. This approach results in an even more limited sample, yet the results remain robust (see the online appendix).

4.2. Auction premium

In this section, we explore whether lobbying affects how much a bank has to bid to win the auction. For most transactions, the

[19] The online appendix provides a comparison between lobbying and non-lobbying bidders.

[20] We also construct an instrument based on lobbying activities unrelated to financial issues and targeted at agencies other than those engaged in financial regulation. The details and findings from this instrumental variable approach are in the online appendix. The results are consistent with the messages presented here.

payment between the FDIC and a bidder at the time of the auction consists of two components: (1) The discount the bidder requires for acquiring the failed bank's assets (asset discount); and (2) the premium the bidder is prepared to pay for assuming the deposits (deposit premium). The difference between the two components is the *net discount* offered by the bidder on the failed bank's assets and liabilities. A higher (positive) net discount means a higher payment from the FDIC to the acquirer.

In this exercise, we examine whether acquirer lobbying affects the *net discount differential*, that is, the difference in net discount between the acquirer and the bidder whom the FDIC viewed as the second best (i.e., the cover bidder). This differential can be interpreted as the premium an acquirer has to pay for winning the auction. The advantage of studying the differential is that it controls for (unobservable) characteristics of the failed banks, as those should be reflected in the valuation of the cover bidder (see our theoretical framework in Section 3.2.3).

It should be noted that the net discount at the time of the auction does not necessarily coincide with the total resolution cost incurred by the FDIC ex-post. For instance, the presence of a loss-sharing agreement may require the FDIC to make future payments which affects the total resolution costs (FDIC, 2010). The FDIC provides a first estimate of the total resolution costs at the time of failure, this number is subsequently updated. We use the net discount instead of the (FDIC-estimate of) resolution cost for two reasons. First, this allows us to compare the net discount offered by the actual winner with the net discount that the second-best bidder would have offered if chosen by the FDIC (we do not have information on the counterfactual for the resolution costs). As shown in Section 3.2.3, the resolution costs themselves are also affected by the quality of the failed bank, and can thus produce a spurious relationship between lobbying and resolution costs if lobbying banks seek out failed banks of a specific quality. Second, while the net discount is an actual payment, the resolution cost estimate is under the discretion of the FDIC and may hence suffer from a bias if lobbying is effective.

We perform OLS regressions of the following specification:

$$cost_{its} = \alpha + \beta l_{it} + \Gamma X_{its} + \mu_t + \mu_s + \varepsilon_{its}, \quad (2)$$

in which i denotes a sold failed bank, t a quarter and s a state. The dependent variable $cost_{its}$ is the difference in net discount between the acquirer and the cover bidder, standardized by total assets of the failed bank. The net discount differential gives an indication of the incremental loss (gain) for the DIF that should have been realized if the FDIC had selected the cover bid. l_{it} is a measure capturing the lobbying (i.e., status and expenditures) of both the acquirer and the cover bidder. X_{its} controls for failed bank's characteristics including the variables Size, Liquidity Ratio, Tier 1 Capital Ratio, NPL Ratio, OREO Ratio, CRE Loans, C&I Loans, and Residential Loans. Moreover, X_{its} contains bidders' characteristics (Size, Liquidity Ratio, Tier 1 Capital Ratio, and Distance) as well as bid characteristics of both acquirer and cover bidder, namely percentages of assets covered in the bid and of assets covered in the loss-sharing agreement, dummy variable taking the value of 1 if (0 if not) the deal is for all loans and deposits of the failed bank, dummy variable taking the value of 1 if (0 if not) the bid is a linked bid as identified by the FDIC, and dummy variable taking the value of 1 if (0 if not) the transaction includes a loss-sharing agreement between the FDIC and the acquirer. X_{its} also controls for the logged number of bids submitted in each P&A transaction. μ_t captures the quarter when the failed bank was sold, ensuring that the estimate is not driven by aggregate trends. We also include state fixed effects μ_s to account for any differences between states (e.g., economic conditions, regulatory forbearance).

Table 6 presents the results of estimating Eq. (2). Across columns the coefficients on our lobbying variables suggest that ac-

Table 6
Auction Premium. This table reports the results of regressions of the difference in net discount between the acquirer and the cover bidder. The dependent variable of the OLS regression is Net Discount Differential (%). The independent variable of interest in columns 1 and 2 is Lobbying Regulator > 0 for the acquirer and cover bidder, respectively, while the independent variable of interest in columns 3 and 4 is Lobbying Regulators (log-dollar value) for the acquirer and cover bidder, respectively. We drop the auctions in which the winning and cover bids are from the same bank. Control variables include bid characteristics—%Assets Bid,%Assets LSA, All Bank & All Deposits, Loss-Sharing Agreement, and Linked Bid—for both the winning bids and cover bids as well as Number of Bids as an auction characteristic. Additional control variables include failed-bank characteristics at the time of failure—Size, Liquidity Ratio, Tier 1 Capital Ratio, NPL Ratio, OREO Ratio, CRE Loans (%), C&I Loans (%), and Residential Loans (%)—and characteristics of acquirers and cover bidders—Size, Liquidity Ratio, Tier 1 Capital Ratio, and Distance. See Table A1 for more details about variable definitions. All variables are winsorized at the 1st and 99th levels. Robust standard errors of marginal effects are presented in the parentheses and clustered at the level of the failed bank's state headquarters. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels.

	(1)	(2)	(3)	(4)
	Net Discount Differential (%)			
Lobbying Regulators > 0	6.9984***	3.8173***		
	(2.4505)	(1.3907)		
Cover Bidder Lobbying Regulators > 0		−1.4905		
		(2.1877)		
Lobbying Regulators			0.5031***	0.2667**
			(0.1845)	(0.1017)
Cover Bidder Lobbying Regulators				−0.0848
				(0.1469)
%Assets Bid	5.2301	20.7979**	5.3268	20.9446**
	(7.4969)	(8.5986)	(7.5656)	(8.6160)
%Assets LSA	−5.8491	−14.7889*	−5.8531	−14.8134*
	(8.7222)	(7.9907)	(8.5736)	(7.9758)
All Bank & All Deposits	3.1811	3.9404	3.1972	3.9639
	(3.4839)	(2.8626)	(3.5121)	(2.8803)
Loss-Sharing Agreement	−3.7588	−4.2969	−3.7582	−4.2687
	(4.9992)	(4.4525)	(4.9594)	(4.4327)
Linked Bids	−3.1694	−1.1424	−3.1581	−1.1222
	(2.4444)	(1.8075)	(2.4789)	(1.8335)
Distance (acquirer to failed bank)	0.0227	0.6103	0.0703	0.6342
	(0.6014)	(0.5738)	(0.5832)	(0.5807)
Number of Bids	3.8598	2.6579**	3.8780	2.6598**
	(2.7295)	(1.3085)	(2.7110)	(1.2892)
Cover%Assets Bid		−20.4436*		−20.6278*
		(12.0804)		(12.0602)
Cover%Assets LSA		12.7513**		12.8247**
		(5.9613)		(5.9197)
Cover All Bank & All Deposits		−0.9189		−0.9267
		(1.8529)		(1.8360)
Cover Bid Loss-Sharing Agreement		6.2817*		6.2532*

(continued on next page)

Table 6 (*continued*)

	(1)	(2)	(3)	(4)
	Net Discount Differential (%)			
		(3.6005)		(3.5924)
Cover Linked Bids		0.3441		0.3744
		(1.8330)		(1.8368)
Distance (cover to failed bank)		−0.8234		−0.8105
		(0.5024)		(0.4946)
Quarter Fixed Effects	Yes	Yes	Yes	Yes
Failed Bank State Fixed Effects	Yes	Yes	Yes	Yes
Failed Bank Controls	Yes	Yes	Yes	Yes
Acquirer Controls	Yes	Yes	Yes	Yes
Cover Bidder Controls	No	Yes	No	Yes
Adjusted R-squared	0.146	0.528	0.145	0.527
Observations	227	227	227	227

quirer lobbying increases the net discount differential, and thus the losses incurred by the FDIC. The magnitudes are large. In column 1, the independent variable of interest is the lobbying status (i.e., a 0–1 indicator) of the acquirer. The coefficient estimate is 6.9984 (s.e.=2.4505) and statistically significant at the 1-percent level, suggesting that when the acquirer has an advantage in terms of lobbying over other bidders it amplifies the loss for the DIF. In column 2, we further control for cover bid characteristics as well as for cover bidder's characteristics, including its lobbying status. The coefficient estimate on acquirer lobbying status, 3.8173 (s.e.=1.3907), implies that the transfer to lobbying acquirers is estimated at $10.7 billion for the DIF, or 24.8 percent of the total resolution losses of $42.95 billion.[21] The coefficient estimate on cover bidder lobbying status is insignificant. Columns 3 and 4 display consistent results when we consider the dollar-value variables of lobbying. In terms of money spent on lobbying toward regulators (using coefficient estimates of column 4), a one-standard-deviation increase in lobbying expenditures (2.92) leads to an increase in the transfer from the DIF to lobbying acquirers of $2.2 billion, which is equal to 5.1 percent of the total resolution losses.

An important limitation of relying on the net discount differential is that, as said previously, this measure only captures the cash payment at the time of the failure but not the differences in expected resolution costs between the winning and cover bids. There may be situations in which the FDIC "correctly" selects a winning bid with a worse net discount as this bid may contain a more favorable loss-sharing agreement (for the FDIC). To assess the importance of this issue, we read virtually all P&A agreements and collect detailed information about the loss-sharing agreements. In the online appendix, we summarize this information when the winning bid is the best bid in terms of net discount, and when it is not. Our perusal reveals that, when the winning bid has a lower net discount than the cover bid, in about 70 percent of cases both winning and cover bids contain loss-sharing agreements for which the terms (i.e., applicable loss percentages and expected losses) are similar. However, when the net discount of the winning bid is not the best price, the winning bids are less likely to include loss-sharing agreements. Specifically, in those auctions, only 51 percent of winning bids include loss-sharing agreements, while 83 percent of cover bids have loss-sharing agreements with similar terms. We thus carefully examine the bid summaries and calculate the expected losses from loss-sharing agreements. The winning bids incur less losses from loss-sharing agreements than cover bids when the winning bid is not the best bid in terms of net discount, with an average difference of 2 percentage points of total assets. This suggests that the net discount differential may be a biased proxy of total expected losses, especially when it is positive. Therefore, we run our regressions in Table 6 excluding these (71) cases. The results (summarized in the online appendix) are even stronger with this sample, giving us further confidence that our results on auction premium are not driven by potential biases associated with the presence of "incomparable" bids (in terms of the net discount).

This finding that lobbying is associated with a higher net discount differential also supports our earlier causal interpretation of the results on the likelihood of winning. As illustrated in our model, a spurious relationship between lobbying and the likelihood of winning may arise when lobbying banks have a higher valuation for the failed bank. However, in that case we would expect lobbying to be associated with a higher bid premium, that is, a lower net discount differential.

To sum up, our results in this section suggest that when a lobbying bank wins an auction, it pays less (relative to the second bid) than a non-lobbying winner. This indicates that lobbying transfers resources away from the FDIC insurance fund.

4.3. Auction efficiency

Under the rent-seeking explanation we would expect lobbying to be associated with lower efficiency, while under the informational explanation lobbying should result in higher auction efficiency. In this section, we evaluate auction efficiency from two perspectives: ex-ante (i.e., at the time of the auction) and ex-post.

Following Granja et al. (2017), we assess the quality of the match between acquirer and failed bank using several criteria: geographic proximity, overlap in asset specificity, and the desire to improve efficiency through market consolidation. In Table 7, we compare these proxies for match produced by the auction for lobbying and non-lobbying acquirers. In each case (except for the similarity in CRE loans), lobbying winners display significantly worse matches than winners that do not lobby.

Using an ex-post perspective, we next examine whether the acquisition of failed banks by lobbying institutions leads to observable efficiency improvements. For that purpose, we construct a panel data set at the joint-bank (acquirer and failed bank combined) and quarter levels spanning the 2003–17 interval and perform fixed-effects regressions of the specification

$$\begin{aligned} efficiency_{j't} = {} & \alpha + \beta_1 post\ acquisition_{j't} \\ & + \beta_2 (l_{j'} \times post\ acquisition_{j't}) \\ & + \Gamma X_{j't} + \mu_{j'} + \mu_t + \varepsilon_{j't}. \end{aligned} \tag{3}$$

Here $efficiency_{j't}$ is a measure of efficiency of the joint-bank j' at time t. Specifically, we employ return on assets (ROA) and the cost-to-asset ratio (Cost Ratio) as two complementary measures of efficiency that have been used in prior works (e.g., Cornett and Tehranian, 1992; and Granja et al., 2017, in a context similar to ours). The dummy variable $post\ acquisition_{j't}$ takes the value of 1 on the quarter after the failure and the subsequent quarters, and 0 otherwise. The interaction between $l_{j'}$ and $post\ acquisition_{j't}$ captures how bidder lobbying (i.e., status and expenditures) modifies the

[21] Using the estimate of β from column 2, 3.8173 percentage points of $279,390 million of aggregated assets yield approximately $10,665.2 million (= 24.8 percent of the aggregated resolution cost in Table 1).

Table 7
Acquirer Proximity to Failed Banks . This table presents the results of *t*-test with unequal variances of the mean difference in acquirer proximity to failed banks between lobbying acquirers (Lobbying Regulator > 0) and non-lobbying acquirers. See Table A1 for more details about variable definitions. All variables are winsorized at the 1st and 99th levels. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels.

	Lobbying Acquirers		Non-Lobbying Acquirers		Lobbying – Non-Lobbying	
	Obs.	Mean	Obs.	Mean	Difference	*t*-stat.
Distance	30	6.34	397	5.17	1.17***	(5.14)
Distance CRE Loans (%)	29	17.59	400	14.13	3.47	(1.57)
Distance C&I Loans (%)	29	12.12	400	8.77	3.34**	(2.38)
Distance Residential Loans (%)	29	23.13	400	14.71	8.43***	(2.82)
Change in HHI	30	0.45	412	2.83	−2.38***	(−3.46)

average effect of a failed bank's acquisition on the outcome variable $efficiency_{j't}$. To isolate the effect of β_2, the coefficient of interest, we control for a host of joint-bank characteristics ($X_{j't}$) including Size, Liquidity Ratio, Tier 1 Capital Ratio, NPL Ratio, OREO Ratio, CRE Loans, C&I Loans, and Residential Loans. We further add joint-bank and quarter fixed effects, $\mu_{j'}$ and μ_t, to remove the effect of fixed joint-bank characteristics potentially correlated with lobbying or the acquisition itself on efficiency outcomes and to eliminate any common trends in both lobbying and acquisition potentially correlated with efficiency outcomes. The inclusion of $\mu_{j'}$ in our specification thus absorbs the lobbying variable itself and only the interaction term between the acquisition dummy and the lobbying variable is identified. Standard errors are clustered at the joint-bank level.

Table 8 reports the results of assessing whether efficiency changes around the acquisition vary according to the lobbying activities of the eventual acquirer of failed banks. We measure the combined efficiency of an acquirer and the failed bank before the acquisition by weighting their individual efficiency measures, and then compare them after the transaction. Columns 1–4 first show that there are, in general, efficiency improvements after failed bank acquisitions. The post-acquisition dummy variable enters positively and significantly in regression models of columns 1 and 2, which suggests that acquiring failed banks enhances operating performance as measured by ROA. Similarly, in columns 3 and 4 total expenses relative to total assets (Cost Ratio) decrease on average after the acquisition of a failed bank. The coefficient on the post-acquisition dummy variable, though insignificant, is negative.

When acquisitions involve a lobbying bank, they are associated with a relatively lower ROA and a higher Cost Ratio post-acquisition, suggesting efficiency deterioration compared to an average acquirer. First, the coefficient estimate of the interaction term in column 1 is −0.7192 (s.e.=0.0863), statistically significant at the 1-percent level. This means that ROA at lobbying banks decreases by about 72 basis points relative to a sample mean of 87 basis points. The results are also economically meaningful when we look at lobbying expenditures in column 2: A one-standard-deviation change in lobbying expenditures is associated with a drop in ROA by around 19 percent relative to the mean. Second, we focus on our cost measure (Cost Ratio) and find results in line with those on ROA. As can be observed from the remaining two columns of Table 8, we find that the takeovers of a failed institution by lobbying banks lead to significant increases in Cost Ratio, which corroborates the fact that post-takeover efficiency appears to deteriorate in lobbying banks.

The results on post-acquisition efficiency are consistent with a lower quality of match at the time of the auction. Taken together, these results point at lobbying being associated with lower auction efficiency, consistent with the rent-seeking explanation.

4.4. Discussion on alternative channels

We have shown that lobbying is related to a higher likelihood of winning, a lower net premium paid by the acquirer (i.e., a higher net discount differential), as well as lower auction efficiency. These are the predicted outcomes under the rent-seeking channel as developed in Section 3.1. However, these results (taken together) are not consistent with the informational channel (Section 3.2.1), nor a spurious association between lobbying and auction outcomes related to lobbying being correlated with target valuations (Section 3.2.2), nor a preference of lobbying banks for low-quality targets (Section 3.2.3).

There could be two further potential explanations for our results. One is that the lower auction premium for lobbying winners reflects less generous non-price auction terms. In particular, if non-lobbying banks are more likely to bid with a loss-sharing agreement (as discussed in Section 2), the FDIC may allocate the failed bank to a lobbying bank at a lower auction premium, and still the lobbying bank may overall not pay less than a non-lobbying bank. In this case, however, there is no reason to expect why lobbying winners are worse matches with the failing bank (in addition, our specification in Table 6 includes a comprehensive list of bid terms such as the presence of a loss-sharing agreement or the percentage of assets covered by the loss-sharing agreement).

Another explanation is that, in the case of a particularly bad bank, the FDIC will find it difficult to find willing buyers and uses its connection to the lobbying bank to "dump" the bank. However, this would be inconsistent with our results on the auction premium, as in this case the covered bidder would submit a low bid, which should result in a higher (or at least not lower) auction premium. Moreover, this fails to explain why lobbying bidders are worse matches to the target bank.

5. Conclusion

In this paper, we focus on the political economy of the resolution of failed banks during the financial crisis and its aftermath. Studying the universe of P&A transactions between 2007 and 2016, we find evidence that bidders engaged in lobbying activities and/or having connected board members are in a better position to win a failed-bank auction. Further evidence suggests that rent seeking is more likely to account for this finding. We show that eventual acquirers with lobbying activities deliver inferior outcomes in terms of post-acquisition efficiency, consistent with rent-seeking channel of bank lobbying. We also assess the economic magnitude of the cost associated with the lobbying on failed-bank auctions and find that the cost imposed to the DIF is meaningful: The average effect estimated is equal to 24.8 percent of the total resolution losses. Of course, having shown that lobbying creates distortions

Table 8
Post-Acquisition Efficiency. This table presents the results from fixed-effect panel regression models. The dimension of the constructed panel is at the joint-bank and quarter levels. Both dependent and independent variables are the weighted average of the acquirer and the failed bank by total assets in the quarters prior to failure dates and then those of acquirers in the quarters after failure dates. All quarters between 2003 and 2017 are included. Post-Acquisition is an indicator that takes the value of 1 for the quarters after the failure date. Lobbying Regulators > 0 and Lobbying Regulators are measured in the year of the failure, are absorbed by Joint-Bank Fixed Effects, except for the interaction terms. Joint-bank controls include Size, Liquidity Ratio, Tier 1 Capital Ratio, NPL Ratio, OREO Ratio, CRE Loans (%), C&I Loans (%), and Residential Loans (%). All variables are winsorized at the 1st and 99th levels. Robust standard errors are presented in the parentheses and clustered at the joint-bank level. ***, **, and * represent statistical significance at 1%, 5%, and 10% levels.

	(1)	(2)	(3)	(4)
	ROA (%)		Cost Ratio (%)	
(Lobbying Regulators > 0) × Post-Acquisition	−0.7192***		0.0538*	
	(0.0863)		(0.0317)	
Lobbying Regulators × Post-Acquisition		−0.0549***		0.0045*
		(0.0069)		(0.0024)
Post-Acquisition	0.8230***	0.8228***	−0.0062	−0.0065
	(0.0777)	(0.0776)	(0.0127)	(0.0127)
Size	0.4606***	0.4617***	−0.0694***	−0.0696***
	(0.0522)	(0.0524)	(0.0133)	(0.0133)
Liquidity Ratio	−0.0155***	−0.0156***	−0.0017**	−0.0017**
	(0.0031)	(0.0031)	(0.0007)	(0.0007)
Tier 1 Capital Ratio	0.0650***	0.0650***	−0.0010	−0.0010
	(0.0084)	(0.0084)	(0.0012)	(0.0012)
NPL Ratio	−0.0884***	−0.0885***	0.0066***	0.0066***
	(0.0074)	(0.0074)	(0.0019)	(0.0019)
OREO Ratio	−0.0943***	−0.0941***	0.0143***	0.0143***
	(0.0257)	(0.0257)	(0.0050)	(0.0050)
CRE Loans (%)	−0.0034	−0.0033	−0.0015*	−0.0015*
	(0.0034)	(0.0034)	(0.0009)	(0.0009)
C&I Loans (%)	−0.0029	−0.0029	0.0011	0.0011
	(0.0035)	(0.0035)	(0.0009)	(0.0009)
Residential Loans (%)	0.0014	0.0014	0.0040***	0.0040***
	(0.0031)	(0.0031)	(0.0012)	(0.0012)
Quarter Fixed Effects	Yes	Yes	Yes	Yes
Joint-Bank Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R-squared	0.298	0.298	0.597	0.598
Auctions	427	427	427	427
Observations	23,227	23,227	23,227	23,227

at the bank level does not imply any welfare losses, as a swift and smooth acquisition (by lobbying banks) may benefit financial stability and lower the chances of economic disruptions. Understanding and quantifying further the welfare consequences of lobbying remains a fruitful area of future research.

Declaration of Competing Interest

None.

CRediT authorship contribution statement

Deniz Igan: Conceptualization, Methodology, Investigation, Writing – review & editing. **Thomas Lambert:** Conceptualization, Methodology, Validation, Formal analysis, Writing – original draft. **Wolf Wagner:** Conceptualization, Methodology, Formal analysis, Writing – review & editing. **Eden Quxian Zhang:** Conceptualization, Methodology, Software, Formal analysis, Investigation, Writing – review & editing.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.jbankfin.2022.106496.

Appendix A: Variable definitions

Table A1
Variable Definitions.

Variable	Definition
Auction Outcomes:	
Win	Indicator that takes the value of 1 if the bank wins the auction of a failed bank, and 0 otherwise.
Bid	Indicator that takes the value of 1 if the bank submits a bid in the auction of a failed bank, and 0 otherwise.
Net Discount	The asset discount of the winning bid expressed as percentage points of total assets of the failed bank plus deposit premium, standardized by total assets of the failed bank.
Net Discount Differential	Net Discount of the winning bid minus Net Discount of the cover bid.
%Assets Bid	Percentage of assets covered in the bid.
%Assets LSA	Percentage of assets covered in the loss-sharing agreement.
All Bank & All Deposits	Indicator that takes the value of 1 if the bid is a whole-bank acquisition including all deposits, and 0 otherwise.
Loss-Sharing Agreement	Indicator that takes the value of 1 if the bid contains any loss-sharing agreement with the FDIC, and 0 otherwise.
Linked Bid	Indicator that takes the value of 1 if the bid is a linked bid as identified by the FDIC, and 0 otherwise.
Number of Bids	Log of 1 plus the number of bids received by the FDIC for the auction of a failed bank.
Special Interests:	
Lobbying Regulators > 0	Indicator that takes the value of 1 if the bank lobbies any banking regulators, including the Department of Treasury, the FDIC, Fed, OTS, and OCC, during the current year of bank failure date, and 0 otherwise.
Lobbying Regulators	Log of 1 plus lobbying expenditure on banking regulators during the current year of bank failure date.
Lobbying > 0 Past	Indicator that takes the value of 1 if the bank overall lobbying expenditures in the current year of bank failure date is positive, and 0 otherwise.
Lobbying Regulators > 0	Indicator that takes the value of 1 if the bidding bank lobbies banking regulators during a period of eight quarters prior to the failure date, and 0 otherwise.
Board Connection	Indicator that takes the value of 1 if any board members of the bidding bank are currently serving or have served on the board of advisory committees/councils of the regulatory agencies, including FDIC, OTS, OCC, Federal Reserve Banks, and FRB, at the time of target failures, and 0 otherwise.
Campaign Contribution	Indicator that takes the value of 1 if the bidding bank makes campaign contributions to the congressmen who are currently sitting in the House Committee on Financial Services, or the Senate Committee on Banking, Housing, and Urban Affairs, during the election cycle of the failure date, and 0 otherwise.
Banking Subcommittee Representation	Indicator that takes the value of 1 if there is a senator from the State or a House Representative on the banking subcommittees from the congressional district where the headquarter of the bidding bank is located at the time of the failure date, and 0 otherwise. The banking subcommittees include Senate Banking, House, and Urban Affairs Subcommittee on Financial Institutions, and House Financial Services Subcommittee on Consumer Protection and Financial Institutions.
Variable	Definition
Bank Characteristics:	
ROA	Four times quarterly net income divided by the average of total assets at quarter *t* and *t-1*.
Cost Ratio	Four times the quarterly total expenses of the bank (interest expenses + non-interest expense) divided by the total assets of the bank in each quarter.
Size	Log of total assets (in thousand dollars).
Liquidity Ratio	Liquid assets (the sum of cash & balances due from depository institutions, Federal funds sold and reverse repurchase, held to maturity securities, and available-for-sale securities, excluding ABS and MBS) divided by total assets.
Tier 1 Capital Ratio	Tier 1 risk-based capital ratio.
NPL Ratio	Non-performing loans (non-accrual) and 90 days or more past due divided by total loans.
OREO Ratio	Other real estate owned divided by total assets.
CRE Loans	Percentage of commercial and real estate (non-farm and non-residential) loans relative to total loans.
C&I Loans	Percentage of commercial and industrial loans relative to total loans.
Residential Loans	Percentage of residential real estate loans relative to total loans.
Core Deposits	Total core deposits (transaction accounts + other savings deposits excluding MMDAs + time deposits less than $100,000) divided by total deposits.
State Bank	Indicator that takes the value of 1 if the bank is regulated by a state regulator, and 0 otherwise.
Estimated CAMELS Rating	Estimated CAMELS rating provided by SNL Financial.
Proximity to Failed Banks:	
Distance	Log of average pairwise distance in kilometers between all pairs of branches of the failed bank and the bidding bank.
Distance *X* Loans	Absolute difference in *X* Loans between the bidder and the failed bank, with *X* meaning CRE, C&I, or Residential Loans.
Change in HHI	The increase in local deposit market concentration that would result from a bidding bank acquiring the failed bank, averaged across the branch network of the failed bank (2 × the product of the local deposit market shares of the failed bank and the bidder × 1000).

Appendix B: Proofs

Proof of Proposition 1. We first solve for the equilibrium bid strategies of both banks. Consider first the choice of bank A, given that bank B plays $b_B = \alpha_B \theta_B$. Suppose first lobbying is effective. This case is straightforward: Whenever $b_B < \theta_A$, bank A plays $b_A = b_B$ (to be precise, a small amount more than b_B), wins the auction and gains $\theta_A - b_B$. When $b_B \geq \theta_A$, the bank cannot profitably win the auction, and will hence play $b_A \in (0, b_B)$; without loss of generality we assume that it plays $b_A = 0$. Suppose next that lobbying is ineffective. Bank A will then maximize the following problem:

$$\max_{b_A} (\theta_A - b_A)\text{Prob}(b_B(\theta_B) \leq b_A).$$

Since bank B's highest possible bid is $\alpha_B q$, bank A would never bid more than $\alpha_B q$. Moreover, since θ_B is uniformly distributed on $[0, q]$ and $b_B(\theta_B) \leq b_A$ if and only if $\theta_B \leq b_A/\alpha_B$, we can write the problem as $\max_{b_A}(\theta_A - b_A)\frac{b_A}{\alpha_B q}$. The solution to the problem is $b_A(\theta_A) = \frac{\theta_A}{2}$ if $\frac{\theta_A}{2} \leq \alpha_B q$, and $b_A(\theta_A) = \alpha_B q$ otherwise.

The problem for bank B is then

$$\max_{b_B} (1-\phi)(\theta_B - b_B)\frac{b_B}{\frac{1}{2}q} + \phi(\theta_B - b_B)\frac{b_B}{q},$$

as in the case of lobbying being effective, the probability of winning is only $\frac{b_B}{q}$. This problem has the same solution as for bank A when lobbying is not effective. We can summarize the equilibrium strategies as follows. Bank B always bids half of its private valuation. Bank A does so as well when lobbying is not effective. When lobbying is effective, it bids half of the valuation of bank B (as this is what bank B bids) if $\frac{\theta_B}{2} < \theta_A$, and zero otherwise. Formally,

$$b_A^*(\theta_A) = \begin{cases} \frac{\theta_A}{2} \; if \; L = 0 \\ \frac{\theta_B}{2} \; if \; L = 1 \; and \; \frac{\theta_B}{2} < \theta_A, \\ 0 \; if \; L = 1 \; and \; \frac{\theta_B}{2} \geq \theta_A \end{cases}$$

$$b_B^*(\theta_B) = \frac{\theta_B}{2},$$

in which $L \in \{0, 1\}$ is the indicator variable for lobbying being effective.

Next we analyze how the various auction outcomes depend on the lobbying status of a bank.

(i) Likelihood of winning: When lobbying is ineffective ($L = 0$), the strategies are fully symmetric and both banks have an equal likelihood of winning, each bank thus wins with probability $\frac{1}{2}$. When lobbying is effective, bank A will win the auction whenever $\frac{\theta_B}{2} \leq \theta_A$, which occurs with a likelihood of $\frac{3}{4}$ under the uniform distribution. The total likelihood of winning for bank A is hence $\pi_A = (1-\phi)\frac{1}{2} + \phi\frac{3}{4} = \frac{1}{2} + \frac{\phi}{4}$. The likelihood of bank B winning is $\pi_B = 1 - \pi_A = \frac{1}{2} - \frac{\phi}{4}$, thus we have that $\pi_A > \pi_B$.

(ii) Premium paid by the winning bank: The expected premium paid by bank A is given by

$$\underset{A}{Prem} = \frac{1}{q}\frac{1}{\pi_A}(1-\phi)\frac{1}{q^2}\int_0^q\left(\int_0^{\theta_A}\left(\frac{\theta_A}{2} - \frac{\theta_B}{2}\right)d\theta_B\right)d\theta_A = \frac{1}{3}\frac{1-\phi}{2+\phi},$$

and the premium for bank B is

$$\underset{B}{Prem} = \frac{1}{q}\frac{1}{\pi_B}\left[(1-\phi)\frac{1}{q^2}\int_0^q\left(\int_{\theta_A}^q\left(\frac{\theta_B}{2} - \frac{\theta_A}{2}\right)d\theta_B\right)d\theta_A + \phi\frac{1}{q^2}\int_0^{\frac{q}{2}}\left(\int_{2\theta_A}^q\left(\frac{\theta_B}{2} - \frac{\theta_A}{2}\right)d\theta_B\right)d\theta_A\right] = \frac{1}{3}\frac{1+\phi\frac{5}{4}}{2-\phi},$$

from which follows that $Prem_A < Prem_B$.

(iii) Auction efficiency: When bank A wins the auction, we have

$$Eff_A = \left[(1-\phi)\frac{\int_0^q\left(\int_0^{\theta_A}\theta_A d\theta_B\right)d\theta_A}{\int_0^q\left(\int_0^{\theta_A}d\theta_B\right)d\theta_A} + \phi\left(\frac{1}{3}\frac{\int_0^{q/2}\left(\int_0^{2\theta}\theta_A^{q/2}d\theta_B\right)d\theta_A}{\left(\int_0^{2\theta}d\theta_B\right)d\theta_A} + \frac{2}{3}q\frac{3}{4}\right)\right] = (1-\phi)\frac{2}{3} + \phi\frac{11}{18}$$

and when bank B wins, we have

$$Eff_B = \left[(1-\phi)\frac{\int_0^q\left(\int_0^{\theta_A}\theta_A d\theta_B\right)d\theta_A}{\int_0^q\left(\int_0^{\theta_A}d\theta_B\right)d\theta_A} + \phi\left(\frac{\int_0^{q/2}\left(\int_{2\theta_A}^{2\theta}\theta_A^{q/2}d\theta_B\right)d\theta_A}{\left(\int_{2\theta_A}^{2\theta}d\theta_B\right)d\theta_A}\right)\right] = (1-\phi)\frac{2}{3} + \phi\frac{2}{3}$$

and hence that $Eff_A < Eff_B$. ■

Proof of Proposition 2. We assume for simplicity that bank B believes the valuation of bank A is uniformly distributed on $[0, q]$ as in the baseline model without lobbying ($\phi = 0$) (the qualitative results of the proposition do not depend on this assumption). Bank B's problem is thus the same as in the baseline model with $\phi = 0$. Conditional on θ_A, the optimization problem for bank A is also the same in the baseline mode without lobbying. Hence, the equilibrium bidding strategies are the same as well (that is, banks bid half of their valuation).

Impact on likelihood of winning: In the case of bank A having normal valuation (occuring with probability $1-\phi$), the game is symmetric and bank A wins with probability $\frac{1}{2}$. When bank A has high valuation, it wins with probability 1. The total probability of winning for bank A and bank B is hence $\pi_A = (1-\eta)\frac{1}{2} + \eta$ and $\pi_B = (1-\eta)\frac{1}{2}$, and hence $\pi_A > \pi_B$.

Impact on premium: When bank A has normal valuation, the game is symmetric, and both banks pay the same premium as in the baseline model for $\phi = 0$, that is, $Prem = \frac{1}{6}$. In case of high valuation, only bank A wins and the expected premium is $Prem = \frac{1}{2} - \frac{1}{4} = \frac{1}{4}$. The premium paid by bank A when it wins is thus $Prem_A = \frac{(1-\eta)\frac{1}{2}\frac{1}{6}+\eta\frac{1}{4}}{(1-\eta)\frac{1}{2}+\eta}$. Bank B only wins in the case of normal valuation, and pays an expected premium of $Prem_B = \frac{1}{6}$, thus the premium when bank B wins is lower.

Impact on auction efficiency: In the case of normal valuation, the situation is symmetric and auction efficiency is the same as in the baseline model withouht lobbying: $Eff = \frac{2}{3}$. In the case of high valuation, bank A always wins and auction efficiency is 1 Thus total auction efficiency when bank A wins is $Eff_A = \frac{(1-\eta)\frac{1}{2}\frac{2}{3}+\eta}{(1-\eta)\frac{1}{2}+\eta}$, which is larger than the auction efficiency when bank B wins, $Eff_B = \frac{2}{3}$. ■

Proof of Proposition 3. Suppose we are dealing with a low-quality bank first. As banks are unaware that their valuation assignment is not random, they face exactly the same problem as in the baseline model (with $\phi = 0$) and bid half of their valuation: $b_A^* = \frac{\theta_A}{2}$ and $b_B^* = \frac{\theta_B}{2}$. Bank A will win with probability 1 and since the stochastic structure is exactly the same as in the baseline model with $\phi = 0$, we have that $Prem_A = \frac{1}{6}$ and $Eff_A = \frac{2}{3}$. The total resolution costs of the FDIC can be calculated as follows:

$$R_A = 1 - \frac{1}{q_B^2}\int_0^q \left(\int_0^{\frac{\theta_A}{2}} \frac{\theta_A}{2} d\theta_B\right) d\theta_A = 1 - \frac{1}{6}q_B$$

If we are dealing with a high-quality bank, bank B will win with probability 1, and we have for the auction premium and efficiency: $Prem_B = \frac{1}{6}$ and $Eff_B = \frac{2}{3}$; the same as for bank A. The overall probabilities of winning for either bank is $\frac{1}{2}$, so we also have that $Prem_A = Prem_B$. The resolution cost in the case of the high-quality bank is $R_B = 1 - \frac{1}{6}q_G$, and we thus have that R_A is strictly higher than the resolution cost when bank B wins. ■

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