Home Truths: Promises and Challenges in Linking Mortgages and Political Influence

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What can "big data" tell us about the dynamics shaping the regulation of and activities in housing and mortgage markets? This paper describes a detailed database of the lobbying activities, campaign contributions, political connections, and mortgage lending activities of the financial industry. A review of the findings of recent research that has utilized this data set suggests that the political influence of the financial industry may have a bearing on the regulation of mortgage markets and, in turn, on risk-taking by lenders. A key challenge is deciphering the motivations behind the politically targeted activities of the financial industry.

Keywords: lobbying, political influence, mortgage lending, financial regulation

It is impossible to think about regulation and policy frameworks without thinking about the political economy factors that shape them. The public-interest theory of regulation depicts government intervention as a correction to market inefficiencies to maximize social welfare. But regulation is not written in a vacuum and may be influenced by private-interest groups, so much so that rent extraction at the expense of others actually ends up reducing social welfare.

Finance offers a particularly interesting opportunity to study the political economy of regulation. Financial regulation is well justified by the market failures stemming from moral hazard, asymmetric information, and systemic risk. Indeed, costly financial crises—often alleged to be a consequence of inadequate regulation and ineffective supervision—attest to the importance of well-functioning, resilient financial markets. The financial industry's interference in the design and implementation of specific regulations may be related to financial crises because special-interest groups may tailor the financial regulatory landscape to better fit their own needs and may also take excessive risks under lax regulations that they helped to enact (Acemoglu 2009; Calomiris 2009; Johnson 2009).

Establishing a link between political influence and financial regulation and risk-taking in a formal setup, especially with the backdrop of the recent financial crisis, is an intriguing exercise, but it is often constrained by the lack of readily available, detailed information on politically targeted activities. That task has been taken up, however, in a recent strand of literature by researchers who have meticulously invested in merging different data sets to connect the dots.

This paper describes a detailed database of a rather comprehensive data set documenting the political influence of the finance, insurance, and real estate (FIRE) industry in the

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United States, legislative actions related to financial regulation, and mortgage lending activities by politically active financial institutions from 1999 through 2006.

The paper then gives an account of recent research utilizing this data set. There are many interesting questions one can ask regarding not only the process shaping the regulatory framework but also the outcomes realized against the backdrop of the resultant regulatory framework. For instance, are politically targeted activities by FIRE institutions linked to the legislative outcomes of bills on financial regulation? Do legislators' network connections with the financial industry and its lobbyists affect their decisions to support or oppose certain proposals? Is the risk-taking behavior of lenders that lobby different from that of lenders not engaged in lobbying? How did these lobbying lenders perform in 2008 when turmoil hit financial markets? Do lobbying and other politically targeted activities by FIRE institutions make information-sharing possible, thus facilitating "better" financial regulation and fostering mortgage market development?

The studies summarized here answer some but not all of these questions. The findings so far suggest that the political influence of the financial industry has a bearing on the regulation of mortgage markets and, in turn, on lenders' risk-taking. In particular, the legislative proposals that were in favor of deregulation and on which more lobbying dollars were spent were more likely to be signed into law. In this more relaxed regulatory environment, lenders that lobbied took larger risks and suffered worse losses. This may seem to support the popular interpretation that regulatory capture paves the way to costly financial crises.

A key challenge, however, is deciphering the motivations behind the politically targeted activities of the financial industry. Doing so could shed some light on the question of whether these activities improve social welfare. The paper concludes with a discussion of possible directions that future research could take.

CONSTRUCTING A DATA SET OF POLITICAL INFLUENCE, FINANCIAL REGULATION, AND MORTGAGE LENDING

Many of the data sources commonly used to analyze the political economy of financial regulation and mortgage markets have been around for years. What arguably has changed is the increased computational capacity that facilitates the merging of different data sets and allows more sophisticated analyses of existing data sets.[1]

In what follows, I describe in detail the main data sets for analyzing the political influence of financial institutions, legislative actions on financial regulation, and mortgage lending. I then explain how these data sets have been merged in order to study particular linkages.

Political Influence

An individual, firm, or other entity can influence the political and legislative process in various ways. Here I focus on three activities: campaign contributions, lobbying, and networking.

Campaign Contributions

In the United States, special-interest groups and other private entities, including individuals, can make campaign finance contributions, in particular through political action committees (PACs). PACs, often representing special-interest groups, are organized for the purpose of raising and spending money to elect—or sometimes defeat—particular candidates. The total amount that PACs can contribute to an individual candidate's committee is capped: it cannot exceed $5,000 per election (primary, general, or special). Similarly, a PAC cannot give more than $15,000 annually to any national party committee or more than $5,000 annually to any other PAC. On the receiving side, a PAC may receive up to $5,000 from any one individual, PAC, or party committee per calendar year. These limits are applied on a consolidated basis to affiliated PACs by treating them all as one entity.

Data on PAC contributions are available

1. Space limitations prohibit a thorough review of the literature that has utilized some of the data sets used here. For two recent papers that are worth mentioning for their innovative methods in exploiting the data, see Bonica (2016) on campaign contributions and Agarwal et al. (2012) on the Home Mortgage Disclosure Act (HMDA).

through the Federal Election Commission (FEC) and the Center for Responsive Politics (CRP). PACs can be linked to a corporate or industry sponsor as well as, naturally, to a legislator. Compiling the data from these sources is relatively straightforward, and such data have been utilized to a considerable extent in the political economy literature.[2]

Lobbying Expenditures

In addition to campaign contributions, individuals, companies, and special-interest groups can legally influence the policy formation process by carrying out lobbying activities in the executive and legislative branches of the federal government. Some special interests hire lobbying firms; others have lobbyists working in-house. These lobbying activities, albeit accounting for the bulk of politically targeted expenditures, have received less attention in the literature.

With the passage of the Lobbying Disclosure Act (LDA) of 1995, individual companies and organizations have been required to provide a substantial amount of information on their lobbying activities. Since 1996, all lobbyists (intermediaries who lobby on behalf of companies and organizations) have had to file semiannual reports to the Senate Office of Public Records (SOPR), listing the name of each of their clients (firms), the total income they have received from each client, and the specific issues that are the focus of their lobbying efforts. In parallel, all firms with in-house lobbying departments are required to file similar reports stating the total dollar amount they have spent (either in-house or in payments to external lobbyists). LDA requires the disclosure of not only the dollar amounts actually received and spent but also the issues targeted by lobbying activity. Thus, unlike PAC contributions, the lobbying expenditures of companies can be associated with very specific, targeted policy areas.

The data are based on the semiannual lobbying disclosure reports filed with the SOPR and can be compiled from two sources: the SOPR website and the website of the Center for Responsive Politics. The CRP website provides information on lobbying expenditures as well as on the general issues with which lobbying is associated. However, the information is not user-friendly (for example, getting details requires clicking on each firm name) and often has to be cross-checked with individual lobbying reports, which are publicly available in PDF format on the SOPR website. Moreover, the CRP does not provide information on the specific issues (or particular regulations) with which the lobbying is associated. Hence, one first needs to extract the entire lobbying database from the CRP website—comprising about 16,000 unique firms over the period 1999–2006, with a maximum of around 9,000 firms in any one year—and then determine those firms for which more detailed information is needed to address the research question at hand. For instance, after matching firms with mortgage lending activities in the HMDA database, one would then examine the individual PDF reports of the approximately 250 matched firms to extract detailed information, including specific issues.[3]

LDA requires lobbying firms and organizations to register and file reports of their lobbying activities not only with the Secretary of the Senate (in the SOPR) but also the Clerk of the House of Representatives. In general, it requires registration by an individual lobbyist (or the lobbyist's employer if the firm employs one or more lobbyists) within forty-five days after the lobbyist first makes—or is employed or retained to make—a lobbying contact with the president, the vice president, a member of Congress, or any other specified federal officer or employee, including certain high-ranking members of the uniformed services.

A registrant must file a report for the semiannual period in which registration initially occurred and for each semiannual period thereafter, including the period during which registration terminates. Lobbying firms—entities with one or more lobbyists, including self-

2. Note that focusing only on PACs probably understates politically targeted activities through campaign contributions because individual contributions (for example, from principals at closely held mortgage lenders) are not included.

3. It would be possible to at least partially automate this process using Python or similar software.

employed individuals who act as lobbyists for outside clients—are required to file a separate report for each client covered by a registration. Organizations employing in-house lobbyists file a single report for each semiannual period. The semiannual report must be filed no later than forty-five days after the end of the semiannual period beginning on the first day of January and the first day of July of every year in which a registrant is registered. LDA requires the Secretary of the Senate and the Clerk of the House of Representatives to make all registrations and reports available to the public as soon as practicable after they are received.

Under section 3(10) of the LDA, an individual is defined as a "lobbyist" with respect to a particular client if he or she makes more than one lobbying contact (more than one communication to a covered official) and the individual's "lobbying activities" constitute at least 20 percent of his or her time in services for that client over any six-month period. "Lobbying activity" is defined in section 3(7) of the LDA as "lobbying contacts or efforts in support of such contacts, including background work that is intended, at the time it was performed, for use in contacts, and coordination with the lobbying activities of others."

Lobbying firms are required to provide a good-faith estimate rounded to the nearest $20,000 of all lobbying-related income in each six-month period. Likewise, organizations that hire lobbyists must provide a good-faith estimate rounded to the nearest $20,000 of all lobbying-related expenditures in a six-month period. An organization or a lobbying firm that spends less than $10,000 in any six-month period does not have to state its expenditures. In those cases, CRP treats the figure as zero.

The CRP calculates annual lobbying expenditures and incomes (of lobbying firms) by adding midyear totals and year-end totals. Whenever a lobbying report is amended, the CRP generally uses income and expense figures from the amendment instead of those from the original filing. Often, however, CRP staff determine that the income and expenditures on the amendment or termination report are inaccurate. In those instances, the CRP uses figures from the original filing.

Occasionally, income that an outside lobbying firm reports receiving from a client is greater than the client's reported lobbying expenditures. Many such discrepancies can be attributed to filer error. In cases not already resolved in previous reports, and where the discrepancy exceeds the $20,000 that can be attributed to rounding, the CRP uses the client's expenditure total rather than the lobbying firm's reported income. The only exception is when a client reports no lobbying expenditures, while the outside lobbying firm lists an actual payment. In such cases, the CRP uses the figure reported by the lobbying firm.

When the data appear to contain errors, the CRP consults official Senate records and, when necessary, contacts the SOPR or the lobbying organizations for clarification. The CRP standardizes variations in names of individuals and organizations to clearly identify them and more accurately represent their total lobbying expenditures.

Where both a parent and its subsidiary organizations lobby or hire lobbyists, the CRP attributes lobbying spending to the parent organization. Therefore, the lobbying totals reported by the CRP for a parent organization may not reflect its original filing with the Senate, but rather the combined expenditures of all related entities. However, to calculate lobbying expenditures by sector and industry, the CRP counts each subsidiary within its own sector and industry, not those of its parent. The CRP makes this distinction when it has the information necessary to distinguish some or all of the subsidiary's lobbying expenditures from either the subsidiary's own filing or the receipts reported by outside lobbying firms. For example, before tobacco giant Altria Group spun off Kraft Foods in 2007, Altria's original filing included lobbying for Kraft in its expenditures, but in the data set the CRP isolated Kraft's payments to outside lobbyists and included them under "Food Processing and Sales."

Researchers using the CRP data often face two questions: first, how to treat mergers during election cycles, and, second, how to treat trade associations. The standard procedures used are as follows. When companies merge within any two-year election cycle, their lobbying expenditures are combined and attributed

to the new entity in order to correlate lobbying data with campaign contribution data for each particular organization and industry.

In addition to firms' lobbying expenditures, lobbying expenditures by FIRE trade associations—such as the Electronic Check Clearing House Organization (ECCHO) and the Financial Services Roundtable—are of interest. To split the total association expenditures among the various association members, first membership information from approximately 150 association websites are obtained. For example, according to its website, ECCHO has more than 2,200 members, including Bank of America, Citibank, and SunTrust. Next, a share of the associations' lobbying expenditures is assigned to each of their member firms by dividing each firm's lobbying expenditures by the sum of all association members' lobbying expenditures. Then, for each firm and each year, the firm's share is multiplied by its association's total lobbying expenditures so that the association lobbying expenditures are distributed across all of the member firms.[4]

Interestingly, the LDA also requires an organization to state the issues on which the registrant engaged in lobbying during the reporting period. At least one issue must be entered by the registrant or filer from the LDA's list of seventy-six issues. When a filer lists more than one issue, a separate page of the form for each code selected must be submitted.

Under each general issue heading, the filer must also list the specific issues for which lobbying activity occurred during the semiannual period—for example, by listing specific bills before Congress or specific executive branch actions.

Legislative Actions on Financial Regulation

Research on the political economy of financial regulation focuses on five general lobbying issues: accounting, banking, bankruptcy, housing, and financial institutions. Moreover, certain House and Senate bills are of particular interest since they promote either tight or lax restrictions in these five general areas of interest.

Bills that introduce tight restrictions on lenders focus primarily on predatory lending practices and high-cost mortgages. For example, many bills contain restrictions or limits on annual percentage rates for mortgages, negative amortization, prepayment penalties, balloon payments, late fees, or the financing of mortgage points and fees. Some of these bills introduce expanded consumer disclosure requirements regarding high-cost mortgages (such as including the total cost of lender fees on loan settlement paperwork or disclosing to consumers that they are borrowing at a higher interest rate).

Many of the bills prohibit high-cost mortgage lenders from engaging in other unfair or deceptive practices. Creditors are to evaluate each consumer's ability to repay a loan before making the loan, and one bill stipulates that mortgage debt is not to exceed 50 percent of an individual's income and income is to be verified. Creditors are not to encourage consumers to default on loans; moreover, mortgage lenders and other creditors must report their consumers' payment histories to credit reporting agencies. High-cost mortgage lenders may not accelerate a consumer's debt if the consumer is making payments on time. In addition, individuals who provide mortgage lending or brokerage services must be adequately trained in high-cost lending. Civil penalties for engaging in predatory lending practices are increased.

Some of the bills that firms and associations have lobbied for are closely related, as it is common for various versions of the same bill to come in front of the House or Senate in the legislative process. To exploit any information that might be contained in these different discussions of a specific issue, groups of bills that have the same name (or very similar names) or contain essentially the same language are identified. For example, the following bills are considered to be in the same group: the Predatory Lending Consumer Protection Act of 2000 (S. 2415), the Predatory Lending Consumer Protection Act of 2000 (H.R. 4250), the Predatory Lending Consumer Protection Act

4. An alternative apportionment would be using the total assets as weights, since large banks are likely to pay more in dues than small ones. This does not alter the empirical results.

of 2002 (S. 2438); and the Predatory Lending Consumer Protection Act of 2001 (H.R. 1051). Once the related bills are grouped, the total number of times an individual bill or at least one of the bills in a group is listed as a specific issue of interest by either firms or associations. Based on these counts, the bills and groups of bills are ranked by "popularity." The first nineteen spots in the ranking are groups of bills; the Gramm-Leach-Bliley Act (S. 900) is the most common individual bill for which firms and associations have lobbied. There is one ranking for all of the bills and groups of bills and another for the top one hundred most common bills or groups of bills. These counts and rankings are used as weights to split the total lobbying expenditure. Essentially, the firms' lobbying expenditure is multiplied by the count and the two rank variables to produce three scaled lobbying expenditure variables.

Network Connections

To analyze the extent to which connectedness may have an influence on the legislative process or make lobbying more effective, whether and how the career paths of various legislators, lobbyists, and financial executives have crossed (the "revolving door") is documented. The primary measure of network connections captures the association between the legislators and the lobbyists working on a particular bill. The variable is measured at the legislator-bill level and uses information on the professional background of the lobbyists hired to work on that bill. The names of the lobbyists are extracted from the lobbying reports, while the information on their backgrounds is compiled from various sources, including *Washington Representatives Directory,* published by Columbia Books in its suite of www.lobbyists.info products, and GovTrack.us.

This bill-legislator level variable is defined as a dummy that equals 1 if at least one of the lobbyists working on a specific bill is connected to a particular legislator. This connection is defined either by the lobbyist having worked in that legislator's office or by the lobbyist having worked with a committee on which the legislator had a seat. Conceptually, this measure is close to the one used by Jordi Blanes-Vidal, Mirco Draca, and Christian Fons-Rosen (2012). The difference is that they look at the connections from an individual lobbyist's perspective while the variable for each bill-legislator pair is constructed by determining whether any of the lobbyists who have worked on a particular bill were employed as staffers in a specific legislator's office or on a committee associated with a specific legislator who voted on that bill.

Also used is a legislator-level variable to capture the connectedness of the legislators with Wall Street. This is a dummy that equals 1 if the legislator ever worked in FIRE (capturing the networks directly linking Wall Street to Capitol Hill). This variable is similar in spirit to the definition of connections used in Faccio (2006) and Braun and Raddatz (2009). It is possible to further distinguish this measure chronologically in an alternative construction so that it reflects whether the legislator worked in the financial industry after her time in public office. These variables are constructed using biographical information on the legislators from various sources, including GovTrack.us.

Actions

There are various points in the legislative process at which a legislator makes her stance on the proposed bill known. Obviously, recorded votes on passage constitute one such point, but as mentioned earlier, not all bills get to this final stage. For those that do (ten out of a total of forty-seven bills), the roll call records for all senators and representatives are obtained from www.voteview.com, a website maintained by Keith Poole. For bills that never make it to the final voting stage (or do but do not have recorded votes), it is important to analyze the information hidden in the earlier stages of the legislative process. Put simply, lobbying may alter the path a bill takes from the very beginning. To explore what inferences one can make based on the observations concerning these bills, data on the sponsorships and co-sponsorships, which indicate support for a bill, are gathered. The source in this case is GovTrack.us. Co-sponsorship on a bill often translates into voting in favor of that bill; Mian, Sufi, and Trebbi (2010) also use co-sponsorship information in addition to actual votes in their

analysis of legislative actions related to the expansion of subprime mortgages.

Details of each of the bills are scrutinized to categorize them into two types: (1) those promoting deregulation ("lax bills") and (2) those advocating tighter regulation of the activities of the lenders ("tight bills"). The provisions of bills make such a lax-tight classification reasonably unambiguous: lax bills are those offering more options to the lenders in conducting their activities, while tight bills impose restrictions on lending activities. For example, the American Dream Downpayment Act opens the door to lower-downpayment loans, enhancing mortgage lending opportunities, whereas the Predatory Lending Consumer Protection Act introduces additional disclosure requirements and increases penalties for creditor violations. The bills are further grouped into six categories based on their similarities to reflect the fact that the bills that end up in the same "category" actually are "reincarnations" of each other. Note that each category and reincarnation pair defines an individual bill.

To explore the relationship between lobbying, connections, and the outcomes of the legislative process in a systematic manner, the actions on bills with opposite implications for the financial industry are translated into a common measure of stance on deregulation. To put it more precisely, "stance in favor of deregulation" is defined as a dummy that takes the value 1 if on the particular lax bill in question the legislator signed up as a (co-)sponsor or her vote was "aye" and 0 if she did not (co-)sponsor the bill or voted "nay."

The primary dependent variable in the empirical analysis measures the probability of a legislator switching her stance from being against to being in favor of deregulation. It is a dummy with value 1 if the legislator changed her vote from "nay" ("aye") to "aye" ("nay") on successive reincarnations of a lax (tight) bill if the bill was ultimately voted on. If the bill did not have a roll call, then the dummy is set to 1 if the legislator switched from not (co-)sponsoring a bill to (co-)sponsoring. For example, a legislator is defined as switching her stance if, say, within the category of "Predatory Lending Consumer Protection Act" she switches from being against the first reincarnation of the bill (H.R. 3901, Anti-Predatory Lending Act of 2000) to being in support of the second reincarnation of the same bill category (H.R. 4213, Consumer Mortgage Protection Act of 2000).

Mortgage Lending

Mortgage lenders are required to provide detailed information on the applications they receive and the loans they originate under the Home Mortgage Disclosure Act (HMDA), enacted by Congress in 1975. The original purpose of HMDA was twofold: to enhance enforcement of antidiscriminatory lending laws and to disseminate information to guide investments in housing.

The act requires financial institutions to disclose information to their regulatory agency about every loan application they receive. Whether an institution is covered depends on its size, the extent of its activity in a metropolitan statistical area (MSA), and the weight of residential mortgage lending in its portfolio. Any depository institution with a home office or branch in an MSA must report HMDA data if it has made a home purchase loan on a one- to four-unit dwelling or has refinanced a home purchase loan and if it has assets above an annually adjusted threshold. Any nondepository institution with at least 10 percent of its loan portfolio composed of home purchase loans must also report HMDA data if it has assets exceeding $10 million. Under these criteria, small lenders and lenders with offices only in nonmetropolitan areas are exempt from HMDA data reporting requirements. Therefore, information for rural areas tends to be incomplete. Yet, U.S. census figures show that about 83 percent of the population lived in metropolitan areas over our sample period, and hence, the bulk of residential mortgage lending activity is likely to be reported under the HMDA. Comparisons of the total number of loan originations in the HMDA and industry sources indicate that around 90 percent of mortgage lending activity is covered in this database. The information covers individual characteristics (such as race, ethnicity, income, and geographic location of the property), loan information (amount requested, response, reasons for denial, and so on), and institution in-

formation (regulatory authority, geographic location, and assets). There were about 250 million loan applications between 1996 and 2007.[5]

Although HMDA is a relatively homogeneous data set considering its size, there are some inconsistencies that need to be dealt with. To make sure that the data are clear of outliers and erroneous values, the following procedures are applied to the raw data:

- Loan amount and applicant income are rounded to a lower limit; hence, all observations below $1,000 and $10,000, respectively, are eliminated.[6]
- Numerous data validity checks operated by the FFIEC found some loan application records (LARs) to be wrong or inconsistent. Such records, after being altered automatically, have been marked as "edited," using a flag. Around 6 percent of all records are marked as edited. Edits are distributed in a homogeneous fashion across time and across space. In any event, those records have been dropped.
- All application records that did not end in one of the three following actions are eliminated: loan originated, application approved but not accepted, application denied. Other actions mostly represent dubious statuses (for example, an application withdrawn by the applicant) or purchased loans; the latter have also been excluded because it is not clear whether they are reported twice, once by the originating institution and again by the purchasing institution.
- HMDA disclosure requirements change, although minimally, from one year to the next to reflect changes in metropolitan area definitions and keep minimum institution size in line with inflation. While there is little to be done to account for the fact that the set of institutions qualifying under the applicable size restrictions changes, the observations that cannot be associated with a metropolitan area are dropped.[7]
- The year 2004 was marked by a major overhaul of the HMDA regulations. With the addition of new variables—including the interest rate when it is set above a certain threshold—the number of variables expanded from 30 to 45. Moreover, the Office of Management and Budget (OMB) increased the number of official metropolitan areas (MAs) from about 320 to about 390. The boundaries of the MAs themselves were sometimes enlarged, increasing the number of lenders required to report. Trends apparent from a comparison of aggregate figures from 2003 and 2004 therefore should be taken with a grain of salt. For example, loan market growth rates are likely to be inflated because in the existing MAs more institutions were required to disclose; at the same time, in a specific MA figures could be understated because parts of the counties that used to form it have been incorporated into a new MA. In such cases, 2004 aggregate figures have been interpolated using 2003 and 2005 figures. Definitions of applicant race, loan purpose, and purchaser type also changed between 2003 and 2004. For applicant race, an applicant ethnicity variable has been added and the race code for Hispanic has been eliminated. Other codes have been rearranged. In the construction of the data set, these variables are transformed into harmonized dummies for selected ethnicities. The loan purpose category "multifamily" was moved to a new specific variable called "property type" in 2004. To harmonize the pre-2003 and post-

5. The data can be ordered on CD-ROMs from the Federal Financial Institutions Examination Council (FFIEC). Starting in 2006, they could also be downloaded from the FFIEC website.

6. It is likely that some of these loans correspond to those that include "information fraud," as identified in Piskorski, Seru, and Witkin (2013).

7. These observations typically turn out to be either loans made in rural areas by institutions whose primary business is in metropolitan areas and are therefore required to report or loans that were made in an area that happened to be reclassified as rural.

2003 data, all multifamily-related records are eliminated.[8]

After these basic steps to clean and harmonize the data are taken, additional procedures can further narrow down the observations of interest for the research question at hand. In particular, to concentrate on a relatively homogeneous set of loans, it is common to drop loans for multifamily purpose from the sample, as this market is distinct from the overall mortgage market for single-family homes. Similarly, federally insured loans are often dropped, as their risk profile is likely to differ from that of other loans.

To the dismay of many researchers looking into the root causes of the 2008 financial crisis, HMDA data do not include a field that identifies whether an individual loan application is a subprime loan application.[9] An alternative way to distinguish between subprime and prime loans is using the subprime lenders list as compiled by the U.S. Department of Housing and Urban Development (HUD) each year. Since 1993, HUD has annually identified a list of lenders that specialize in either subprime or manufactured-home lending. HUD uses a number of HMDA indicators, such as origination rates, share of refinance loans, and proportion of loans sold to government-sponsored housing enterprises, to identify potential subprime lenders. Since 2004, lenders are required to identify loans for manufactured housing and loans in which the annual percentage rate (APR) on the loan exceeds the rate on the Treasury security of comparable maturity by at least three (five for second-lien loans) percentage points and report this information under HMDA. The rate spread can be used as an alternative indicator (to the HUD list) to classify subprime loans. For the years with available data, the ranking of subprime lenders using the rate spread variable alone coincides closely with the ranking in the HUD list. (The correlation is around 0.8.)

Data can then be collapsed to the MSA-lender level with 378 MSAs and almost 9,000 lenders. It is straightforward to compute several variables of interest to assess the riskiness of mortgage lending activities: loan-to-income ratios (LIRs) at origination, loan securitization rates, mortgage loan growth rate, and the extent of activity by lobbying lenders at the MSA level.

Construction of the Final Data Set

Matching Lobbying Firms to Lenders

The matching of the lobbying and HMDA databases is a tedious task that must be done manually, using company names. It starts with all the companies in the lobbying database to perform a first stage of matching with HMDA based on company names. For this purpose, an algorithm is used to find common words in lender names to narrow down the potential matches in HMDA of lenders in the lobbying database and then go through these one by one to determine the right match. Then the unmatched companies filing lobbying expense reports are manually checked one by one to mark any mergers and acquisitions (or other events) that might have induced a name change.[10] Once a list of previous and current names for each company is obtained, a second-stage matching based on an algorithm finds potential matches by searching for common words in the name strings. After the algorithm narrows down the potential matches of lobbying firms among the HMDA lenders, the list is checked one by one once again to determine the right match.

8. Purchaser type has also undergone a minor recoding to make room for "securitization," that is, the packaging and sale of loans on the open market, as opposed to the sale of the whole loan to a private institution or government-sponsored enterprise. No adjustments are made for this change when constructing the data set as the researchers do not distinguish between loan sales and securitized loans.

9. More generally, HMDA does not ask for information on the credit score of the borrower and the loan-to-value ratio of the property. Interestingly, an initiative to expand coverage to these areas in 2004 was fended off by financial industry efforts.

10. The manual part of the process also captures cases of a company changing its name—for example, First Equity Mortgage Bank becoming FEMBi.

To capture the full extent of the lobbying activities carried out by an entity, the corporate structure of the firms that appear in the lobbying database and might be matched to particular HMDA lenders based on the algorithm are meticulously examined. This is necessary because firms that may not be exactly the same are often linked in a corporate sense. Based on the affiliation between the lobbying company and the matches, the lobbying amounts are assigned to four different variables: amount spent by the lender itself, amount spent by the lender's parent company, amount spent by the lender's affiliates, and amount spent by the lender's subsidiary. For instance, Countrywide Financial Corp was a bank-holding company that owned Countrywide Home Loans, Inc., Countrywide Bank N.A., Countrywide Mortgage Ventures, LLC, and Countrywide Real Estate Finance. Both Countrywide Financial Corp and Countrywide Home Loans, Inc., report lobbying expenses, and all subsidiaries of Countrywide Financial Corp, but not the bank-holding company itself, file HMDA information. In this case, the lobbying expense of Countrywide Financial Corp is entered as that of the "parent" in our merged database for all the subsidiaries. The amount spent by Countrywide Home Loans, Inc., is recorded as the lender's own lobbying expense ("self"), while the same amount is entered as that of the "sister" for the other affiliates in the HMDA database. Although it is not the case in this example, it is also possible that the firm filing the lobbying expense report is a subsidiary while the parent company does not appear in the lobbying database, but only in the HMDA database. Such cases are recorded in the form of a fourth variable: the lobbying expense of the "child." If there are no parent companies, affiliates, or subsidiaries, or if the company itself does not appear in the lobbying database, the corresponding lobbying variable is set to zero. The lobbying variables used in the regressions often are a summary of these four variables.

Identifying Lobbying Activity Targeted to the Mortgage Market

The analysis distinguishes between lobbying activities that are related to mortgage market–specific issues and other lobbying activities. Concentrating only on issues related to the five general issues of interest (accounting, banking, bankruptcy, housing, and financial institutions), information is gathered on the specific issues that were listed by the lobbyists as the main issue for the lobbying activity. Then it is decided whether an issue can be directly linked to restrictions on mortgage market lending. For example, the Predatory Mortgage Lending Practices Reduction Act of 2003 (H.R. 1163) and the Fair and Responsible Lending Act of 2005 (H.R. 4471), regulating high-cost mortgages, are bills deemed to be relevant to the mortgage market. On the other hand, the Consumer Debt Prevention and Education Act of 2005 (H.R. 2201) and the Sarbanes-Oxley Act of 2002, although in general related to financial services, have no provisions directly related to mortgage lending and are not classified as mortgage market–specific issues.

After classifying all listed issues, lobbying expenditures on specific issues are calculated by splitting the total amount spent evenly across issues. To be more precise, the total lobbying expenditure is first divided by the number of all general issues and then multiplied by the number of general issues selected. Then it is divided by the total number of specific issues listed under the five general issues and multiplied by the number of specific issues of interest. Suppose firm A spends $300 and lobbies on three general issues (banking and housing, which are general issues of interest, and trade, which is not); it lists two specific issues under banking and housing (H.R. 1163, which is a relevant specific issue, and H.R. 2201, which is not relevant). In this example, the final lobbying expenditure variable is calculated as (((300/3)*2)/2)*1 = $100.

Data at the Metropolitan Statistical Area Level

Despite its broad coverage on borrower, property, and loan characteristics, several important variables that might have an impact on lending decisions are left out of HMDA. The lack of knowledge of the applicant's credit score and age, the interest rate and maturity of the loan, and the property price are just examples of missing fundamental information on which the lender might base the decision.

Some of this essential information might be partially recovered through the use of economic and social indicators available for the geographical area. For that purpose, data come from the following sources:[11]

- *Bureau of Economic Analysis (BEA):* Annual data on personal income, labor and capital remuneration, proprietors' employment, and population
- *Bureau of Labor Statistics (BLS):* Data on unemployment and prices
- *U.S. Census Bureau:* Data on population
- *Office of Federal Housing Enterprise Oversight (OFHEO):* Housing price index (HPI)
- *CoreLogic LoanPerformance* (http://www.corelogic.com/): Mortgage delinquencies (the percentage of subprime loans that are sixty or more days delayed in payment) from four different points in time (February 2005, 2006, and 2007 and November 2007).[12]

FINDINGS

The empirical analysis using the data set described in the previous section documents two of the themes discussed at the beginning of the paper: the impact of political influence on financial regulation legislation, and the heightened risks taken by lobbying lenders.

Let us start by presenting some data on the overall magnitude of politically targeted spending and connections. Between 1999 and 2006, interest groups spent on average about $4.2 billion per political cycle on targeted political activity (table 1). This is the total for campaign contributions and lobbying expenditures, but it is striking that the latter represents

11. As mentioned earlier, the definitions of MAs change over time, both because of change in administrative standards and, more often, because of the dynamic nature of cities. OMB instituted major changes in the definitions in 2003, and HMDA incorporated them into its requirements in 2004. Hence, it is necessary to adjust the aggregation of data to reflect these changes in definitions to make sure that data are consistent pre- and post-2004. Further harmonization of metropolitan area definitions is necessary because some sources use different codes. The new codes identify physical MAs as core-based statistical areas (CBSAs). A CBSA can span more than one state but always covers counties in their entirety without splitting them. Large areas such as New York–Newark–Bridgeport (NY-NJ-CT-PA) are in turn subdivided into metropolitan divisions (MDs) in order to maintain a more comparable area size. MDs, too, are made up of whole counties. The only exception to this rule is the New England city and town areas (NECTAs) used by BLS. For historical reasons, New England city boundaries are administratively allowed to cut across counties. It is therefore impossible to match NECTA borders to CBSA and MD codes; while there are CBSA codes for Boston and other NECTAs, the Census Bureau warns that these codes represent statistical artifacts that do not match exactly the actual borders. For this reason, unemployment and inflation figures for NECTAs have been imputed without adjustment to the corresponding CBSAs (hence, at the highest level of aggregation to minimize errors). CoreLogic LoanPerformance data, excluding the November 2007 version, are expressed using the 1999 codes. At a first approximation, in the 1999 codebook CBSAs were replaced by consolidated metropolitan statistical areas (CMSAs) and MDs were replaced by primary metropolitan statistical areas (PMSAs). In order to fit PMSA-based data to our data set, the data were merged to single counties according to their former PMSA; CBSA values were then calculated by averaging the value taken by each of the counties constituting the CBSA. In this way it was possible to have a continuous and consistent series where one PMSA had been split into two CBSAs in the new codes, or vice versa. However, some of the seventy new MAs of the 2003 definition were new areas that had only recently reached the metropolitan area threshold, and therefore these areas were excluded. HMDA data always report the county where the property is located, and therefore it was possible to associate the 2003 definitions with pre-2004 data. We re-create two artificial, coherent "CBSA" and "MD" variables for the individual data in all seven years. Of course, the pre-2004 coverage of MAs created in 2004 is not complete, as local institutions were deemed to be rural and therefore not required to file under HMDA. On the other hand, a large part of lending in nonmetropolitan cities is still carried out by lenders that are required to file, so we include these observations.

12. These data provided a good set of variables to control for the usual suspects. Options to match individual loans to other data sources where credit score, interest rate, loan-to-value ratio, and so on, are available could also be considered.

Table 1. Targeted Political Activity: Campaign Contributions and Lobbying Expenditures (in Millions of Dollars), 1999–2014

	1999–2000	2001–2002	2003–2004	2005–2006	2007–2008	2009–2010	2011–2012	2013–2014
Campaign contributions	$326	$348	$461	$509	$553	$576	$602	$621
Overall lobbying expenditure	2,972	3,348	4,081	4,747	5,928	6,774	6,380	6,197
Expenditure by FIRE	437	478	645	720	854	922	939	949
Share of FIRE in overall lobbying (percent)	14.7	14.3	15.8	15.2	14.4	13.6	14.7	15.3
Total targeted political activity	$3,298	$3,696	$4,542	$5,256	$6,481	$7,349	$6,982	$6,819

Source: Author's calculations based on data from the Center for Responsive Politics.

by far the bulk of all interest groups' money spent on targeted political activity (close to 90 percent). FIRE, accounting for roughly 15 percent of overall lobbying expenditures in any election cycle, is among the most politically active industries.[13] Approximately 10 percent of all firms that lobbied during this time period were associated with FIRE. Of all 790 legislators in the data set, 14 percent were connected to Wall Street. Moreover, 32 percent of the time the lobbyist hired to work on a financial regulation bill had a connection with a legislator voting on it. Overall, connections between Wall Street and Capitol Hill are not rare occurrences, and there is enough variation in these measures for regression analysis.

Next, let us describe what has been at stake in the recent past on the financial regulation front. The focus of these intense activities was a small set of regulation proposals. In particular, when bills with the same or similar name introduced more than once were consolidated under one broad concept category, there were only six proposals that the lobbying activities of the financial industry targeted. Partially as a reflection of the legislative process, these proposals were introduced in various reincarnations, sometimes as frequently as fifteen times. Lobbying efforts on different reincarnations within a bill category were somewhat evenly distributed across time. Hence, lobbying on a particular issue was not necessarily front- or back-loaded and seemed to be quite persistent through the attempts to turn a proposal into law. In total, 47 bills were considered. In the four Congresses covered in the data set, there were 790 legislators who voted on at least one of these bills. FIRE companies hired 575 lobbyists to lobby on these bills. On average, roughly $4 million was spent on a bill. The bill with the highest lobbying spending by FIRE companies was the Responsible Lending Act of 2003 (H.R. 833), introduced in the 108th Congress as the ninth reincarnation of the Predatory Lending Consumer Protection Act. In comparison, campaign contributions to these legislators by the affected firms were minuscule—$2,000 on average. Lobbying expenditure by the "other side"—that is, the consumer organizations—was also very small (roughly $20,000) compared to the amount spent by the financial firms.

Now turning to the question of whether there is a link between political influence and legislation, we first show that, from 1999 to 2006, the outcome of bills tended to lean in a direction that was favorable to the financial industry. Based on the probability that a bill will

13. FIRE outspent other sectors in every year until 2006 and has closely trailed the front-runner—health care—since then.

Table 2. Legislative Outcome for Financial Regulation Bills Proposed and Discussed, 2000–2006

	Individual Bills				Bills Categorized		
Tight Bill?	Signed into Law?		Number of Bills	Tight Bill?	Signed into Law?		Number of Categories
	No	Yes			No	Yes	
No	84%	16%	32	No	40%	60%	5
Yes	100%	0%	15	Yes	100%	0%	1
Number of bills	42	5	47	Number of categories	3	3	6

Source: Igan and Mishra (2011).

Note: Bills are labeled as lax or tight based on the rules they would impose on financial institutions. On the right-hand side, bills are grouped into six categories: Commodity Futures Modernization Act, Bankruptcy Abuse Prevention and Consumer Protection Act, American Dream Downpayment Act, FHA Multifamily Housing Mortgage Loan Limit Adjustment Act, Predatory Lending Consumer Protection Act, and Financial Services Regulatory Relief Act.

ultimately be signed into law, more aggressive bills are less likely to reach the end of the legislative process. On the individual bills, no tight bill passed both chambers of Congress and was ultimately signed into law, while 16 percent of the lax bills did. This difference is even more striking when individual bills are grouped into common concept categories. Actually, the majority of lax regulation proposals (three out of five) were ultimately signed into law, whereas none of the tight regulation proposals succeeded. Perhaps even more striking is the fact that consumer protection proposals aimed at regulating predatory lending were never signed into law in spite of fifteen attempts (table 2).

Next we examine whether political influence changes legislators' behavior. The strategy is to exploit the cases in which legislators "switch" positions on a given legislation proposal and hence to use the variation in political spending by FIRE companies at the bill level and the variation in the position taken by the same legislator on the same bill in its different reincarnations.[14] The switch from being opposed to deregulation to being in favor occurred in 6 percent of the legislator-bill category-reincarnation observations. Importantly, these switch cases were not confined to a particular group of legislators or a particular bill category. In fact, the switch cases were spread across all bill categories, and 71 percent of the legislators switched at least once.[15] The baseline regression equation is:

$$S_{iBR} = \alpha L_{BR} + \beta N_{iBR} + s_i * t_c + \nu_B * t_c + \mu_R * t_c + \epsilon_{iBR} \quad (1)$$

where S_{iBR} is the switch in the stance of the legislator i from being against to being in favor of deregulation across successive reincarnations R of the same bill category B. Note that each pair of R and B uniquely identifies an individual bill. L_{BR} is the log of the total amount of lobbying expenditures spent on the bill by the firms that were "affected" by the bill, as revealed by their decision to engage in politically targeted activities regarding the bill. Note also that L_{BR} varies at the bill category-reincarnation level but does not vary at the legislator level,

14. It is important throughout to remember that the regression analysis remains descriptive and there are a series of caveats in interpreting the coefficients (discussed in detail later).

15. It is also interesting to note that there were switches in favor of deregulation even after the financial crisis.

Table 3. Political Influence and Switching in Favor of Deregulation, 2000–2006

	Full Sample	Full Sample	Unconnected Lobbyists	Connected Lobbyists	Full Sample	Full Sample	Full Sample
Lobbying	0.37*** [0.02]		0.26*** [0.02]	0.46*** [0.06]	0.38*** [0.02]	0.37*** [0.02]	
Connection		0.03*** [0.01]					
Lobbying*ideology score					0.02*** [0.01]		
Lobbying*Wall Street experience						0.02*** [0.01]	
Campaign							0.01*** [0.001]
Number of observations	32,390	32,390	21,662	10,728	31,406	32,390	32,390

Source: Author's calculations based on Igan and Mishra (2011).

Note: Dependent variable is a binary variable that is 1 if a legislator changes his vote on a particular bill in favor of deregulation (that is, from nay to aye for a lax bill and from aye to nay on a tight bill). All regressions are estimated as linear probability models and include legislator-Congress, category-Congress, and reincarnation-Congress fixed effects. Robust standard errors clustered at the legislator level are in brackets. *** denotes significance at the 1 percent level.

because the lobbying reports do not provide information on which individual legislators were contacted. Notice that, since lobbying expenditures are aggregated, any effect we find on switching could be interpreted as either the direct influence of lobbying on legislator i or the indirect influence of lobbying on legislator $j \neq i$ through strategic interaction among legislators, such as bargaining on other bills or modification to the bill in question. N_{iBR} is the connection between lobbyist and legislator, which aims to capture the network connections between the legislator and the lobbyists working on a particular bill.

The results show a statistically significant, positive association between money spent on lobbying for a particular bill and legislators switching their stance in favor of deregulation (table 3). Network connections between the legislators and the lobbyists also had an effect in securing a switch in favor of deregulation. Specifically, if the lobbyist hired to contact the legislator on a bill had an employment history connecting the lobbyist to that legislator, the likelihood that the legislator would switch her stance increased. When we investigate whether lobbying was more effective when it occurred through connected rather than unconnected lobbyists, we find that spending an extra dollar on lobbying was more effective in switching a legislator's position if the lobbyist was already connected to the legislator. The effectiveness of lobbying almost doubled when the lobbying money was spent through connected lobbyists. In other words, connected lobbyists were twice as efficient. The link between lobbying expenditures and voting patterns was also enhanced by the legislators' experience on Wall Street. In particular, lobbying was more effective in moving votes toward deregulation for legislators who were "Wall Street insiders."

We repeat the analysis using PAC contributions by affected firms instead of lobbying expenditures. While the findings are qualitatively similar, the estimated effects are much smaller in magnitude. There are two plausible explanations for the weaker links between campaign contributions and voting patterns. First, PAC

contributions themselves are minuscule compared to lobbying expenditures. Second, endogeneity is potentially more of a concern because we construct this variable at the bill-legislator level. In particular, PAC contributions are targeted to particular political candidates. Hence, the affected firms may allocate their contributions based on how likely they think it is that the candidate will act in favor of deregulation once she comes into office. By comparison, lobbying expenditures are targeted at particular issues rather than particular legislators and are measured at the bill level.

In a nutshell, the analysis points to strong evidence that the likelihood of a legislator changing her stance on financial regulation proposals introduced in the run-up to the crisis was linked to lobbying efforts and network connections. In addition, the evidence suggests that spending more by hiring connected lobbyists rather than unconnected ones got the financial industry more bang for their buck.

Do these results imply that the lobbying efforts of the financial industry were "successful"? The lobbying reports do not always explicitly state the stance of the filer on a given issue—for example, whether the filer supports the passage of a bill or not. There could be financial institutions that are against deregulation: for example, lenders with more prudent standards may prefer tighter rules to suppress competition by less prudent lenders. However, if we make the plausible assumption that financial institutions are on average in favor of deregulation, our empirical results suggest that the lobbying efforts were successful in obtaining this outcome. Such an assumption indeed seems plausible since some financial institutions explicitly stated their position on certain bills: for example, Bear Stearns, in lobbying on the Mortgage Reform and Anti-Predatory Lending Act, said that it "advocated the concepts in the proposal but not the proposal."

Although our specification exploits variation in voting patterns for a given legislator on the same issue, can we interpret the findings as evidence of a causal relationship? One might argue that lobbying efforts are directed at legislators who already have a tendency to switch their stance in favor of deregulation, and that hence we may be overestimating the effect of lobbying. Several considerations ameliorate such reverse-causality concerns. First, such tendencies would be captured by the legislator and Congress fixed effects and their interactions in our empirical specification. Second, lobbying expenditures were not measured at the legislator level. The information we obtained from the lobbying reports did not include any reference to particular legislators. Hence, lobbying expenditure on a bill as a whole was unlikely to be directly influenced by the voting patterns of any specific legislator.

Similar endogeneity concerns may apply to network connections. One can argue that a lobbyist's decision to work for a particular legislator may be influenced by the legislator's tendency to switch. However, connections are determined by past employment histories and thus are not likely to be affected by voting patterns on particular regulation proposals in the future.

One can also argue that firms may be likely to hire lobbyists who are connected to legislators with a higher inclination to switch. Several factors alleviate such endogeneity concerns. First, such tendencies would be captured by the legislator and Congress fixed effects and their interactions in our empirical specification. Second, when we look at the choice of hiring lobbyists, we see a reasonable degree of persistence. Specifically, the percentage of lobbyists who worked on successive reincarnations (nth and (n-1)th reincarnations) within the same bill category was very high. For example, at least 90 percent of the lobbyists working on a reincarnation of the American Dream Downpayment Act had also worked on the previous reincarnation. Given this persistence, it would be hard to argue that firms systematically change their lobbyist-hiring patterns based on legislators' stances.

Overall, it does not seem to be the case that the tendency to switch positions on a bill determines lobbying expenditures and how connections are established, but rather that lobbying and network connections sway votes

from being against to being in favor of deregulation. Yet, as mentioned earlier, it is difficult to take these relationships as indications of causation.

Given that lobbying efforts appear to have been successful in creating a deregulation-friendly financial landscape, we explore what happened to mortgage lending behavior in the run-up to the 2008 crisis (using the matched HMDA data described earlier) and to the performance of lobbying lenders during the crisis. First, we analyze the relationship between lobbying and ex ante characteristics of the loans originated. We focus on three measures of mortgage lending: loan-to-income ratios (which we consider a proxy for lending standards), the proportion of loans sold (negatively correlated with the quality of the loans originated), and mortgage loan growth rates (positively correlated with risk-taking). Controlling for unobserved lender and area characteristics as well as changes over time in the macroeconomic and local lender and borrower conditions, we find that lenders that lobbied more intensively (1) originated mortgages with higher LIRs, (2) securitized a faster-growing proportion of loans originated, and (3) had faster-growing mortgage loan portfolios (table 4).

Next, we analyze measures of the ex post performance of lobbying lenders. In particular, we explore whether, at the MSA level, delinquency rates—an indicator of loan performance—were linked to the expansion of lobbying lenders' mortgage lending. We find that the faster relative growth of mortgage loans by lobbying lenders from 2000 to 2006 was associated with higher delinquency rates in 2008. We also carry out an event study during key episodes of the financial crisis to assess whether the stocks of lobbying lenders performed differently from those of other financial institutions. We find that lobbying lenders experienced negative abnormal stock returns at the time of the failures of Bear Stearns and Lehman Brothers, but positive abnormal returns around the announcement of the bailout program. Finally, we examine the determinants of how bailout funds were distributed and find that being a lobbying lender was associated with a higher probability of being a recipient of these funds.

CONCLUDING DISCUSSION

Regulatory capture has been the subject of intense debate in the aftermath of the global financial crisis. Recent research utilizes detailed data on lobbying, legislative actions, and mortgage lending to provide promising insights into how political influence may lessen the support for tighter rules and how the ensuing lax regulatory environment may allow riskier lending practices.

The appropriate policy response depends on the true motivation for lobbying, which is extremely difficult to pin down. Specialized rent-seeking would suggest that curtailing lobbying is a socially optimal outcome. If lenders lobby to inform the policymaker and promote innovation, however, lobbying would remain a socially beneficial channel to facilitate informed decision-making.

Future research should continue to seek the answer. One direction could be expanding or more carefully exploiting lobbyists' background information to gauge the extent to which their activities correspond to their expertise. In a similar vein, the balance sheets of lobbying lenders could be examined more deeply to detect any differences between them and nonlobbying lenders in risk management practices. Another angle would be to look at outcomes in approaching the question: what do they reveal about differences in mortgage credit availability and product variety in locations where lobbying lenders dominate? Another intriguing avenue would be expanding the data set to 2009–2014. Given the post-crisis consolidation in the financial industry and the ongoing implementation of new regulations, we would expect to see rigorous lobbying activity. Indeed, table 1 suggests that FIRE activities have remained robust. What the aggregate data cannot tell us, however, is if and how the incumbent survivors have changed strategies. For instance, as rule-making under the Dodd-Frank Act continues, we could expect to see lobbying shifting from Congress to regulatory agencies.

Table 4. Lobbying on Financial Regulation Bills and Mortgage Risk Taking, 2000–2006

						Abnormal Returns		
	Loan-to-Income Ratio	Loan-to-Income Ratio	Proportion of Loans Sold	Loan Growth	Delinquency	Market Turmoil	Bailout Announcement	Bailout Funds Received
Lender lobbies	0.14***					−0.28**	0.30***	0.07***
	[0.01]					[0.12]	[0.11]	[0.02]
Lobbying		0.004***	0.007***	0.31***				
		[0.000]	[0.000]	[0.09]				
Growth in market share of lobbying lenders					0.22*			
					[0.12]			
Number of observations	648,938	648,938	406,035	406,996	306	67	45	13,315

Source: Author's calculations based on Igan, Mishra, and Tressel (2011).

Regressions where the dependent variable is the loan-to-income ratio, proportion of loans sold, and loan growth are at the lender-MSA-year level and include a full set of fixed effects. Regression where the dependent variable is delinquency is at the MSA-year level and includes a full set of fixed effects. Regressions where the dependent variable is abnormal returns or bailout funds are at the lender level and include a set of controls (log assets, dummy if regulator is HUD, dummy if lender is subprime, mortgage loan share, average income of loan applicant, average LIR of loans originated). "Market turmoil" refers to the Lehman Brothers bankrupcty, and "bailout announcement" refers to the Troubled Asset Relief Program. Robust, clustered standard errors are in brackets. ***, **, and * denote significance at the 1, 5, and 10 percent level, respectively.

While expanding our knowledge, it is important to remember that economics is ultimately about (at times irrational) human behavior and that modeling people and their decisions as inanimate objects has its limits and even perils.

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