Policy Uncertainty and Bank Mortgage Credit*

GAZI I. KARA†
Federal Reserve Board

YOUNGSUK YOOK‡
Federal Reserve Board

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ABSTRACT

We document that banks reduce supply of jumbo mortgage loans when policy uncertainty increases in their headquarter states as measured by the timing of US gubernatorial elections. The reduction is larger for term-limited elections and close elections. We utilize high-frequency, geographically granular loan-level data to address an identification problem arising from changing local demand for loans: (i) we estimate a difference-in-difference specification with state/time or county/time fixed effects; (ii) banks reduce lending not just in their home states but also outside their home states when their home states hold elections; (iii) we observe important cross-sectional differences in the way banks with different characteristics respond to policy uncertainty. Overall, the findings suggest that policy uncertainty has a real effect on residential housing markets through banks’ credit supply decisions and that it can spill over across states through lending by banks serving multiple states.

Keywords: Bank Mortgage Credit, Housing Market, Policy Uncertainty, Gubernatorial Elections

JEL Codes: G21, G28

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†Board of Governors of the Federal Reserve System; e-mail: gazi.i.kara@frb.gov.
‡Board of Governors of the Federal Reserve System; e-mail: youngsuk.yook@frb.gov.
1. Introduction

The uncertainties associated with possible changes in government leadership or policy can affect the behavior of firms through various channels, such as industry regulation, monetary policy, and taxation. Indeed, growing literature documents that nonfinancial firms cut back investment expenditures when they face heightened policy uncertainty.\textsuperscript{1} These studies are primarily guided by models of investment under uncertainty (e.g., Bernanke (1983) and Bloom, Bond, and Van Reenen (2007)), where firms become cautious and hold back on investment in the face of uncertainty if the investment is at least partially irreversible.\textsuperscript{2} However, it is an open question how policy uncertainty would affect banks’ investment decisions, that is, decisions to extend loans. Banks’ investment is very different from nonfinancial firms’ investment on multiple fronts. Loan investment is directly affected by changing demand for loans. That is, any observable change in bank lending is an equilibrium outcome reflecting both credit supply from banks and demand from borrowers. Also, banks operate in a heavily regulated industry. This means that political considerations may play a bigger role in banks’ investment decisions, complicating the decision process. This also means that their investment adjustment in response to policy changes can be much more broad and costly than nonfinancial firms’ adjustment. Our textual analysis of firms’ earnings conference call transcripts indicates that banks discuss regulatory issues approximately three times more frequently during the calls than nonfinancial firms (see section 3.2 for more discussion).

This paper investigates how policy uncertainty affects banks’ investment decisions in mortgage markets. This is an especially important question because banks’ responses to uncertainties can have a ripple effect in the economy given their role as intermediaries. The financial crisis of 2007–2009 highlights important implications of changes in banks’ credit supply for financial stability.\textsuperscript{3} Empirically, we face two challenges. First, uncertainties affect all economic agents including households, who are also likely to cut back on housing investment when facing higher uncertainty. Thus, identifying the effect of uncertainty on banks’ loan

\textsuperscript{1}For example, Julio and Yook (2012), Baker, Bloom and Davis (2016), Carvalho (2016), Gulen and Ion (2016), and Jens (2017) show that real investment declines when policy uncertainty increases.

\textsuperscript{2}Other channels include changes in risk premia, financial constraints, and risk aversion.

\textsuperscript{3}Mian and Sufi (2009), Adelino, Schoar and Severino (2014), and Favilukis, Ludvigson, and Van Nieuwerburgh (2017)
supply requires teasing out the change coming from borrowers’ demand. Second, a relationship between uncertainty and banks’ investment decision can be endogenous as the economic downturn itself can generate a great deal of political uncertainty. Thus, establishing a causal relationship requires an exogenous measure of political uncertainty.

We address the first challenge by taking advantage of rich supervisory data on bank mortgage credit, confidential Home Mortgage Disclosure Act (HMDA) data, which provide loan-level information at a daily frequency. The availability of high-frequency information allows us to control for changing demand dynamics better compared to using annual-frequency information in public-version HMDA. In addition, the loan-level information has advantages over bank-level data in evaluating cross-sectional variations in banks’ lending behavior. A bank’s lending aggregated at the national level does not reveal geographic variations within a bank serving multiple states that may vary with fluctuations in local demand. Each loan in our data can be mapped to a county and a state where the loan was extended, allowing us to conduct a geographically granular examination and control for changing local demand.

To address the second challenge, we employ a plausibly exogenous measure of policy uncertainty: The timing of U.S. gubernatorial elections. A state’s gubernatorial election increases policy uncertainty for banks headquartered in the state because a possible change in state government leadership can lead to changes in various state policies, including state taxes, subsidies, and procurement. A state’s governor also has a strong influence over the appointment of the head of the state banking regulators, who in turn hold various regulatory powers such as chartering, rulemaking, supervision, and enforcement (Saiz and Semenov (2014), Labonte (2017)). Thus, gubernatorial elections have important regulatory implications for banks headquartered in the state. Even the policy changes applicable to all banks operating in the state can have a disproportionally large impact on banks headquartered in the state because banks usually have a strong presence in their home states in terms of the number of employees and branches as well as deposit taking and lending. Relatedly, banks sometimes express strong attachment to their home states in their annual reports and during earning conference calls, and they are tuned into economic and political developments in their home states.

4Peltzman (1987), Besley and Case (1995), Colak, Durnev, and Qian (2017)
Elections matter for mortgage markets as well. States’ elected officials can influence how their states’ mortgage markets operate. For instance, some states adopted antipredatory-lending laws restricting the terms of mortgage loans to riskier borrowers while others didn’t; foreclosure laws also differ markedly across states.\(^5\) Likely because of such potential policy changes, banks follow state-specific political developments closely as we find in our textual analysis of earnings conference call transcripts (see Appendix A.2). Of course, one can consider a specific regulatory event rather than an election but it is difficult to establish a causal link unless the regulatory event is clearly exogenous.\(^6\) In this regard, our measure of policy uncertainty has important advantages. The election dates are predetermined by law and are independent of the states’ economic conditions. Furthermore, different states hold gubernatorial elections in different years, allowing us to net out national business cycle effects. In fact, several previous studies have used election timing as a quasi-natural experimental setting to identify the link between policy uncertainty and various economic outcomes.\(^7\)

Turning to our specification, we employ a difference-in-difference methodology to exploit time-series variations within a bank as well as cross-sectional variations across banks. Specifically, we are able to compare a bank’s lending behavior in election quarters and non-election quarters, and compare, at a given point in time, banks facing elections in their home states and those that are not because banks headquartered in different states face gubernatorial elections in different years. Also, because many banks in our sample lend outside their home states as well, we are able to observe, for a given state, banks headquartered in that state and those headquartered elsewhere and hence facing different policy uncertainty. In addition, our specification includes state-time (county-time) fixed effects and bank-state (bank-county) fixed effects for state-level (county-level) regressions to control for changing local demand for loans.

For our analysis, we aggregate the daily loan-level HMDA data between 1990 and 2014 at the bank, state, and quarter level and merge with banks’ quarterly financial information and

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5See Pence (2006), Ghent (2014), Mian, Sufi, and Trebbi (2015), Di Maggio and Kermani (2017).

6Focusing on a specific regulation, Gissler, Oldfather, and Ruffino (2016) document a negative correlation between banks perceived uncertainty and a specific mortgage-related regulation.

7Examples of international studies using the timing of national elections are Julio and Yook (2012), Julio and Yook (2016), and Kim (2019). U.S. studies using U.S. gubernatorial elections include Gao and Qi (2013), Colak et al. (2017), Jens (2017), and Atanassov, Julio, and Leng (2016).
data on 323 gubernatorial elections across 48 U.S. states. In our baseline regressions, we focus on the type of loans that we consider relatively more irreversible—jumbo loans held in banks’ balance sheets—as models of investment under uncertainty suggest that irreversibility increases the information value of waiting to invest, causing investment to vary negatively with fluctuations in policy uncertainty over time. However, even in the absence of irreversibility, uncertainty can depress investment by raising risk premiums (Pástor and Veronesi (2013)). In later sections, we also consider a broader universe of loans including conforming loans and loans originated regardless of whether they were held in banks’ balance sheets or disposed. Section 3.1 further discusses why loan investment is viewed costly to reverse and why some types of loans are considered more irreversible.

Initial, descriptive evidence supports our prediction: Figure 1 compares quarterly bank lending in election years and non-election years. We see that unconditional mean jumbo mortgage loan volume is lower when banks face elections in their home states. The gap in lending between banks facing elections (red perforated line) and those that are not (blue solid line) widens as we move closer to the election quarter. We then control for various bank characteristics and include fixed effects. Figure 2 depicts the estimated conditional jumbo mortgage credit cycle around elections: banks cut the volume of jumbo loans they either originate and hold or purchase and hold each quarter by approximately 9% to 21% compared with non-election quarters. The number of jumbo loans also declines by 3% to 5%. These estimates reflect changes in banks’ lending averaged over their home state and their foreign states where they extend loans. When estimated separately, lending in banks’ home states and their foreign states both decline when banks’ home states hold elections. The result has two important implications. First, policy uncertainty matters for banks’ mortgage lending decisions. That is, policy uncertainty has a real effect on residential housing markets through banks’ supply of mortgage credit. Second, policy uncertainty in one state has a spillover effect to other states through lending by financial institutions serving multiple states.

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8We exclude banks headquartered in New Hampshire and Vermont, which hold elections every other year as opposed to every four years.

9Banks often dispose loans soon after they are originated by either selling to the government-sponsored enterprises or by pooling as collateral for private label mortgage-backed securities.
Next, we take a deeper dive to examine the potential time-varying demand channel beyond what we have addressed in our baseline specification. First, we observe that state-level economic conditions are slightly better in election years. Thus they are unlikely to depress demand for loans, thereby reducing bank lending. Second, we take a geographically more granular look at the data by examining mortgage lending at the county level, and find that the pattern is similar. That is, our findings are not driven by different local demand for credit in response to different economic conditions within a state. Third, we exploit the fact that many banks in our sample lend outside their home states as well. If the decline in lending in election quarters is driven by declining demand in banks’ home state in response to the home state’s elections, banks are unlikely to reduce lending in foreign states. We find that banks also reduce lending in their foreign states, not just in their home states, when their home states hold elections.

Fourth, we exploit cross-sectional differences across banks and examine whether banks with varying characteristics respond to political uncertainty differently. Our premise is that the change in lending behavior will vary with banks’ characteristics if it was driven by supply rather than demand for loans. In particular, we consider two types of bank characteristics: (1) heterogeneity across banks in their regulatory and geographical exposure; (2) heterogeneity across banks in their risk-taking behavior.

For regulatory differences, we compare state-chartered banks and nationally chartered banks serving the same state, and find that state-chartered banks reduce jumbo mortgage lending more, implying that potential changes to state bank regulations following elections create an additional layer of uncertainty for state banks compared with national banks. For geographical differences, we consider the degree to which banks rely on their headquarters states for deposit taking. We find that banks taking a substantial fraction of deposit from their home states are more sensitive to uncertainty around their home states elections. However, banks do not appear sensitive to elections in foreign states where they lend: When we define election quarter indicators according to banks’ lending states rather than their home states, the negative association weakens substantially. For banks’ risk-taking behavior, we construct two risk indicators using z-score and equity ratio, respectively. We find that more risky banks tend to cut
lending more than less risky banks, possibly because more risky banks are more vulnerable to changes in policy regimes.

Fifth, we observe that the number of loan applications are a touch higher in election years. The number of denied loans is also a touch higher in election years. All these results run against the possibility that the observed reduction in bank lending is driven by reduction in demand.

Having examined the potential demand channel, we next exploit election characteristics to test whether the result is indeed driven by the uncertainty generated by elections. If the reduction in lending was driven by electoral uncertainty, the effect will likely be larger when there is a higher degree of uncertainty over the election outcome and, hence, over future policy. We find that the decline in bank lending is more severe in elections in close races in which the outcome is highly uncertain. The decline is also more severe in elections in which incumbent governors do not seek re-election due to binding term limits. Elections lacking incumbent candidates are likely more competitive and the uncertainty about election outcome is likely higher. These results suggest that jumbo mortgage credit supply declines more when uncertainty about the election outcome is higher.

Our results are robust to various checks such as using pseudo-election dates and excluding large states. We also consider an alternative measure of jumbo mortgage credit–jumbo mortgage loans banks originate regardless of whether they hold or sell the loans, and document that loan originations decline in election years, though at a smaller magnitude. To the extent that origination variables capture relatively more reversible investment, smaller reduction in investment supports the view that the investment-uncertainty relation is likely more negative for more irreversible assets. Finally, we consider an alternative sample of loans–conforming loans–and find a similar pattern.

Our work contributes to three strands of literature. First, our findings improve the understanding of how policy uncertainty affects housing markets through its effect on financial institutions.\textsuperscript{10} Canes-Wrone and Park (2014) document that home prices and home sales decline in the year leading up to gubernatorial elections. However, their finding is an equilibrium

\textsuperscript{10} See Davis (2019) for detailed review of the literature on nonfinancial firms and policy uncertainty.
outcome, reflecting both mortgage credit supply and demand effects. We take on the challenge of isolating supply and demand effects by exploiting unique, granular mortgage lending data and conducting an extensive analysis.

Second, we provide evidence of a causal link from policy uncertainty to financial institutions’ credit supply. Relatedly, Gissler, Oldfather, and Ruffino (2016) show a negative correlation between banks’ perceived uncertainty and a specific mortgage-related regulation. Using bank-level data, Bordo, Duca, and Koch (2016) document that credit growth is negatively related to Baker, Bloom, and Davis (2016)’s economic policy uncertainty (EPU) index. Berger, Guedhami, Kim, and Li (2018) also use bank-level data to document that banks hoard more liquidity as EPU increases. Using loan-level data from Italian credit registry, Alessandri and Bottero (2017) document a reduction in banks’ approval rates of commercial and industrial loans and an increase in the duration of an approval process when EPU is high.

Finally, our finding about the cross-state spillover of policy uncertainty adds to the literature on the role that multi-market banks play in the cross-market spillover of economic shocks. Peek and Rosengren (1997, 2000) show that Japanese banks transmitted shocks that originated from Japan in 1990s to the U.S. by cutting back the commercial real estate lending in their U.S. branches. Berrospide, Black, and Keaton (2016) examine banks that operated in multiple U.S. metropolitan areas during the housing market collapse of 2007-09 and document that the banks, in response to high overall mortgage delinquencies in some markets that they were serving, reduced mortgage lending in other markets. Schnabl (2012) also documents a spillover of the effect of Russian debt default to foreign banks’ lending in Peru. Cetorelli and Goldberg (2011), De Haas and Van Horen (2012), and Giannetti and Laeven (2012) study the spillover effect in the case of cross-border lending by banks exposed to shocks during the financial crisis of 2007–09.

2. Data

We obtain daily mortgage loan information between 1990 and 2014 from the confidential Home Mortgage Disclosure Act (HMDA) data. The HMDA of 1975 is a law requiring most
banks, savings and loan associations, credit unions, and consumer finance companies to report every mortgage application received. As a result, the data provide a substantial coverage of the United States mortgage market. Avery, Brevoort, and Canner (2007) estimate that HMDA covers approximately 80% of all home loans nationwide in 2006.\textsuperscript{11} The mandatory reporting threshold for depository institutions has changed over time but almost all commercial banks that originate mortgages are included in the data. In 2014, for example, any bank with assets above $43 million, with a branch in a metropolitan statistical area, and that originated at least one mortgage loan had to file a HMDA report. The HMDA data provide detailed information on loan applications and originations such as the date of an application and origination, loan amount and location, approval status, lender information as well as the information on mortgage applicants such as their income, sex, and race. The data also contain information as to whether a loan was purchased and held by a bank or originated and held.

We clean raw HMDA data, largely following the steps taken by Loutskina and Strahan (2009). We drop mortgages originated by savings institutions, credit unions, and other non-bank lenders. We then drop mortgages subsidized by the Federal Housing Authority, the Veterans Administration, or other government programs. We also drop applications with missing characteristics such as loan size, property location, or the bank’s approval decision on the loan. We only keep home purchase loans for owner-occupied, principal dwelling homes. Finally, to exclude outliers, we drop individual mortgage loans smaller than $10,000 or larger than $10 million.

We identify jumbo loans using the county-level conforming loan limits provided by the Federal Housing Finance Agency (FHFA) for one-unit properties.\textsuperscript{12} Prior to 2007:Q3, conforming loan limits were set at the national level and were adjusted annually to reflect inflation, increasing from $187,450 in 1990 to $417,500 in 2006.\textsuperscript{13} Starting in 2007:Q3, conforming loan limits have varied across counties depending on whether a county belongs to a general or high cost area. Accordingly, we apply FHFA’s nation-wide loan limits to data prior to 2007:Q3 and county-level loan limits to data starting in 2007:Q3. Approximately 25\% of counties in the

\textsuperscript{11} Avery, Brevoort, and Canner (2007) provide an extensive discussion of HMDA data.
\textsuperscript{12}https://www.fhfa.gov/DataTools/Downloads/Pages/Conforming-Loan-Limits.aspx
\textsuperscript{13}Except for Alaska and Hawaii where limits are 50 percent higher.
HMDA data do not have conforming loan limits listed in the FHFA data. For these counties, we replace missing values with conforming loan limits for general areas.

Next, we aggregate the loan-level information at the state, bank, and quarterly level to merge with banks’ quarterly financial information from the merger-adjusted version of the public Call Report data.\textsuperscript{14} Call Reports also provide information on a bank’s headquarter location, which allows us to further merge the data with information on 323 U.S. gubernatorial elections across 48 states between 1990 and 2014 based on the home state of each bank. We exclude an observation if a bank does not originate, purchase or deny at least one loan, jumbo or not, in a given state in a given quarter. This step helps ensure banks in our sample have a footprint in the state’s mortgage market. Because jumbo loans are not originated or purchased as frequently as conforming loans are, we apply the following procedure to distinguish banks that do not operate in the jumbo loan market from those that operate but happen to add no new jumbo loans to their balance sheets in a given quarter: For each 4-year election cycle, we only consider banks that either originate and hold or purchase and hold jumbo loans at least three out of four quarters in the year before an election. These data cleaning procedures result in 229,533 observations at the bank/state/quarter-level and 56,908 observations at the bank/quarter level.\textsuperscript{15}

Table 2 summarizes the loan and bank characteristics information. The information is shown at the bank/quarter level to better capture banks’ financial information, which is reported as aggregates across all states rather than at the state level. Each quarter, banks either originate and hold or purchase and hold an average of 9.88 million worth of jumbo loans and an average number of 15 jumbo loans nationwide. The median values are much smaller, suggesting a large variation across banks in their presence in the jumbo loan market. Note that these loans are not sold and hence held on the balance sheet of a bank at least until the end of the calendar year.\textsuperscript{16} These loans represent about 0.24\% of banks’ total assets in each quarter.

\textsuperscript{14}Each quarter, commercial banks must file either “Consolidated Reports of Condition and Income for a Bank with Domestic and Foreign Offices” (FFIEC 031) or “Consolidated Reports of Condition and Income for a Bank with Domestic Offices Only” (FFIEC 041), which are called Call Reports.

\textsuperscript{15}When a 4-year election cycle includes years after 2014, we reference HMDA data beyond 2014 to observe bank lending for the 4-year cycle.

\textsuperscript{16}Banks are required by the HMDA to report whether they have sold a loan by the end of the calendar year in which it was originated.
That is, about 0.24% of banks’ assets worth of new jumbo loans are added to banks’ balance sheets each quarter either through originations or purchases. This number is in addition to existing jumbo loans in banks’ balance sheets. When averaged at the bank/state/quarter level, the ratio is about 0.05% (untabulated). The ratio is smaller because the ratio constructed at the bank/state/quarter level uses for the denominator a bank’s assets consolidated across all states in which the bank operates while using for the numerator a bank’s jumbo mortgage activity at the state level. Turning to origination variables, the volume and number of jumbo loan origination is a bit larger than the corresponding volume and number of loans held with $12.78 million in volume and about 21 loans in number per quarter nationwide. This suggests that some of the jumbo loans banks originate are sold within the same calendar year.

Table 2 also reports banks’ quarterly financial information drawn from Call Reports. Banks in our sample have an average of $6.25 billion in assets. Core deposits are about 69% of total assets and average return on equity is about 3% each quarter. These banks hold about 20% of their assets in the form of home mortgages loans, which consist of first and second lien mortgages and home equity loans. Two bank risk measures are reported: z-score and equity ratio.

Next, table 3 summarizes the characteristics of gubernatorial elections. The election information is primarily obtained from the CQ Press Voting and Elections Collection and is supplemented by Guide to U.S. Elections by Kalb (2015). All states in our sample have gubernatorial elections every 4 years. We exclude New Hampshire and Vermont, which have elections every two years. Elections in our data have an average vote margin of 15.8% where the vote margin is defined as the percentage difference of votes between the winner and runner-up. Using this information, we construct an indicator variable, Close, which is set to one if an election outcome was determined by less than a 2-percent margin and zero otherwise. About a tenth of elections in our sample are classified as close. Similarly, we construct an indicator variable, Wide, which is set to one if an election outcome was determined by more than a 15-percent margin and zero otherwise. About 42 percent of the elections in our sample were won by a wide margin. Next, Term limited is an indicator variable showing whether an incumbent governor faces a term limit imposed by the state’s electoral rules or not. In a quarter of elections in our sample, incumbent governors do not seek re-election due to term limits.
Finally, the last row reports that new governors are elected in about a half of elections, leading to a change in leadership.

3. Methodology

3.1. Irreversibility of Mortgage Loans

For our main analysis, we consider the type of loans that we consider relatively more irreversible, jumbo loans held in banks’ balance sheets, as the investment-uncertainty relation is predicted to be more negative for more irreversible assets.\footnote{In later sections, we utilize a broader universe of loans including non-jumbo loans and loans originated regardless of whether they were held in banks’ balance sheets or disposed.} First, jumbo loans, defined as those with an amount exceeding the conforming loan limit, cannot be purchased or securitized by government-sponsored enterprises (GSEs) such as Fannie Mae and Freddie Mac. The lack of government support makes jumbo loans less liquid than conforming loans, thus more irreversible.\footnote{For more on jumbo loans, see Ambrose, LaCour-Little, and Sanders (2004), Loutskina and Strahan (2009), Adelino, Schoar and Severino (2014), among others.} In fact, most jumbo mortgages are held by the original lender while conforming loans are often sold upon origination. Second, loans that have been kept in banks’ balance sheets for some time—seasoned loans—are not easy to dispose compared to loans that were just originated and thus are more costly to dispose. Loans can become delinquent while in banks’ possession, making it difficult for banks to sell at a later date. Even well-performing loans have to meet various requirements to be sold as seasoned loans. For example, in the case of conforming loans, Fannie Mae’s requirements for buying seasoned loans include that the mortgage satisfy Fannie Mae’s current applicable mortgage eligibility requirements, that the current value of the property not be less than the original value, and that the borrower’s ability to pay not have changed adversely (Fannie Mae (2014)). Freddie Mac has similar requirements (Freddie Mac (2016)).

In later sections, we also consider a broader universe of loans including conforming loans and loans originated regardless of whether they were held in banks balance sheets or disposed.
While conforming loans are viewed as relatively more reversible investment than jumbo loans, they are also, to some extent, costly to reverse. As discussed above, seasoned conforming loans need to meet various requirements to be sold to GSEs. In addition, even those that are sold upon origination carry some non-balance-sheet risks such as put-back risk. That is, lenders may be required to purchase back the loans they sold if the buyer of the loans finds out that the loan documentation was incomplete or misleading. Mortgage put-backs were an important concern for lenders especially in the post-crisis episode when many banks faced costly repurchase requests and associated penalties and legal fees.19

### 3.2. Banks’ Policy Concerns in Earnings Conference Calls

Banks operate in a heavily regulated industry, and policy uncertainty surrounding gubernatorial elections can affect banks in a very different way than it does nonfinancial firms. Political considerations can induce banks to increase credit supply in election years (See Dinc (2005) and Delatte, Matray, and Pinardon-Touati (2020)). Alternatively, banks may cut investment in election years, and do so in a much larger magnitude than nonfinancial firms because their investment adjustment in response to policy changes can be much more broad and costly than nonfinancial firms adjustment. To better understand banks’ perspective on policies and regulations in particular, we examine 4,762 earnings conference call transcripts for banks and nonfinancial firms between 2005 and 2016.

First, we conduct a textual analysis to see how much more banks discuss regulatory issues in their earnings conference calls compared to nonfinancial firms. Table 1 shows that regulation related words--regulation, regulatory, regulator, rule--constitute an average of 0.073% of words in a transcript, about three times of the frequency for nonfinancial firms. As a counterfactual, we check two additional sets of words. The first set of words--demand, supply, job--are fairly generic terms describing economic conditions, and thus, we don’t expect them to be used more by banks. The second set of words--loan, lend-mortgage, credit--is closely linked to banks’ operations so we expect them to be heavily used by banks. Table 1 confirms

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19 For more detail, see Hartman-Glaser, Stanton and Wallace (2016) and Tarullo (2010), which describes former Federal Reserve Governor Daniel Tarullo’s testimony before the U.S. Senate Committee on Banking, Housing, and Urban Affairs.
our expectation. The first set of words constitute 0.045% of banks’ earnings transcript, which is about half of the usage by nonfinancial firms. On the other hand, the second set of the words is indeed heavily used by banks: it constitutes 0.916%, about eight times more than the frequency of usage for nonfinancial firms.

We also read some of the transcripts to understand the context in which these regulatory words were used by banks. Appendix A.1 shows examples of transcripts, where banks discuss regulatory issues and the associated uncertainties and challenges extensively. Naturally, banks are tuned into state-specific political developments, not just national development. They sometimes discuss a state’s new governor, his appointees, and their implications for the banks as shown in Appendix A.2. These examples illustrate why gubernatorial elections matter for banks and how they could impact their operations.

3.3. Specification

A key feature of our empirical setting is that we use the timing of gubernatorial elections as a proxy for exogenous variations in policy uncertainty. The timing of elections is fixed by electoral law and out of the control of an individual bank, and hence, independent of economic conditions. Furthermore, different states hold gubernatorial elections in different years, allowing us to net out national business cycle effects. We construct election quarter indicators to capture the mortgage lending dynamics around elections. This setup enables us to exploit variations within a bank over time by comparing a bank’s lending behavior in election quarters and non-election quarters. In addition, because banks headquartered in different states face gubernatorial elections in different years, we are able to compare, at a given point in time, banks facing elections in their home states and those that are not. In essence, we employ a difference-in-differences methodology and estimate the following specification:

\[ Y_{i,s,t} = \alpha_{i,s} + \alpha_{s,t} + \sum_{k=-2}^{1} \beta_k \text{Elect}_{i,h,t+k} + X'\theta + \epsilon_{i,s,t}. \]  

(1)
The specification includes bank-state fixed effects \((\alpha_{i,s})\) and state-time fixed effects \((\alpha_{s,t})\), building on Khawaja and Mian (2008)’s identification strategy. Bank-state fixed effects are intended to control for a relationship between a bank and a state in which the bank extends mortgage loans. Including a full set of state-time fixed effects helps control for the time-varying demand for mortgage credit and other local economic conditions affecting banks’ lending decisions in each state. In addition, we estimate this specification at the county level using county-time fixed effects to control for time-varying local variations within state that may not be captured by state-time fixed effects. The state-time (county-time) fixed effects are analogous to firm-time fixed effects used in studies that focus on identifying the changes in supply from demand for commercial and industrial loans by controlling for time-varying, observed and unobserved heterogeneity across borrowing firms (e.g, Jiménez et al (2012, 2014)). In our setting, including a full set of state-time (county-time) fixed effects helps control for time-varying, observed and unobserved heterogeneity across the borrowing states (counties). Thus, the differences in lending across banks in a state (county) in a given quarter should capture the differences in credit supply across banks that are headquartered in different states and hence face different political uncertainty despite lending in the same state (county).

Note that state-time fixed effects do not absorb the election effect because many banks in our sample lend not only in their home states but also in foreign states. Also note that bank-state and state-time fixed effects in the panel regression specification absorb the effects on lending by banks serving a single state, and thus the analysis implicitly focuses only on banks lending in multiple states.

The dependent variables are \(\log(1+\text{Volume held})\), \(\log(1+\text{Number held})\), and the ratio of \(\text{Volume held}\) to lag(assets), where \(\text{Volume held}\) and \(\text{Number held}\) are, respectively, the volume and the number of jumbo loans bank \(i\) either originates and holds or purchases and holds in state \(s\) in quarter \(t\). Note that we add one to \(\text{Volume held}\) and \(\text{Number held}\) before taking the logarithm.\(^{20}\) This is because mortgage loans can be issued relatively infrequently when we go to bank/state/quarter or bank/county/quarter level, especially for smaller banks. Thus, it is possible \(\text{Volume held}\) becomes zero because a bank cut jumbo lending to zero in some quarters.

\(^{20}\)Note that our data cleaning procedure, detailed in section 2, excludes observations for which \(\text{Volume held}\) or \(\text{Number held}\) is zero likely because a bank does not operate in the jumbo loan market.
rather than because a bank does not operate in the jumbo loan market. Adding one ensures that such observations are not excluded. Standard errors are double clustered at the bank/state level as the analysis focuses on the lending behavior at the bank/state level.

Our main variables of interest are election quarter indicators, $Elect_{i,h,t+k}$ ($k = -2, -1, 0, 1$), which are set to one if bank $i$’s home state $h$ holds a gubernatorial election in quarter $t - k$, and zero otherwise. We are interested in bank lending in the quarters prior to elections (quarters $t - 2$, $t - 1$, and $t$) but we also include one quarter after the election ($t + 1$) to follow up on bank behavior once electoral uncertainty is resolved. Note that, while the dependent variable is defined based on the state in which a bank extends a loan, election quarter variables are defined based on a bank’s home state to capture the uncertainty arising from a bank’s home-state election. $Elect_t$ is the quarter leading up to an election, the three-month period from September through November of the election year. Because elections take place in early November and because there is some lag between loan approval and origination, this definition captures the quarter leading up to an election more precisely than the last calendar quarter before an election, which is from July to September.\(^{21}\) Coefficients on the election dummy variables can be interpreted as the difference in the within-bank conditional mean mortgage lending, controlling for other determinants of lending.

Finally, the specification includes various time-varying bank characteristics ($X$) that can affect banks mortgage lending decisions over time. We lag all bank-level controls by one quarter to alleviate a potential endogeneity concern. Size, defined as the logarithm of a bank’s total inflation adjusted assets, may help explain banks’ lending decision if larger banks behave differently than small ones in the mortgage market. We also include home mortgage, defined as the sum of first lien and junior lien residential real estate loans and home equity loans as a fraction of total assets. A bank’s mortgage lending decision can be affected by its business strategy as reflected in its concentration on home mortgage relative to its size. A bank’s dependence on core deposits, measured as the ratio of core deposits to total assets, can affect a bank’s willingness to extend mortgage credit. Core deposits can encourage risk-taking due to its stable nature as a funding source and deposit insurance associated with core deposits.

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\(^{21}\)The results are similar when we define $Elect_{i,h,t}$ as the three months from August to October.
Finally, a bank’s profitability, measured by return on equity, may also affect its mortgage lending decision.

4. Mortgage Lending around Gubernatorial Elections

4.1. Bank–Level Analysis

We start by aggregating loan data for each bank at a quarterly frequency. Table 4 shows the bank-level results of the baseline specification (specification (1)). The first column uses log(1+Volume held) as the dependent variable, where Volume held is the volume of jumbo loans bank \( i \) either originates and holds or purchases and holds in quarter \( t \) across all states. Coefficients of \( Elect_{t-2} \), \( Elect_{t-1} \), and \( Elect_{t} \) are all negative with the last two statistically significant. The pattern is similar when log(1+Number held) is used as the dependent variable in column (2) and when Volume held/lag(assets) is used in column (3), respectively. These results show that banks’ overall jumbo mortgage lending (aggregated across all states) declines when banks face gubernatorial elections in their home states, consistent with our prediction.

An important drawback of this specification is that it cannot address the identification problem rising from changing local demand for loans. Different states hold gubernatorial elections in different years, resulting in varying degrees of uncertainty shocks across states in a given year. These state-level changes in demand cannot be accounted for by including nationwide macro trends or time trends. Thus, the next sub-sections conducts more granular analyses to address the identification problem.

4.2. Baseline Results: Bank/State–Level Analysis

Table 5 reports the estimation results at the bank/state level. Note that Volume held is now defined at the state level. That is, Volume held is the volume of jumbo loans bank \( i \) either originates and holds or purchases and holds in state \( s \) in quarter \( t \). The pattern documented using bank-level data earlier persist in the bank/state level although the coefficients are smaller.
In the case of log(1+Volume held) shown in column (1), coefficients of Elect\(_{t-2}\), Elect\(_{t-1}\), and Elect\(_{t}\) are all negative and statistically significant. The magnitude of the reduction is economically large: The point estimates of the three coefficients range between -0.089 and -0.192, implying that, in the quarters leading up to an election, banks cut the volume of jumbo mortgage supply by between 9% (= exp(0.089) − 1) and 21% (= exp(0.192) − 1) relative to the volume in non-election quarters, controlling for various bank characteristics. Figure 2 plots these coefficients.

The election effect weakens after an election, but does not go away swiftly. The coefficient on Elect\(_{t+1}\) remains negative, though smaller in magnitude than those on pre-election quarter variables. This lagged response is quite plausible considering that it takes time for a bank to process loan applications and originate loans. Thus, loans likely appear in banks’ books with some lags. In addition, while the uncertainty over an election outcome is resolved upon an election, there is some lingering uncertainty about the elected governor’s administration and agenda, more so in the case of a newly elected governor. Jens (2017), for example, points out that stock market volatility is higher for several months after a new governor is elected than when an incumbent is re-elected.\(^{22}\)

The next column of table 5 uses log(1+Number held) as the dependent variable. The result is similar: Coefficients of Elect\(_{t-2}\), Elect\(_{t-1}\), and Elect\(_{t}\) are all negative and significant. The magnitude of coefficients is smaller with the reduction of 3% to 5% in the number of loans compared with non-election quarters, controlling for various bank characteristics. These results suggest that larger jumbo loans are likely affected more in election years.

For robustness, the last column considers as the dependent variable the ratio of Volume held to the bank’s lagged total assets, multiplied by 100. The regression result is qualitatively similar to those in the first two columns: All three pre-election quarter variables have negative and significant coefficients. Note that the coefficients are smaller than in columns (1) or (2) for two reasons: First, because a bank’ assets in Call Reports are not broken down to the state level, we use for the denominator a bank’s assets consolidated across all states in which the bank operates while using for the numerator a bank’s jumbo mortgage activity at the given

\(^{22}\)See, also, Biakowski, Gottschalk, and Wisniewski (2008), Boutchkova, Doshi, Durnev, and Molchanov (2011), and Kelly, Pastor, and Veronesi (2016).
Turning to bank-level controls, we find them to have signs generally consistent with the literature. Bank size, measured as lagged bank assets, is positively correlated with jumbo mortgage lending in columns (1) and (2), implying that large banks have more presence in the jumbo mortgage market. Home mortgages also have positive coefficients. That is, banks with a higher concentration in the mortgage market extend more jumbo loans. Banks relying more on core deposits also tend to engage more in jumbo mortgage lending.

Overall, the results have two important implications. First, policy uncertainty matters for banks’ mortgage lending decisions. Second, the reduction in lending captured in the regressions reflects the reduction in both banks’ home states and foreign states in which they provide mortgage credit. That means that policy uncertainty in one state has a spillover effect to other states through financial institutions serving multiple states.

5. Demand and Supply of Jumbo Mortgage Credit

While our results highlight an important transmission mechanism through which policy uncertainty is passed on to households, one may wonder whether our results are driven by a decline in demand for mortgage loans rather than by a decline in banks’ credit supply. This section further examines the potential demand channel in addition to the treatments done so far. The treatments so far rely on the baseline specification, which (1) include state-time fixed effects to control for the time-varying demand for mortgage credit across states and (2) allows to compare banks operating in the same state and thus exposed to the same economic conditions while facing different degrees of uncertainty due to different headquarter locations.
5.1. Economic Conditions Across States

We first examine economic conditions of the states where banks extend loans. If a state’s economic conditions are systematically worse in election years, they can depress the local housing market and the demand for mortgage credit. Table 6 reports state-level annual GDP growth rates and unemployment rates. We calculate mean values in two ways. First, we assign an equal weight to each state-year observation. Second, we calculate a sample-weighted average by assigning the same weight to each bank/state/quarter observation. We observe that economic conditions are better in election years for both equal-weighted averages and sample-weighted averages. For equal-weighted averages, the GDP growth rate is 2.72% in election years, slightly higher than the nonelection year average of 2.34%. At the same time, unemployment rates are a bit lower in election years than in nonelection years: The election year average is 5.61% and the nonelection year average is 5.72%. The pattern is similar for sample-weighted averages. Thus, the documented reduction in bank lending in election years is not driven by depressed demand for loans associated with poor economic conditions.

5.2. County-Level Analysis

Next, we consider a possibility of within-state variations in economic conditions leading to a differential effect on the demand for mortgage credit. To address this, we consider counties as a geographical unit of observation rather than states. If economic conditions vary considerably across counties within a state, it is possible that our earlier findings were driven by a small set of counties. For this analysis, we aggregate jumbo mortgage loans to the bank/county level. At the county level, jumbo loans become very sparse in some areas. So we limit the sample to counties with at least 500 jumbo loans in our sample period (that is, an average of at least 20 loans per year).

Table 7 reports the bank/county-level results of the baseline specification. Note that we now use bank-county and county-time fixed effects. The number of observations increases to over 800,000, reflecting the finer level of the geographic unit. Election quarter timing variables are negative and significant, indicating that the pattern documented earlier remains
unchanged when we examine the county-level bank mortgage lending, controlling for time-varying county-level economic conditions. These results provide additional support for the interpretation that lower mortgage lending activity in election years is unlikely to be driven by changes in demand for mortgage credit in response to local economic conditions. Note that the coefficients in column (3) are much smaller than in state-level results because a bank’s county-level mortgage loan volume is scaled by the bank’s total assets at the national level.

5.3. Mortgage Credit in Home States vs. Foreign States

Next, we further investigate this concern by comparing loans extended in banks’ home states and those in their foreign states. If the findings are solely driven by declining demand in response to electoral uncertainty, the reduction in loans should be concentrated in banks’ home states where uncertainty surrounding elections may depress demand for mortgage credit. Specifically, we introduce interaction terms between our quarterly election dummies and a home state dummy, which takes a value of one if the lending takes place in a bank’s home state and zero otherwise. Panel A of Table 8 reports the state-level regression results and Panel B reports county-level results. The stand-alone election variables capture lending in foreign states (home state dummy = 0 cases). Almost all pre-election indicators are negative and significant, suggesting that banks cut back lending in foreign states when their home states hold elections. These results provide additional support for our interpretation that the estimated lending cycles around elections are driven by changes in banks’ credit supply. Demand-driven changes around home states’ elections are unlikely to reduce mortgage loans extended in banks’ foreign states, where credit demand would remain stable on average.

Moving to the the interaction terms, which capture the difference in banks’ lending between their home states and foreign states, we find that coefficients are mostly positive early in the election year (in quarters \( t - 2 \) and \( t - 1 \)) and turn negative as the election is near (in quarters \( t \) and \( t + 1 \). This means that, banks first reduce credit supply in foreign states in earlier quarters of the election year, but as time passes, they reduce lending in their home states as well, and reduce more in home states. That is, when banks need to reduce lending, they do so...
first in foreign states, likely in an attempt to maintain the relationship with their home state. But as their needs to cut lending continue, they cut lending in their home states as well.

5.4. Bank Characteristics and Sensitivity to Policy Uncertainty

This section tests whether banks with different characteristics differ in their sensitivity to electoral uncertainty. In this framework, the variation in demand for loans affect different types of banks similarly, and the variation in observed lending, if any, should come from different banks responding to differing degrees of uncertainty. We consider two types of bank characteristics: (1) heterogeneity across banks in their regulatory and geographical exposure; (2) heterogeneity across banks in their risk-taking behavior.

For regulatory differences, we compare state-chartered banks and nationally chartered banks headquartered in the same state. State banks are subject to state banking supervision while national banks are not.\textsuperscript{23} State regulators can implement identical rules differently than federal regulators due to differences in their institutional design and incentives and can counteract federal regulators’ actions to some degree (Agarwal, Lucca, Seru, and Trebbi (2014)). And, a state’s governor has a strong influence over the appointment of the head of state banking regulators. Thus, state banks can be more sensitive to the change in their state’s political leadership following elections than national banks despite serving the same market and being exposed to the same economic conditions as national banks.

However, one can also argue that the effect of regulatory differences between state and national banks is only marginal. Changes in a state’s political landscape are not limited to bank regulation. Other channels such as state taxes, subsidies, budget, and procurement can affect both state and national banks headquartered in the same state. Liu and Ngo (2014) argue that government plays a broad and active role in the banking sector and that banks consider political interference as a serious risk factor.\textsuperscript{24} In addition, legislation has strengthened the

\textsuperscript{23}State and federal banking regulators alternate examinations of state banks while national banks are only subject to federal banking supervision.

\textsuperscript{24}Related, Leverty and Grace (2017) and Kroszner and Strahan (1996) document government intervention in the U.S. insurance and thrift industries, respectively, and Dinç (2005) and Brown and Dinç (2005) document government intervention in banks in developing countries.
regulatory authority of the federal regulators relative to that of state regulators over time, potentially mitigating the differential effect (Leverty and Grace (2016)).

For geographical differences, we consider the degree to which banks rely on their headquarter states for deposit taking. Banks usually have a strong presence in their headquarter states in terms of deposit taking and lending as well as the number of employees and branches. We hypothesize that banks taking a substantial fraction of deposit from their home states are more sensitive to uncertainty around their home states’ elections. We use the Summary of Deposits data to calculate the fraction of deposits from the home state as a proxy for the strength of economic and political ties of the bank to its home state.

To exploit the differences across banks in their risk-taking behavior, we consider two risk measures. First, Z-score estimates a bank’s capital and return buffers with respect to its return volatility to evaluate the bank’s distance to default. Second, equity ratio measures a bank’s leverage and is considered an important measure of a bank’s soundness and stability. On the one hand, banks’ risk-taking pattern has been documented to be associated with the probability of their survival, especially during crises. In a similar fashion, electoral uncertainty may matter more to risky banks because they are likely more vulnerable to changes in policy regimes and associated changes in operating environment. On the other hand, banks’ risk-taking tendency may persist over time, leading more risky banks to react less to the uncertainty surrounding elections.

To test these hypotheses, we augment our baseline specification as follows to allow for interactions between bank characteristics and election quarter variables:

$$Y_{i,s,t} = \alpha_{i,s} + \alpha_{s,t} + \sum_{k=-2}^{1} \beta_k \text{Elect}_{i,h,t+k} + \sum_{k=-2}^{1} \gamma_k \text{Elect}_{i,h,t+k} \cdot Z_{i,h,t}$$

$$+ \delta \cdot Z_{i,h,t} + X' \theta + \varepsilon_{i,s,t},$$

where $Z$ is the bank characteristic variable of interest. For the regulatory difference hypothesis, the bank characteristic variable is a state bank indicator, which is set to one if the given bank

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25 For example, see Beltratti and Stulz (2012), Cole and White (2012), Berger and Bouwman (2013), DeYoung and Torna (2013), and Kara and Vojtech (2017).
is state-chartered and zero if nationally chartered. For the geographical difference hypothesis, the bank characteristic variable we employ is a home reliance indicator, which is set to one if the fraction of deposits coming from the bank’s home state is 75% or more, and zero otherwise. For the risk-taking hypothesis, the bank characteristic variable is a risk indicator constructed using z-score or equity ratio. High values of z-score and equity ratio indicate less risk. Thus, these risk indicators are set to one if the value of a given risk variable is in the bottom decile of its distribution.

Panel A of Table 9 reports state-level regression results. In the first column, we compare state-chartered banks and national banks headquartered in the same state. State banks and national banks are fairly evenly split in our sample with about 60% of bank-quarter observations being classified as state banks. Stand-alone pre-election variables are all negative and significant. This result indicates that gubernatorial elections create broad-based uncertainty that affect even the national banks headquartered in the state. In that regard, our results expand the work of Julio and Yook (2012) and Jens (2017) by suggesting that banks, like nonfinancial corporation, respond to the policy uncertainty in their home states that can affect business conditions broadly. Turning to interaction terms, we find them mostly negative and significant, indicating that state banks cut lending more around elections than national banks. Therefore, our results also contribute to the literature by lending support to the hypothesis that regulation is an important channel through which electoral uncertainty affects banks’ lending decisions. This additional channel is absent from the previous literature that focused on nonfinancial companies. One caveat is that state banks can choose to switch to national banks and vice versa. However, it is a very rare event and is unlikely to affect the results.\(^\text{26}\)

One may wonder if the extent of banks’ reliance on their home states may matter for banks’ response to policy uncertainty. The second column tests this possibility. We examine banks’ reliance on home states in terms of deposit taking: Almost all banks in our sample rely heavily on their home states, with the home-reliance indicator value of one for 94% of bank/state/quarter observations. Stand-alone pre-election indicators are all negative with one of them statistically significant. Interaction terms are all negative and significant. That is,\(^\text{26}\)6% of banks in our jumbo-loan sample switched between state and national charters once during our sample period and 0.5% switched twice.
banks that take less than 75% of deposit from their home states cut lending modestly when their home states hold elections, but those taking more deposits from home states cut lending much more.

This finding suggests that policy uncertainty in banks’ home states affects their lending decisions in their home and foreign states more if the banks are more reliant on their home states. This may lead one to wonder if banks may also respond to policy uncertainty arising in foreign states that they serve. In fact, if the demand for loans in banks’ foreign states were driving banks’ lending behavior, then we should observe changes in banks’ lending behavior when foreign states hold elections. In an untabulated regression, we define election indicators based on the states where the banks extend loans rather than based on their headquarter states, and estimate the baseline specification. We find that banks do not change their lending behavior significantly when these foreign states hold gubernatorial elections.

In the third and fourth columns, we compare more risky banks and less risky banks. Stand-alone election quarter variables are all negative and mostly significant, indicating that less risky banks cut jumbo mortgage lending around elections. Turning to interaction terms, column (3) shows that all three interaction terms are negative and the $ Elect_{t-2}$ interaction term is statistically significant. These results suggest that, earlier in the election year, more risky banks tend to reduce the supply of jumbo mortgage credit more than less risk banks. When elections are near, however, risky banks reduce lending at about the same pace as less risky banks. In fourth column, the interaction terms are all negative and significant, pointing to risky banks as defined as low equity ratios reacting more strongly to electoral uncertainty.

Panel B of Table 9 reports the results of county-level regressions. The patterns are similar to the state-level results, providing further support that the findings are unlikely to be driven by different demand across counties within a state.

5.5. Jumbo Loan Applications

Can we use the number of loan applications to directly control for changing demand for loans? Unfortunately, it is not as straightforward as it sounds. Banks can encourage potential
borrowers to apply for loans or discourage them from doing so in subtle ways. For instance, banks can increase the intensity of mortgage loan advertisement, lower the promotion rates, respond more promptly to potential borrowers’ inquiries, or be more lenient about the initial document requirement to attract more borrowers. Because banks’ efforts to encourage or discourage loan applications are not observable, it is infeasible to adjust the number of loan applications to get at true demand for loans. Similarly, the number of denied loans also reflects both demand and supply. For instance, according to Goodman (2017), in 2007 when bank lending was very loose, the denial rate based on HMDA data was very high because, despite robust credit supply, demand from marginal borrowers was even stronger.

Table 10 shows that, for our sample, a bank receives slightly more jumbo loan applications on average across its lending states when it faces a gubernatorial election in its headquarter state. It denies slightly more loans as well around the headquarter state’ elections. These statistics are more informative of loan originations than loans held (our main dependent variables), but they provide useful, descriptive information. A slightly higher number of applications in election years suggests that the observed reduction in bank lending in election years is not likely driven by reduction in demand. The number of denied loans also increase slightly in election years, consistent with our hypothesis that banks cut lending in election years. However, as discussed in the previous paragraph, these statistics should be interpreted with caution.

6. **Election Characteristics and Sensitivity to Policy Uncertainty**

This section exploits various election characteristics to further examine whether the documented lending cycle is indeed driven by the uncertainty generated by elections. If indeed that is the case, the effect would likely be higher when there is a higher degree of uncertainty over future policy. In some cases, election outcomes are predicted with a great deal of confidence.

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27These statistics capture the number of jumbo loans banks deny or approve regardless of whether the approved loans are sold upon origination or held by banks. Also they do not capture the loans that are purchased and held by banks.
prior to the election date. However, other elections are characterized by very close races in which the outcome is highly uncertain until the day of the election. We investigate variation in electoral uncertainty using vote margins as a proxy for the degree of uncertainty. We construct an indicator variable, \( \text{Close} \), which is set to one if the vote margin in an election is less than 2\%, and zero otherwise, where the vote margin is defined as the difference between the proportion of the votes garnered by the winner and the proportion received by the runner-up. We also construct an indicator variable, \( \text{Wide} \), to capture elections with wide victory margins, which are likely to be associated with less uncertainty. \( \text{Wide} \) is set to one if the vote margin is more than 15\% and zero otherwise. Among elections in our sample, 9\% are classified as close elections and 42\% as wide-margin elections (table 3).

A caveat is that the vote margin captures a realized election outcome, and thus an imperfect measure of perceived uncertainty prior to an election. Unfortunately, broad polling data capturing the degree of uncertainty prior to an election is not generally available. To complement it, we consider a measure indicating whether an incumbent governor faces a term limit imposed by the state’s electoral rules. A term limit is predetermined, rending the measure clearly exogenous. Previous studies document that the advantage of incumbency is an important predictor of the election outcome: If an incumbent governor faces a term limit and, thus, cannot run for re-election, competition surrounding the election is likely more fierce and the uncertainty about the election outcome is likely higher. To capture the variation in the incumbency advantage across elections, we define an indicator variable, \( \text{Term limited} \), which is set to one if an incumbent faces a term limit and zero otherwise. In our sample, incumbents face term limits in about 25\% of elections (table 3).

We augment the baseline specification as follows to allow for interactions between election characteristics and election quarter variables:

\[
Y_{i,s,t} = \alpha_{i,s} + \alpha_{s,t} + \sum_{k=-2}^{1} \beta_k \text{Elect}_{i,h,t+k} + \sum_{k=-2}^{1} \gamma_k \text{Elect}_{i,h,t+k} \cdot Z_{i,h,t} + X'\theta + \epsilon_{i,s,t},
\]  

(3)
where $Z$ is the election characteristics variable of interest including Close, Wide, and Term limited.

Panel A of Table 11 reports state-level regression results. Only the election quarter variables and their interaction terms are reported in the table to save space. Column (1) uses Close as the election characteristics variable. All pre-election quarter variables have negative and significant coefficients. In addition, two of the interaction terms are large in magnitude and statistically significant. This result suggests that the effect of electoral uncertainty is more pronounced in close election races where uncertainty about election outcome tends to be higher.

Turning to column (2), which uses the wide margin indicator as the election characteristics variable, we see that all pre-election quarter variables remain negative and significant. Consistent with our prediction, two of the interaction terms are statistically significant and have positive signs, implying that cycles in mortgage lending around elections are less pronounced when races are highly predictable. Finally, column (3) interacts Term limited with election quarter variables. As predicted, interaction terms have negative and statistically significant coefficients. This means that banks cut credit supply more when an incumbent governor cannot run for re-election due to term limits, likely because uncertainty is higher in those elections.

Panel B shows county-level regression results. The pattern is similar to that in state-level results, suggesting that the pattern in the data is unlikely to be driven by different local demand within a state. Overall, the results in this section are consistent with the interpretation that mortgage credit supply declines more when uncertainty about the election outcome is higher. These results also shed further light into the pattern discussed earlier that, after an election, there is some lingering uncertainty about the elected governor’s administration and agenda. We see that the dampening election effect is slower to go away after close elections and after elections where the incumbent faces a term-limit. However, the dampening effect completely disappears after wide elections. The sum of the coefficients of $\text{Elect}_{t+1}$ and $\text{Elect}_{t+1} \times \text{Close}$ is negative. So is the sum of the coefficients of $\text{Elect}_{t+1}$ and $\text{Elect}_{t+1} \times \text{Term limited}$. Meanwhile, the sum of the coefficients of $\text{Elect}_{t+1}$ and $\text{Elect}_{t+1} \times \text{Wide}$ is slightly positive ($-0.142 + 0.161 = 0.019$). Close elections and term-limited elections appear to be highly contested and have more unresolved uncertainty even after the election outcome is revealed while wide-margin elections do not.
7. **Alternative Measures and Sample**

7.1. **Jumbo Loan Origination**

The analyses so far have examined the volume and number of jumbo mortgage loans banks either originated and held or purchased and held in their balance sheets. In this subsection, we consider alternative measures of jumbo mortgage credit: The volume and number of jumbo mortgage loans banks originate in each state and each quarter regardless of whether they hold or sell the loans. These origination variables include loans that are sold soon after origination, a relatively more reversible form of investment. They also exclude loans purchased rather than originated. In the models of investment under uncertainty, irreversibility increases the information value of waiting to invest. Thus, the investment-uncertainty relation is likely more negative for more irreversible assets. To the extent that origination variables capture investment that is relatively less costly to reverse, the mortgage credit cycle may be less pronounced than when loans held were used in table 5. On the other hand, the results may be similar because jumbo mortgages are often held by the original lender rather than being sold upon origination.

Table 12 estimates the baseline specification using three origination variables: (1) \( \log(1 + \text{Volume originated}) \), where \( \text{Volume originated} \) is the volume of jumbo loans bank \( i \) originates in state \( s \) in quarter \( t \), (2) \( \log(1 + \text{Number originated}) \), and (3) the ratio of \( \text{Volume originated} \) to lagged bank assets. The results are qualitatively the same as those in table 5 with all three pre-election quarter variables showing negative and mostly significant coefficients. However, the economic magnitude is generally smaller. Column (1) shows that the coefficients of pre-election quarter variables range between -0.039 and -0.074, indicating a decline in the quarterly jumbo mortgage origination volume of about 4-8% relative to the volume in non-election quarters. This is much smaller than a reduction of 9-21% in table 5 using \( \text{volume held} \). Similarly, column (2) shows that the coefficients are smaller than the corresponding values in the baseline results. Column (3) shows that the ratio of \( \text{Volume originated} \) to lagged assets declined between 0.004% and 0.006%, slightly more than the decline of 0.004% in table 5 using \( \text{volume held}/\text{lag(assets)} \). This is likely because the origination volume, which is on average

Electronic copy available at: https://ssrn.com/abstract=3306884
larger than the volume held, declines more in terms of the dollar amount and hence more as a fraction of assets while declining less as a fraction of the previous volume than the volume held.

7.2. Conforming Loans

Next, we consider measures constructed using an alternative sample—conforming loans. As discussed in section 3.1, conforming loans are also costly to reverse to some extent. We test whether the mortgage credit cycle is still present in banks’ conforming-loan investment. For consistency, we construct the conforming-loan sample in the same way as we did our jumbo-loan sample by following the data-cleaning procedures described in section 2. As we did with jumbo loans, for each 4-year election cycle, we only consider banks that either originate and hold or purchase and hold loans in at least three out of four quarters in the year before an election. The final data contain 497,762 observations at the bank/state/quarter level. The conforming-loan sample has more observations than the jumbo-loan sample because many banks extending conforming loans do not operate in the jumbo-loan market. For this reason, we don’t attempt to compare jumbo-loan and conforming-loan results directly, which is a comparison of apples and oranges. Table 13 repeats the regressions in table 5 using the new sample. Similar to jumbo-loan regression results, all election quarter variables have negative and significant loadings. This finding suggests that the mortgage credit cycle around elections is generally present in the mortgage loan market, not just in the jumbo loan market.

7.3. Robustness Checks

In this section, we perform a few robustness checks. We use log(1+\text{Volume held}) as the dependent variable for these regressions. In the first column of Table 14, we repeat the baseline regression shown in table 5 using pseudo election dates, which are constructed by, for each state, randomly selecting a year in which a state does not hold an election and treating the year and every four years after the year as the election years for the state. If our results are indeed driven by electoral uncertainty, the credit cycle documented in earlier sections should
not be present in pseudo election years. The results in column (1) show that the volume of jumbo mortgage loan supply does not decline in the pseudo election years, consistent with our prediction.

Next, we address the concern that the pattern in the data might be driven by uncertainty surrounding presidential elections as the timing of some gubernatorial elections coincides with that of presidential elections. We repeat our baseline regression excluding states for which gubernatorial elections take place in the same year as presidential elections. That is, all banks headquartered in these states are excluded from the sample. Column (2) reports the result: Election quarter variables remain negative and significant, suggesting that the documented credit cycle is present outside presidential-election years as well.

Finally, we examine whether the result changes when we exclude three large states (New York, California, and Florida). If our result was driven by an idiosyncratic pattern that may be present in only a handful of large states, then the result is not likely to hold when these states with large observations are removed from the sample. We exclude all jumbo loans extended to these three states and estimate our baseline specification. Column (3) shows that the election quarter variables have negative and significant coefficients, similar to earlier findings.

8. Conclusion

We document that banks reduce supply of jumbo mortgage loans when policy uncertainty increases in their headquarter states as measured by the timing of US gubernatorial elections. Banks reduce lending both in and outside their headquarter states. The reduction is more pronounced for term-limited elections and close elections, for which policy uncertainty is likely higher. The pattern also holds for loans originated to distribute and for conforming loans. The result has two important implications. First, policy uncertainty matters for banks’ mortgage lending decisions. Second, policy uncertainty in one state has a spillover effect to other states through lending by financial institutions serving multiple states.
Novel features of our paper are the data and a comprehensive analysis utilizing the data. First, our analysis of earnings conference call transcripts provides an up close and personal look into banks’ deliberation of various policy implications. Our textual analysis of the transcripts illustrate how concerned banks are about regulations and regulatory changes. In discussing anticipated changes to their operating environment, banks sometimes discuss state-specific political developments such as their state’s elected officials and their policy platforms. Second, we tackle a unique empirical challenge in evaluating bank’s investment decision. That is, unlike nonfinancial firms’ investment, bank lending is directly affected by changing demand for loans. To address this, we conduct a careful analysis using high-frequency, geographically granular loan-level confidential supervisory data.
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Figure 1. Unconditional Mean Jumbo Mortgage Credit

This figure depicts unconditional mean jumbo mortgage credit banks extend when they face elections in their headquarter states (shown in red, perforated line) and when they do not (shown in blue solid line). y-axis captures log(1+Volume Held), where Volume Held is the volume of jumbo loans bank $i$ either originates and holds or purchases and holds in state $s$ in quarter 0. x-axis captures the quarters around elections and corresponding non-election year quarters. In election years, quarter 0 is the last quarter leading up to a gubernatorial election.
Figure 2. Conditional Mean Jumbo Mortgage Credit Around Elections

These figures depict the volume of jumbo mortgage credit supply relative to non-election quarters, controlling for various fixed effects and bank characteristics. y-axis plots coefficients of the election timing dummy variables of the following specification:

$$Y_{i,s,t} = \alpha_{i,s,t} + \alpha_{s,t} + \sum_{k=-2}^{1} \beta_k \text{Elect}_{i,h,t+k} + X'\theta + \epsilon_{i,s,t},$$

where the dependent variable is $\log(1+\text{Volume Held})$, the logarithm of the volume of jumbo loans bank $i$ either originates and holds or purchases and holds in state $s$ in quarter $t$. x-axis shows four quarters around elections, where quarter 0 indicates the last quarter leading up to a gubernatorial election.
This table uses a textual analysis to summarize the frequency of firms’ usage of certain keywords in their earnings conference call transcripts for banks and nonfinancial firms between 2005 and 2016. First, for each transcript, the ratio of the count of certain keywords to the count of all words is calculated. Then the ratio is averaged over all transcripts in two ways: (1) The simple average assigns the same weight to each transcript and (2) the weighted average assigns more weights to transcripts containing more words.

| Keywords                          | Banks  | Nonfinancial Firms |
|-----------------------------------|--------|--------------------|
| **Simple Average (unit: basis point)** |        |                    |
| demand, supply, job               | 4.52   | 10.66              |
| loan, lend, mortgage, credit      | 91.57  | 11.55              |
| regulation, regulatory, regulator, rule | 7.28   | 2.52               |
| **Weighted Average (unit: basis point)** |        |                    |
| demand, supply, job               | 4.46   | 10.86              |
| loan, lend, mortgage, credit      | 84.07  | 10.50              |
| regulation, regulatory, regulator, rule | 7.67   | 2.54               |
| **Number of Transcripts**         | 491    | 4,271              |
| **Total Number of Words**         | 3,819,592 | 34,292,267        |

Electronic copy available at: https://ssrn.com/abstract=3306884
Table 2
Summary Statistics

This table summarizes our loan variables and various bank characteristics at the bank-quarter level. All dollar values are converted to the 2010:Q1 value. Bank-level control variables are lagged by one quarter for regressions. See Appendix B for variable definitions.

|                                | N   | Mean | Median | Std. Dev. |
|--------------------------------|-----|------|--------|-----------|
| **Loan Variables**             |     |      |        |           |
| Volume of jumbo loans held (unit: $M) | 56,908 | 9.88 | 0.88   | 41.41     |
| Number of jumbo loans held     | 56,908 | 15.20 | 2      | 61.33     |
| Volume of jumbo loans held/ lagged total assets(%) | 56,908 | 0.24 | 0.09   | 0.40      |
| Volume of jumbo loans originated (unit: $M) | 56,908 | 12.79 | 1.07   | 52.65     |
| Number of jumbo loans originated | 56,908 | 21.48 | 2      | 87.27     |
| Volume of jumbo loans originated/ lagged total assets(%) | 56,908 | 0.31 | 0.11   | 0.57      |
| **Other Variables**            |     |      |        |           |
| Total assets (unit: $B)        | 56,908 | 6.25 | 0.74   | 21.30     |
| Core deposits                  | 56,908 | 0.69 | 0.71   | 0.13      |
| ROE                            | 56,908 | 0.03 | 0.03   | 0.02      |
| Home mortgages                 | 56,908 | 0.20 | 0.19   | 0.11      |
| State bank indicator           | 56,908 | 0.61 | 1.00   | 0.49      |
| Election year indicator        | 56,908 | 0.25 | 0      | 0.43      |
| Z-score                        | 55,932 | 196.08 | 151.75 | 168.04    |
| Equity ratio                   | 56,908 | 0.09 | 0.09   | 0.03      |
| Home reliance indicator        | 56,903 | 0.94 | 1      | 0.24      |
Table 3
Election Characteristics

The table reports summary statistics for 323 gubernatorial elections held between 1990 and 2014 in 48 U.S. states. All states in our sample have gubernatorial elections every 4 years. New Hampshire and Vermont, which have elections every two years, are excluded from the sample. See Appendix B for variable definitions.

| Election variables      | N   | I = 1 | Mean | Median | Std. Dev. |
|-------------------------|-----|------|------|--------|-----------|
| Vote Margin (%)         | 323 |      | 15.84| 12.67  | 13.40     |
| Close                   | 323 | 28   | 0.09 | 0      | 0.28      |
| Wide                    | 323 | 137  | 0.42 | 0      | 0.49      |
| Term limited            | 323 | 80   | 0.25 | 0      | 0.43      |
| New governor            | 323 | 172  | 0.53 | 1      | 0.50      |
Table 4  
Jumbo Mortgage Lending around Gubernatorial Elections: Bank–Level Analysis

This table presents estimation results of the following specification:

\[ Y_{i,t} = \alpha_i + \alpha_t + \sum_{k=-2}^{1} \beta_k \text{Elect}_{i,h,t+k} + X'\theta + \epsilon_{i,t}, \]

where dependent variables are (1) log(1+Volume held), (2) log(1+Number held), and (3) Volume held/\text{lag(assets)}. Volume held is the volume of jumbo loans bank \( i \) either originates and holds or purchases and holds nationwide in quarter \( t \). Number held is the number of such loans. \( \text{Elect}_{i,h,t+k}(k = -2, -1, 0, 1) \) are set to one if a bank \( i \)'s home state \( h \) holds a gubernatorial election in quarter \( t - k \), and zero otherwise. \( \text{Elect}_t \) is the quarter leading up to an election, the three-month period from September through November of the election year. \( X \) is a set of time-varying bank-level control variables including size, home mortgages, core deposits, and return on equity. Note that all control variables are lagged by a quarter. The specification includes bank fixed effects as well as time fixed effects. Standard errors clustered at the bank level are reported in brackets. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively. See Appendix B for variable definitions.

|               | (1) log(1+Volume held) | (2) log(1+Number held) | (3) Volume held/\text{lag(assets)} |
|---------------|------------------------|------------------------|----------------------------------|
| \( \text{Elect}_{t-2} \) | -0.089 [0.072]         | -0.026 [0.018]         | -0.008 [0.007]                   |
| \( \text{Elect}_{t-1} \) | -0.319*** [0.068]      | -0.070*** [0.018]      | -0.019*** [0.007]                |
| \( \text{Elect}_t \)   | -0.436*** [0.077]      | -0.104*** [0.018]      | -0.029*** [0.007]                |
| \( \text{Elect}_{t+1} \)| -0.552*** [0.074]      | -0.124*** [0.018]      | -0.031*** [0.006]                |
| Size           | 0.843*** [0.071]       | 0.409*** [0.036]       | -0.113*** [0.013]               |
| Home mortgages | 3.695*** [0.430]       | 1.773*** [0.210]       | 0.502*** [0.100]                |
| Core deposits  | -0.712* [0.384]        | -0.228 [0.194]         | -0.158** [0.075]                |
| Return on equity| 2.375** [0.922]        | 0.466 [0.319]          | -0.239* [0.144]                 |
| Bank Fixed Effects | Yes          | Yes                   | Yes                             |
| Time Fixed Effects | Yes          | Yes                   | Yes                             |
| Observations | 56,908        | 56,908                 | 56,908                          |
| \( R^2 \)     | 0.508         | 0.755                  | 0.449                           |
Table 5  
Jumbo Mortgage Lending around Gubernatorial Elections: Bank/State–Level Analysis

This table presents estimation results of the following specification:

\[ Y_{i,s,t} = \alpha_{i,s,t} + \alpha_s + \sum_{k=-2}^1 \beta_k \text{Elect}_{i,h,t+k} + X'\theta + \epsilon_{i,s,t}, \]

where dependent variables are (1) log(1+Volume held), (2) log(1+Number held), and (3) Volume held/lag(assets). Volume held is the volume of jumbo loans bank \( i \) either originates and holds or purchases and holds in state \( s \) in quarter \( t \). Number held is the number of such loans. Assets are the bank’s total assets across states. \( \text{Elect}_{i,h,t+k} (k = -2, -1, 0, 1) \) are set to one if a bank \( i \)'s home state \( h \) holds a gubernatorial election in quarter \( t - k \), and zero otherwise. \( \text{Elect}_t \) is the quarter leading up to an election, the three-month period from September through November of the election year. \( X \) is a set of time-varying bank-level control variables including size, home mortgages, core deposits, and return on equity. Note that all control variables are lagged by a quarter. The specification includes bank×state fixed effects as well as state×time fixed effects. Standard errors double clustered at the bank×state level are reported in brackets. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively. See Appendix B for variable definitions.

| Variables       | (1) log(1+Volume held) | (2) log(1+Number held) | (3) Volume held/lag(assets) |
|-----------------|------------------------|------------------------|-----------------------------|
| \( \text{Elect}_{t-2} \) | -0.089*** | -0.031*** | -0.004*** |
|                 | [0.032]  | [0.007]  | [0.001]  |
| \( \text{Elect}_{t-1} \) | -0.190*** | -0.030*** | -0.004*** |
|                 | [0.031]  | [0.007]  | [0.001]  |
| \( \text{Elect}_t \) | -0.192*** | -0.048*** | -0.004*** |
|                 | [0.033]  | [0.007]  | [0.001]  |
| \( \text{Elect}_{t+1} \) | -0.083**  | -0.029*** | -0.005*** |
|                 | [0.034]  | [0.007]  | [0.001]  |
| Size            | 0.562*** | 0.238*** | -0.021*** |
|                 | [0.043]  | [0.014]  | [0.002]  |
| Home mortgages  | 3.058*** | 0.959*** | 0.064*** |
|                 | [0.219]  | [0.073]  | [0.010]  |
| Core deposits   | 0.430*   | 0.212*** | 0.015**  |
|                 | [0.220]  | [0.068]  | [0.007]  |
| Return on equity| -0.044   | -0.096   | -0.051***|
|                 | [0.419]  | [0.119]  | [0.020]  |
| Bank-State Fixed Effects | Yes | Yes | Yes |
| State-Time Fixed Effects | Yes | Yes | Yes |
| Observations    | 229,533  | 229,533  | 229,533  |
| \( R^2 \)       | 0.569    | 0.676    | 0.567    |
Table 6
Economic Conditions Across States

The table reports two measures of state-level economic conditions for election and nonelection years: the average annual growth rate in real GDP and the average annual unemployment rate. These statistics are reported in two ways. First, the equal-weighed average assigns the same weights to each state-year. Second, the sample-weighed average assigns the same weights to each bank/state/quarter observation.

| Real GDP Growth (%) | Equal-Weighted Across States/Years | Sample-Weighted Averages |
|---------------------|-----------------------------------|--------------------------|
|                     | Election Years | Nonelection Years | Election Years | Nonelection Years |
| Mean                | 2.72            | 2.34                | 2.87             | 2.54                |
| S.D.                | [2.80]          | [2.91]              | [2.38]           | [2.68]              |
| Unemployment Rate (%) | Equation-Weighted Across States/Years | Sample-Weighted Averages |
| Mean                | 5.61            | 5.72                | 5.54             | 5.69                |
| S.D.                | [1.86]          | [1.88]              | [1.75]           | [1.81]              |
Table 7
Bank/County–Level Analysis

This table presents estimation results of the following specification:

\[ Y_{i,c,t} = \alpha_{i,c} + \alpha_{c,t} + \sum_{k=-2}^{1} \beta_{k} \text{Elect}_{i,h,t+k} + X'\theta + \epsilon_{i,c,t}, \]

where dependent variables are (1) log(1+Volume held), (2) log(1+Number held), and (3) Volume held/lag(assets). Volume held is the volume of jumbo loans bank \( i \) either originates and holds or purchases and holds in county \( c \) in quarter \( t \). Number held is the number of such loans. Assets are the bank’s total assets nationwide. \( \text{Elect}_{i,h,t+k} \) are set to one if a bank \( i \)’s home state \( h \) holds a gubernatorial election in quarter \( t - k \), and zero otherwise. \( \text{Elect}_t \) is the quarter leading up to an election, the three-month period from September through November of the election year. \( X \) is a set of time-varying bank-level control variables including size, home mortgages, core deposits, and return on equity. Note that all control variables are lagged by a quarter. The specification includes bank×county fixed effects as well as county×time fixed effects. Standard errors double clustered at the bank×county level are reported in brackets. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively. See Appendix B for variable definitions.

|               | (1) log(1+Volume held) | (2) log(1+Number held) | (3) Volume held/lag(assets) |
|---------------|------------------------|------------------------|-----------------------------|
| \( \text{Elect}_{t-2} \) | -0.105*** | -0.022*** | -0.001*** |
|               | [0.016] | [0.003] | [0.000] |
| \( \text{Elect}_{t-1} \) | -0.069*** | -0.009*** | -0.000*** |
|               | [0.016] | [0.003] | [0.000] |
| \( \text{Elect}_t \) | -0.129*** | -0.024*** | -0.001*** |
|               | [0.017] | [0.003] | [0.000] |
| \( \text{Elect}_{t+1} \) | -0.043*** | -0.013*** | -0.001*** |
|               | [0.017] | [0.003] | [0.000] |
| Size          | 0.454*** | 0.116*** | -0.004*** |
|               | [0.020] | [0.004] | [0.000] |
| Home mortgages| 1.664*** | 0.404*** | 0.005*** |
|               | [0.084] | [0.019] | [0.001] |
| Core deposits | 1.488*** | 0.315*** | 0.005*** |
|               | [0.085] | [0.018] | [0.001] |
| Return on equity| -0.758***| -0.111***| -0.003 |
|               | [0.200] | [0.041] | [0.002] |
| Bank-County Fixed Effects | Yes | Yes | Yes |
| County-Time Fixed Effects | Yes | Yes | Yes |
| Observations  | 814,156 | 814,156 | 814,156 |
| \( R^2 \)     | 0.490  | 0.575  | 0.565  |
This table reports results of the following specification estimated at the state level (Panel A) and at the county-level (Panel B):

$$Y_{i,s,t} = \alpha_{i,s} + \alpha_{s,t} + \sum_{k=-2}^{1} \beta_k \text{Elect}_{i,h,t+k} + \sum_{k=-2}^{1} \gamma_k \text{Elect}_{i,h,t+k} \cdot Z_{i,h,t} + \delta \cdot Z_{i,h,t} + X' \theta + \epsilon_{i,s,t}.$$  

The dependent variables are (1) log(1+Volume held), (2) log(1+Number held), and (3) Volume held/lag(assets). For state-level (county-level) regressions, Volume held is the volume of jumbo loans bank $i$ either originates and holds or purchases and holds in state $s$ (county $c$) in quarter $t$. Number held is the number of such loans. Assets are the bank’s total assets nationwide. $Z$ is a dummy variable equal to one for lending that was conducted in the bank’s home state and 0 otherwise. $\text{Elect}_{i,h,t+k}(k = -2, -1, 0, 1)$ are set to one if a bank $i$’s home state $h$ holds a gubernatorial election in quarter $t-k$, and zero otherwise. $X$ is a set of time-varying, bank-level control variables including size, home mortgages, core deposits, and return on equity. All control variables are lagged by a quarter. Note that only election variables and their interaction terms are reported. The specification includes bank×state (bank×county) fixed effects and state×time (county×time) fixed effects for state-level (county-level) regressions. Standard errors double clustered at the bank×state level are reported in brackets. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively. See Appendix B for variable definitions.

### Panel A: State-Level Regressions

| Variables                  | (1) log(1+Volume held) | (2) log(1+Number held) | (3) Volume held/lag(assets) |
|----------------------------|------------------------|------------------------|-----------------------------|
| $\text{Elect}_{t-2}$      | -0.106***              | -0.043***              | -0.003***                   |
|                           | [0.034]                | [0.007]                | [0.001]                     |
| $\text{Elect}_{t-1}$      | -0.186***              | -0.040***              | -0.005***                   |
|                           | [0.032]                | [0.007]                | [0.001]                     |
| $\text{Elect}_{t}$        | -0.087**               | -0.028***              | 0.002*                      |
|                           | [0.034]                | [0.008]                | [0.001]                     |
| $\text{Elect}_{t+1}$      | 0.105***               | 0.013*                 | 0.006***                    |
|                           | [0.036]                | [0.008]                | [0.001]                     |
| $\text{Elect}_{t-2} \times \text{Home state}$ | 0.106*                 | 0.068***               | -0.007**                    |
|                           | [0.060]                | [0.014]                | [0.003]                     |
| $\text{Elect}_{t-1} \times \text{Home state}$ | -0.012                 | 0.060***               | 0.008**                     |
|                           | [0.059]                | [0.014]                | [0.004]                     |
| $\text{Elect}_{t} \times \text{Home state}$ | -0.575***              | -0.108***              | -0.033***                   |
|                           | [0.063]                | [0.015]                | [0.003]                     |
| $\text{Elect}_{t+1} \times \text{Home state}$ | -1.009***              | -0.224***              | -0.059***                   |
|                           | [0.063]                | [0.014]                | [0.003]                     |
| Bank-Level Controls       | Yes                    | Yes                    | Yes                         |
| Bank-State Fixed Effects  | Yes                    | Yes                    | Yes                         |
| State-Time Fixed Effects  | Yes                    | Yes                    | Yes                         |
| Observations              | 229,533                | 229,533                | 229,533                     |
| $R^2$                     | 0.570                  | 0.677                  | 0.569                       |
### Panel B: County-Level Regression

| Variables                  | (1)       | (2)       | (3)       |
|----------------------------|-----------|-----------|-----------|
|                            | log(1+Volume held) | log(1+Number held) | Volume held/lag(assets) |
| $Elect_{t-2}$              | -0.138*** | -0.030*** | -0.001*** |
|                            | [0.017]   | [0.003]   | [0.000]   |
| $Elect_{t-1}$              | -0.094*** | -0.015*** | -0.001*** |
|                            | [0.016]   | [0.003]   | [0.000]   |
| $Elect_t$                  | -0.084*** | -0.015*** | 0.000     |
|                            | [0.018]   | [0.003]   | [0.000]   |
| $Elect_{t+1}$              | 0.037**   | 0.002     | 0.001***  |
|                            | [0.018]   | [0.003]   | [0.000]   |
| $Elect_{t-2} \times \text{Home state}$ | 0.194*** | 0.046*** | -0.001** |
|                            | [0.030]   | [0.005]   | [0.000]   |
| $Elect_{t-1} \times \text{Home state}$ | 0.144*** | 0.032*** | 0.001*** |
|                            | [0.031]   | [0.005]   | [0.000]   |
| $Elect_t \times \text{Home state}$ | -0.272*** | -0.051*** | -0.004*** |
|                            | [0.032]   | [0.006]   | [0.000]   |
| $Elect_{t+1} \times \text{Home state}$ | -0.467*** | -0.088*** | -0.007*** |
|                            | [0.033]   | [0.006]   | [0.000]   |
| Bank-Level Controls        | Yes       | Yes       | Yes       |
| Bank-County Fixed Effects  | Yes       | Yes       | Yes       |
| County-Time Fixed Effects  | Yes       | Yes       | Yes       |
| Observations               | 814,156   | 814,156   | 814,156   |
| $R^2$                      | 0.490     | 0.575     | 0.565     |
This table reports results of the following specification estimated at the state level (Panel A) and at the county-level (Panel B):

\[ Y_{i,s,t} = \alpha_{i,s} + \alpha_{s,t} + \sum_{k=-2}^{1} \beta_k \text{Elect}_{i,h,t+k} + \sum_{k=-2}^{1} \gamma_k \text{Elect}_{i,h,t+k} \cdot Z_{i,h,t} \]
\[ + \delta \cdot Z_{i,h,t} + X' \theta + \varepsilon_{i,s,t}, \]

where the dependent variable is \( \log(1+\text{Volume held}) \). For state-level (county-level) regressions, \( \text{Volume held} \) is the volume of jumbo loans bank \( i \) either originates and holds or purchases and holds in state \( s \) (county \( c \)) in quarter \( t \). In column (1), the bank characteristic variable is \( \text{State bank} \), which is set to one if the given bank is state-chartered and zero if nationally chartered. In column (2), the bank characteristic variable is \( \text{Home reliance indicator} \), which is set to one if the fraction of deposits coming from the bank’s home state is 75% or more of the bank’s total deposit, and zero otherwise. Columns (3) and (4) use bank risk indicators constructed using z-score and equity ratio, respectively. High values of z-score and equity ratio indicate less risk. Thus, these risk indicators are set to one if the value of a given risk variable is in the bottom decile of its distribution. \( \text{Elect}_{i,h,t+k}(k = -2, -1, 0, 1) \) are set to one if a bank \( i \)’s home state \( h \) holds a gubernatorial election in quarter \( t - k \), and zero otherwise. \( X \) is a set of time-varying, bank-level control variables including size, home mortgages, core deposits, and return on equity. All control variables are lagged by a quarter. Note that only election variables and their interaction terms are reported. The specification includes bank×state (bank×county) fixed effects and state×time (county×time) fixed effects for state-level (county-level) regressions. Standard errors double clustered at the bank×state level are reported in brackets. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively. See Appendix B for variable definitions.

| Panel A: State-Level Regression | (1) | (2) | (3) | (4) |
|---------------------------------|-----|-----|-----|-----|
| Variables                       |     |     |     |     |
| \( \text{Elect}_{t-2} \)        | -0.094** | -0.021 | -0.056* | -0.055 |
|                                 | [0.038] | [0.047] | [0.033] | [0.033] |
| \( \text{Elect}_{t-1} \)        | -0.132*** | -0.092** | -0.180*** | -0.153*** |
|                                 | [0.036] | [0.044] | [0.032] | [0.032] |
| \( \text{Elect}_t \)            | -0.101*** | -0.015 | -0.186*** | -0.172*** |
|                                 | [0.038] | [0.047] | [0.034] | [0.034] |
| \( \text{Elect}_{t+1} \)        | -0.017 | 0.094* | -0.113*** | -0.082** |
|                                 | [0.040] | [0.050] | [0.035] | [0.036] |
| \( \text{Elect}_{t-2} \times \text{bank characteristic} \) | 0.014 | -0.109** | -0.230*** | -0.330*** |
|                                 | [0.045] | [0.050] | [0.081] | [0.077] |
| \( \text{Elect}_{t-1} \times \text{bank characteristic} \) | -0.129*** | -0.156*** | -0.090 | -0.299*** |
|                                 | [0.044] | [0.049] | [0.079] | [0.073] |
| \( \text{Elect}_t \times \text{bank characteristic} \) | -0.201*** | -0.272*** | -0.043 | -0.168** |
|                                 | [0.046] | [0.051] | [0.083] | [0.069] |
| \( \text{Elect}_{t+1} \times \text{bank characteristic} \) | -0.146*** | -0.272*** | 0.302*** | -0.011 |
|                                 | [0.047] | [0.054] | [0.085] | [0.069] |
| Bank-Level Controls             | Yes | Yes | Yes | Yes |
| Bank-State Fixed Effects        | Yes | Yes | Yes | Yes |
| State-Time Fixed Effects        | Yes | Yes | Yes | Yes |
| Observations                    | 229,533 | 229,511 | 225,847 | 229,533 |
| \( R^2 \)                       | 0.569 | 0.570 | 0.570 | 0.569 |
### Panel B: County-Level Regression

| Variables          | (1)         | (2)         | (3)         | (4)         |
|--------------------|-------------|-------------|-------------|-------------|
|                    | State banks | Home reliance | Z-score | Equity ratio |
| $\text{Elect}_{-2}$ | -0.102***   | -0.053**    | -0.075***   | -0.082***   |
|                    | [0.018]     | [0.022]     | [0.017]     | [0.017]     |
| $\text{Elect}_{-1}$| 0.006       | -0.007      | -0.055***   | -0.035**    |
|                    | [0.018]     | [0.021]     | [0.016]     | [0.016]     |
| $\text{Elect}_{t}$ | -0.032*     | -0.050**    | -0.133***   | -0.101***   |
|                    | [0.019]     | [0.023]     | [0.017]     | [0.017]     |
| $\text{Elect}_{+1}$| 0.027       | 0.009       | -0.071***   | -0.023      |
|                    | [0.020]     | [0.023]     | [0.018]     | [0.018]     |
| $\text{Elect}_{-2} \times \text{bank characteristic}$ | -0.007     | -0.094***   | -0.245***   | -0.237***   |
|                    | [0.023]     | [0.024]     | [0.039]     | [0.037]     |
| $\text{Elect}_{-1} \times \text{bank characteristic}$ | -0.200***  | -0.112***   | -0.203***   | -0.277***   |
|                    | [0.023]     | [0.024]     | [0.041]     | [0.038]     |
| $\text{Elect}_{t} \times \text{bank characteristic}$ | -0.258***  | -0.141***   | 0.041       | -0.235***   |
|                    | [0.024]     | [0.026]     | [0.039]     | [0.038]     |
| $\text{Elect}_{+1} \times \text{bank characteristic}$ | -0.187***  | -0.092***   | 0.280***    | -0.183***   |
|                    | [0.024]     | [0.027]     | [0.041]     | [0.038]     |

| Bank-Level Controls | Yes       | Yes       | Yes       | Yes       |
| Bank-County Fixed Effects | Yes       | Yes       | Yes       |         |
| County-Time Fixed Effects | Yes       | Yes       | Yes       | Yes       |
| Observations        | 814,156   | 814,081   | 803,719   | 814,156   |
| $R^2$                | 0.490     | 0.490     | 0.491     | 0.490     |

Electronic copy available at: https://ssrn.com/abstract=3306884
This table reports the number of jumbo loan applications and the number of denied jumbo loans for election quarters and non-election quarters at the bank/state level and bank/county levels, respectively. The number of loan applications is the sum of the number of loans approved and originated by a bank and the number of loans denied by a bank. Election quarters are the three quarters before an election: $Elect_{t-2}$, $Elect_{t-1}$, and $Elect_t$. Nonelection quarters are the corresponding three quarters in nonelection years.

|                          | Bank/State-Level Observations | Bank/County-Level Observations |
|--------------------------|-------------------------------|---------------------------------|
|                          | Election Quarters | Nonelection Quarters | Election Quarters | Nonelection Quarters |
| Number of loan applications | Mean               | 7.149                        | 7.062                        | 1.775                        | 1.765                        |
|                          | S.D.                | [18.203]                      | [18.038]                      | [3.503]                      | [3.473]                      |
| Number of denied loans    | Mean                | 0.758                        | 0.744                        | 0.195                        | 0.193                        |
|                          | S.D.                | [2.137]                      | [2.102]                      | [0.521]                      | [0.516]                      |
Table 11

Election Characteristics and Sensitivity to Policy Uncertainty

This table reports results of the following specification estimated at the state level (Panel A) and at the county-level (Panel B):

\[ Y_{i,s,t} = \alpha_i + \alpha_{s,t} + \sum_{k=-2}^{1} \beta_k \text{Elect}_{i,h,t+k} + \sum_{k=-2}^{1} \gamma_k \text{Elect}_{i,h,t+k} \cdot Z_{i,h,t} + X' \theta + \epsilon_{i,s,t}. \]

The dependent variable is log(1+Volume held), where, for state-level (county-level) regressions, Volume held is the volume of jumbo loans bank \( i \) either originates and holds or purchases and holds in state \( s \) (county \( c \)) in quarter \( t \). \( Z \) is the election characteristics variable including \( \text{Close}, \text{Wide}, \text{and Term Limited} \). \( \text{Close} \) is an indicator variable set equal to one if the vote difference in an election is less than 2%, and zero otherwise, where vote difference is defined as the difference between the proportion of the votes garnered by the winner and that received by the runner-up. Similarly, \( \text{Wide} \) is set to one if an incumbent governor faces a binding term limit and cannot run for re-election, and zero otherwise. \( \text{Term Limited} \) is equal to one if an incumbent governor faces a binding term limit and cannot run for re-election, and zero otherwise. \( \text{Elect}_{i,h,t+k} \) \( (k = -2, -1, 0, 1) \) are set to one if a bank \( i \)'s home state \( h \) holds a gubernatorial election in quarter \( t - k \), and zero otherwise. \( X \) is a set of time-varying bank-level control variables including size, home mortgages, core deposits, and return on equity. All control variables are lagged by a quarter. Note that only election variables and their interaction terms are reported. The specification includes bank×state (bank×county) fixed effects and state×time (county×time) fixed effects for state-level (county-level) regressions. Standard errors double clustered at the bank×state level are reported in brackets. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively. See Appendix B for variable definitions.

### Panel A: State-Level Regression

| Variables                  | (1)       | (2)       | (3)       |
|----------------------------|-----------|-----------|-----------|
| \( \text{Elect}_{t-2} \)   | -0.086*** | -0.086**  | -0.021    |
|                            | [0.033]   | [0.037]   | [0.037]   |
| \( \text{Elect}_{t-1} \)   | -0.170*** | -0.226*** | -0.090**  |
|                            | [0.032]   | [0.036]   | [0.037]   |
| \( \text{Elect}_t \)       | -0.169*** | -0.242*** | -0.107*** |
|                            | [0.034]   | [0.037]   | [0.038]   |
| \( \text{Elect}_{t+1} \)   | -0.069**  | -0.142*** | -0.018    |
|                            | [0.035]   | [0.039]   | [0.039]   |
| \( \text{Elect}_{t-2} \times \text{election characteristic} \) | -0.060    | -0.011    | -0.211*** |
|                            | [0.100]   | [0.050]   | [0.055]   |
| \( \text{Elect}_{t-1} \times \text{election characteristic} \) | -0.343*** | 0.095*    | -0.310*** |
|                            | [0.096]   | [0.049]   | [0.055]   |
| \( \text{Elect}_t \times \text{election characteristic} \) | -0.395*** | 0.135***  | -0.262*** |
|                            | [0.103]   | [0.052]   | [0.057]   |
| \( \text{Elect}_{t+1} \times \text{election characteristic} \) | -0.240**  | 0.161***  | -0.202*** |
|                            | [0.105]   | [0.053]   | [0.058]   |
| Bank-level controls        | Yes       | Yes       | Yes       |
| Bank-State Fixed Effects   | Yes       | Yes       | Yes       |
| State-Time Fixed Effects   | Yes       | Yes       | Yes       |
| Observations               | 229,533   | 229,533   | 229,533   |
| \( R^2 \)                  | 0.569     | 0.569     | 0.569     |
Panel B: County-Level Regression

| Variables                        | (1) Close   | (2) Wide margin | (3) Term limited |
|----------------------------------|------------|-----------------|-----------------|
| $Elect_{t-2}$                    | -0.099***  | -0.091***       | -0.036*         |
|                                  | [0.016]    | [0.019]         | [0.019]         |
| $Elect_{t-1}$                    | -0.055***  | -0.093***       | 0.029           |
|                                  | [0.016]    | [0.018]         | [0.018]         |
| $Elect_t$                        | -0.112***  | -0.181***       | -0.041**        |
|                                  | [0.017]    | [0.019]         | [0.019]         |
| $Elect_{t+1}$                    | -0.029*    | -0.077***       | 0.005           |
|                                  | [0.018]    | [0.020]         | [0.020]         |
| $Elect_{t-2} \times \text{election characteristic}$ | -0.133**   | -0.039          | -0.215***       |
|                                  | [0.052]    | [0.024]         | [0.026]         |
| $Elect_{t-1} \times \text{election characteristic}$ | -0.291***  | 0.064***        | -0.304***       |
|                                  | [0.051]    | [0.024]         | [0.027]         |
| $Elect_t \times \text{election characteristic}$ | -0.364***  | 0.142***        | -0.272***       |
|                                  | [0.054]    | [0.025]         | [0.028]         |
| $Elect_{t+1} \times \text{election characteristic}$ | -0.288***  | 0.097***        | -0.147***       |
|                                  | [0.055]    | [0.027]         | [0.028]         |
| Bank-Level Controls              | Yes        | Yes             | Yes             |
| Bank-County Fixed Effects        | Yes        | Yes             | Yes             |
| County-Time Fixed Effects        | Yes        | Yes             | Yes             |
| Observations                     | 814,156    | 814,156         | 814,156         |
| $R^2$                            | 0.490      | 0.490           | 0.491           |
This table reports estimation results of the baseline specification (specification (1)) using alternative measures of loan variables. The dependent variables are (1) log(1+Volume originated), where Volume originated is the volume of jumbo loans bank $i$ originates in state $s$ in quarter $t$, (2) log(1+Number originated), where Number originated is the number of such loans, and (3) Volume originated/lag(assets), the volume of such loans scaled by the bank’s lagged assets. $Elect_{i,h,t+k}(k = -2, -1, 0, 1)$ are set to one if a bank $i$’s home state $h$ holds a gubernatorial election in quarter $t - k$, and zero otherwise. $X$ is a set of time-varying bank-level control variables including size, home mortgages, core deposits, and return on equity. All control variables are lagged by a quarter. Note that only election quarter variables are reported. The specification includes bank×state fixed effects as well as state×time fixed effects. Standard errors double clustered at the bank×state level are reported in brackets. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively. See Appendix B for variable definitions.

| Variables | (1) log(1+Volume orig.) | (2) log(1+Number orig.) | (3) Volume orig./lag(assets) |
|-----------|------------------------|-------------------------|-----------------------------|
| $Elect_{t-2}$ | -0.039 [0.033] | -0.019** [0.008] | -0.006*** [0.001] |
| $Elect_{t-1}$ | -0.074** [0.033] | -0.018** [0.008] | -0.005*** [0.001] |
| $Elect_{t}$ | -0.044 [0.032] | -0.023*** [0.007] | -0.004*** [0.001] |
| $Elect_{t+1}$ | -0.013 [0.034] | -0.011 [0.007] | -0.005*** [0.001] |
| Bank-level controls | Yes | Yes | Yes |
| Bank-State Fixed Effects | Yes | Yes | Yes |
| State-Time Fixed Effects | Yes | Yes | Yes |
| Observations | 229,533 | 229,533 | 229,533 |
| R-squared | 0.600 | 0.725 | 0.625 |
Table 13
Conforming Loans

This table estimates the baseline specification (specification (1)) using a sample of conforming loans. The dependent variables are (1) log(1 + Volume held), where Volume held is the volume of conforming loans bank \( i \) either originates and holds or purchases and holds in state \( s \) in quarter \( t \), (2) log(1 + Number held), where Number held is the number of such loans, and (3) Volume held/lag(assets), the volume of such loans scaled by the bank’s lagged assets. \( Elect_{t-2, t+k}(k = -2, -1, 0, 1) \) are set to one if a bank \( i \)’s home state \( h \) holds a gubernatorial election in quarter \( t - k \), and zero otherwise. \( X \) is a set of time-varying bank-level control variables including size, home mortgages, core deposits, and return on equity. All control variables are lagged by a quarter. Note that only election quarter variables are reported. The specification includes bank×state fixed effects as well as state×time fixed effects. Standard errors double clustered at the bank×state level are reported in brackets. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively. See Appendix B for variable definitions.

| Variables            | (1) | (2) | (3) |
|----------------------|-----|-----|-----|
|                      | log(1 + Volume held) | log(1 + Number held) | Volume held/lag(assets) |
| \( Elect_{t-2} \)    | -0.079*** | -0.056*** | -0.008*** |
|                      | [0.021] | [0.007] | [0.001] |
| \( Elect_{t-1} \)    | -0.092*** | -0.055*** | -0.007*** |
|                      | [0.020] | [0.007] | [0.001] |
| \( Elect_{t} \)      | -0.122*** | -0.072*** | -0.004*** |
|                      | [0.021] | [0.008] | [0.001] |
| \( Elect_{t+1} \)    | -0.055**  | -0.027*** | -0.004*** |
|                      | [0.022] | [0.008] | [0.001] |
| Size                 | 0.688*** | 0.442*** | -0.049*** |
|                      | [0.025] | [0.013] | [0.002] |
| Home mortgages       | 2.800*** | 1.628*** | 0.286*** |
|                      | [0.125] | [0.068] | [0.015] |
| Core deposits        | -0.299**  | -0.245*** | 0.068*** |
|                      | [0.127] | [0.065] | [0.010] |
| Return on equity     | 0.490**   | 0.113    | -0.067*** |
|                      | [0.208] | [0.098] | [0.020] |
| Bank-State Fixed Effects | Yes    | Yes     | Yes   |
| State-Time Fixed Effects | Yes    | Yes     | Yes   |
| Observations         | 497,762 | 497,762 | 497,762 |
| \( R^2 \)            | 0.601   | 0.694   | 0.578  |
Table 14
Robustness Checks

This table reports various robustness test results. Column (1) repeats our baseline regression (column (1) of table 5) using pseudo-election dates where the election year is randomly selected for each state with a 4-year interval excluding the actual election year. Column (2) repeats our baseline regression excluding states which hold gubernatorial elections in the same year as presidential elections. Column (3) repeats the baseline specification excluding loans extended to three large states, California, New York, and Florida. The dependent variable is log(1+Volume held), where Volume held is the volume of jumbo loans bank \(i\) either originates and holds or purchases and holds in state \(s\) in quarter \(t\). Only election quarter variables are reported to save space. Standard errors double clustered at the bank×state level are reported in brackets. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively. See Appendix B for variable definitions.

| Variables | (1) Pseudo-election dates | (2) Excluding states coinciding with pres. elections | (3) Excluding large states |
|-----------|--------------------------|---------------------------------|--------------------------|
| \(E_{lect,t-2}\) | -0.011 [0.028] | -0.069 [0.054] | -0.087*** [0.033] |
| \(E_{lect,t-1}\) | 0.084*** [0.028] | -0.227*** [0.054] | -0.178*** [0.032] |
| \(E_{lect,t}\) | -0.002 [0.028] | -0.259*** [0.056] | -0.190*** [0.034] |
| \(E_{lect,t+1}\) | 0.008 [0.027] | -0.080 [0.059] | -0.085** [0.035] |

Bank-level controls | Yes | Yes | Yes |
Bank-State Fixed Effects | Yes | Yes | Yes |
State-Time Fixed Effects | Yes | Yes | Yes |
Observations | 229,533 | 187,157 | 204,627 |
\(R^2\) | 0.569 | 0.564 | 0.561 |
Appendix

A. Earnings Conference Calls Transcripts

A.1. Discussions on regulatory uncertainties and changes

- Capital One Financial Corp. on Jan 18, 2007
  Obviously we’re doing a lot of work to anticipate the impacts of the regulatory guidance. And already in the latter part of last year, that greenpoint has made a number of changes there. But we do anticipate that that guidance will affect – adversely affect our mortgage volumes in some of these specialty areas.

- Valley National Bancorp on Jan 22, 2009
  Gerald Lipkin: I’m obviously not happy to see this type of legislation take place, because I never like to see contract law altered. I think it only makes it more difficult for people to get home loans in the future, because banks are going to be much more reluctant to lend, not being certain that their contract between themselves and the borrower is going to prevail.

- Cullen/Frost Bankers, INC. on Jan 26, 2011
  Today, I’m pleased to report reasons for cautious optimism about our economy and cullen/frost. First and foremost, there is more clarity in the 2011 than we had late last year. The midterm elections are behind us and we now know new composition of congress and the Texas legislature. The tax package passed in late December by congress, providing two more years of clarity concerning taxes, which is especially important to small businesses and families. We’re starting to see some clarity in the interpretation of the financial reform legislation, such as the Feds ruling on interchange fees. That doesn’t mean that we’re necessarily like the changes but the first step is to develop a strategic game plan is to know the rules of the game. As new legislations are announced and clarified, our financial institution will respond accordingly by adopting our business models to these changes. Of course, there’s still a lot we don’t know about
the financial regulations. Healthcare and our economy, so we see 2011 as a transition year for our industry and for Cullen/Frost.

- Cullen/Frost Bankers, INC. on Jan 25, 2012
  Economic uncertainty, over-regulation, and intense competition on pricing and structure continued to affect our loan environment.

- Citigroup INC. on Jan 17, 2012
  We continue to believe mortgage related issues are the single largest source of risk facing the US banking industry. · · · In the meantime, litigation and regulatory risk in the mortgage business will remain high and we continue to focus on further reducing our portfolio.

- First Defiance Financial CORP. on Jan 24, 2012
  Regulatory changes impacted certain areas of service fee income and mortgage banking income was down 18% year over year.

### A.2. Discussions on state-specific political developments

- First Niagara Financial Group, INC. on Jan 25, 2007
  Kevin Timmons: How exposed are you guys if the new governor of New York manages to change the regulations on the REIT structure? Are you very well exposed or just a half a percent or percent to your tax rate? Do you know where you stand?

- Colonial Bank on Jan 17, 2007
  Robert Lowder: Well, good things are happening in Alabama. The Alabama bank is alive and well and strong and doing – and my Alabama folks remind me, they still contribute percentage-wise as much or more than anybody. We don’t need to forget about our down home friends here in Alabama. They’re doing a great job. The economy in Alabama is probably stronger than it’s ever been. The unemployment rate in Alabama is probably lower than it’s ever been. We’ve got a very progressive governor here that’s brought a lot of industry in. You’ve got the amsouth region’s merger that’s just now beginning to shake out out there and that presents all kinds of opportunities for us. So
Alabama is a good place to be banking, and we’re excited about it. And we just thought it was an interesting statistic to throw Alabama in with Florida.

- Popular INC on Jan 24, 2013
  Our significant progress on the credit front in 2012 did not have the benefit of a tail-wind from an economic recovery. While we are seeing some stabilization, additional measures are needed to put Puerto Rico’s public finances on a sustainable footing, as recent credit rating agency reports attest to. We are, however, very encouraged by the new economic and fiscal teams the new governor has appointed. As the largest financial institution on the island, we continue to promote economic development and capital formation to help spur growth.
Appendix B: Variable Descriptions

| Variable Description | Description |
|----------------------|-------------|
| **Dependent Variables** | |
| Volume held<sub>i,s,t</sub> | The volume of jumbo loans bank <i>i</i> either originates and holds or purchases and holds in state <i>s</i> in quarter <i>t</i>. |
| Number held<sub>i,s,t</sub> | The number of jumbo loans bank <i>i</i> either originates and holds or purchases and holds in state <i>s</i> in quarter <i>t</i>. |
| Volume originated<sub>i,s,t</sub> | The volume of jumbo loans bank <i>i</i> originates in state <i>s</i> in quarter <i>t</i>. |
| Number originated<sub>i,s,t</sub> | The number of jumbo loans bank <i>i</i> originates in state <i>s</i> in quarter <i>t</i>. |
| **Election Variables** | |
| Elect<sub>t+k</sub> | Takes a value of one if a bank’s home state holds a gubernatorial election in quarter <i>t−k</i>, and zero otherwise, where the quarter leading up to an election (<i>Elect<sub>t</sub></i>) is defined as the three-month period from September to November. |
| Close | An indicator variable set equal to one if the vote difference in an election is less than 5%, and zero otherwise, where vote difference is defined as the difference between the proportion of the votes garnered by the winner and that received by the runner-up. |
| Wide | An indicator variable set equal to one if the vote difference in an election is more than 15%, and zero otherwise |
| New governor | An indicator variable set to 1 if a new governor is elected in an election and zero if an incumbent is re-elected. |
| Term limited | Term limited is equal to one if an incumbent governor faces a binding term limit and cannot run for re-election, and zero otherwise. |
| **Other Variables** | |
| Size | The logarithm of a bank’s total assets. |
| Home mortgages<sub>i,t</sub> | The sum of first lien and junior lien residential real estate loans and home equity loans as a fraction of total assets. |

*(cont’d in the next page)*
| Variable                  | Description                                                                                                                                 |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Core deposits            | The sum of transaction deposits, savings, and small time deposits divided by total assets.                                                      |
| Return on equity \(i,t\) | Net income divided by average equity. \[\frac{\text{ROA}_{i,t} \times \frac{\text{total equity}_{i,t}}{\text{total assets}_{i,t}}}{\text{sd}(\text{ROA}_{i,t})}\], where \(\text{ROA}_{i,t}\) is a bank’s return on assets averaged over 8 quarters between \(t\) and \(t-7\). Similarly, \(\text{sd}(\text{ROA}_{i,t})\) is standard deviation of a bank’s return on assets calculated over 8 quarters between \(t\) and \(t-7\). |
| Z-score \(i,t\)          | The ratio of total equity to total assets.                                                                                                                                 |
| Equity ratio \(i,t\)     | The ratio of total equity to total assets.                                                                                                                                 |

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