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Troubling Times for the Commercial Banker: Exploring the Recent Wave of Failures

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Abstract

That the United States and the world experienced a major financial crisis and is still struggling to recover comes as no surprise to most. Less well known is the fact that over 400 commercial banks and thrifts have failed in the U.S. since 2008. This paper attempts to understand why so many banks are failing and why they are failing in an uneven pattern across the country. Indeed, over 65 percent of all commercial bank failures since 2008 are concentrated in only six states. Contrary to popular perception, we do not find evidence that mortgage-backed securities or the performance of real estate loans contributed to the probability of failure. We do find that banks in those six states failed because of inadequate capital, off-balance sheet activity, falling core deposits and an increased reliance on brokered deposits. Further, local population growth, unemployment and falling home prices also explain the probability of failure. We also find that the

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twenty-first century failed banks were younger and larger than surviving banks. Taken together, it appears that banks today are failing largely because of the local market conditions and demographics regarding the age and size of the institution.

JEL classification numbers: G01, G21
Keywords: bank failures, financial crisis, mortgage crisis

1 Introduction

The headlines capturing the most recent financial crisis typically include terms such as “housing bubble,” “residential mortgage-backed securities,” “Fannie Mae and Freddie Mac,” “too-big-to-fail,” and “subprime”. Our collective consciousness associates the crisis with such phenomenon. Much less exposed is the significant number of banks that have failed. Not since the late 1980s and early into the 1990s has the United States witnessed a substantial number of commercial bank failures. According to the Federal Deposit Insurance Corporation (FDIC), between October 2000 and the end of 2007, 27 commercial banks and thrifts failed. In sharp contrast, between the first of January 2008 and October 17, 2011, 401 commercial banks and thrifts failed. Further, as of August 23, 2011, the FDIC has identified 865 banks and thrifts as “problem” institutions which may suggest that there will be more failures in the future.

Why are they failing? At first blush, the answer seems obvious from the headlines; the banks extended bad mortgage loans or purchased subprime mortgage-backed securities and got into trouble. When housing prices fell, these mortgage loans and assets went bad and banks started to fail. From this perspective, bank failures reflect bad assets which are not unlike the reason for bank failures in the past. Indeed, some scholars argue banks in the twenty-first century are failing for the same reasons they have historically failed (see, for

example Fuchs and Bosch [1]). However, there is also a significant body of literature exploring how commercial banking has significantly changed so that sources of bank distress may be different from past experiences (see, for example King et al. [2], Gorton [3], or Feldman and Lueck [4]). As will be shown in the second section of this paper, the issue of contemporary bank failures has received scant attention. The purpose of this paper it to try to understand why so many banks failed in the United States between the first of 2008 through the first quarter of 2011. Bank failure and instability make it more difficult for the economy as a whole to recover. Indeed, there is a significant body of literature linking the strength of the banking sector to faster economic growth in the real sector (see Kroszner and Strahan [5]. Consequently, understanding the health of the banking sector is an important step to understanding and providing for a healthy real sector (see Davig and Hakkio [6]).

This paper is organized as follows. The second section of the paper reviews existing literature on contemporary bank failures and explains our contribution to the literature. In the third section, we explore characteristics of U.S. commercial bank failures. Section four provides an explanation of our data. The empirical model, estimation techniques and estimated results are explained in section five. The final section concludes.

2 Literature Review

The United States has a long history of episodes of substantial numbers of bank failures. Several of these occurred in the antebellum era and even more in the era after the National Bank Act of 1864 but prior to the creation of the Federal Reserve. Since the central bank creation, two waves of bank failures predate the current wave. The first was during the Great Depression and the second during the late 1980s and early 1990s. A healthy set of bank failure literature exists on the

failures of the Great Depression and those of the 1980s and 1990s. Hendrickson and Nichols [7] and Torna [8] both thoroughly review the literature so that is not repeated here. In contrast, the wave of bank failures in the twenty-first century has received little attention. That which does exist is reviewed here along with an explanation of the contributions this paper makes to understanding contemporary bank failures.

Cebula [9] investigates how regulatory changes impact bank failure rates between 1980 and 2008. While this sample misses most of the recent bank failures, the primary finding is that the 1999 Gramm-Leach-Bliley Act, which opened commercial banking to nontraditional activities such as investment banking and brokerage activity, increased the bank failure rate. The author hints that this may be the result of increased risk taking afforded by the regulation.

Whereas Cebula [9] controls for the 1999 regulation using a binary control, Torna [8] places emphasis on how regulatory developments altered bank behavior more specifically. For example, Torna [8] uses an income ratio that captures revenues from brokerage, investment banking, insurance, venture capital, securitization, and derivative activities. Torna [8] refers to these new opportunities afforded to banks by regulators as ‘nontraditional’ or ‘modern’ banking and aims to determine how this contributed to the bank failures between October 2007 and October 2009. He finds that investment banking and venture capital activity increase the likelihood of failure while brokerage activities may contribute to the declining performance of a healthy bank. In this regard, Torna’s [8] findings support those of Cebula [9].

Torna’s [8] analysis is also important because he analyzes different classifications of banks. More specifically, he hypothesizes, among other things, that management decisions and strategies at healthy banks are different from those at troubled banks. Certainly, if a bank is in trouble, management may take greater risks to save their job and reputation. To test this hypothesis, the author generates a list of troubled banks by ranking all commercial banks in the sample by tier-one

capital. The banks at the bottom of the list are categorized as 'troubled' banks. Torna [8] finds support for his hypothesis: healthy banks become troubled banks for different reasons than a troubled bank fails. For example, the ratio of loans to assets is negatively related to a troubled bank failing while the same ratio is positively related to a healthy bank falling into the troubled classification.

A third study of contemporary bank failures is found in Cole and White [10]. This work empirically explains the commercial bank failures in 2009 and the authors find that traditional proxies for bank risk and performance that are found on balance sheets and in income statements explain the 2009 failures. Interestingly, they find that mortgage-backed securities are an insignificant factor. At the same time, they find that banks with more construction and development loans, commercial mortgages and multi-family mortgages are more likely to fail. In the end, Cole and White [10] interpret their results to mean that twenty-first century failures are much like those of the 1980s and early 1990s.

In attempt to understand contemporary bank failures, Hendrickson and Nichols [7] consider a sample of failed and non-failed banks from 1994 through the third quarter of 2010. The authors consider banks that failed and survived in the state of Georgia because this state contains the greatest number of bank failures in the new century. Like Cole and White [10], they find that banks fail today for many of the same reasons that they have failed in the past. That is, traditional balance sheet and income statement information explain the likelihood of failure. However, Hendrickson and Nichols [7] also find that failed banks in Georgia have unique characteristics that are different from earlier episodes of U.S. bank failures. For example, the authors find that the probability of failure increases with bank size. This is at odds with findings from bank failures of the 1930s and 1980s. Like Cole and White [10] the authors also do not find mortgage-backed securities to be significant. Finally, in contrast to Cebula [9] and Torna [8], the findings indicate that investment activity does not increase the probability of failure. In the end, Hendrickson and Nichols [7] conclude that banks

are failing today for many of the same reasons that they have failed in the past but also for reasons unique to the twenty-first century.

Another study exists which does not use empirical methods of analysis but, nonetheless, considers bank failures from 2007 through the first quarter of 2010 is the work of Aubuchon and Wheelock [11]. These authors reflect on the failures of the 1980s and 1990s and note the regional clustering of failures during that wave of failures. Many scholars have argued that the regional pattern reflects geographical constraints that bank faced from regulation. The argument is that banks were unable to diversify and so were vulnerable to regional economic shocks. Aubuchon and Wheelock [11] observe that the bank failures between 2008 and 2010 also exhibit a regional pattern. Their analysis suggests that, even though banks have been granted freedom to diversify through regulatory changes in the 1990s, many banks continue to operate in limited markets and so remain vulnerable to regional shocks.

Most recently, Wheelock [12] analyzes the newest wave of bank failures to determine if there has been a significant increase in market concentration in those markets in which failures occurred. Most (over 94 percent) of the failed banks were resolved through the FDIC's purchase and assumption policy. This means that the FDIC accepts bids from other banks to purchase the failed bank and Wheelock finds that most of the acquiring banks are in-market competitors of the failed bank. A natural concern, then, is that this would increase the concentration in certain banking markets. However, Wheelock finds that the acquisition of these failed institutions has largely left market concentrations unchanged.

For several reasons, this paper makes an important contribution to existing literature. First, it utilizes the largest time span to include the most recent crisis. Second, we include a non-failure sample that is unique in the recent failure literature. This acts as a control group from which to further understand behavior at failed institutions. Third, and finally, this study uses panel data that isolates regional and regulatory differences to try and understand bank failures.

Table 1: Distribution of Commercial Bank Failures:
January 1, 2008 – November 1, 2011

State	Number of Commercial Bank Failures	Number of Failures as a Percent of Total Number of Failures in the U.S.
GA	69	20.47
FL	47	13.95
IL	42	12.46
CA	32	9.49
WA	16	4.75
MN	16	4.75
All other states	115	34.12
TOTALS	337	100

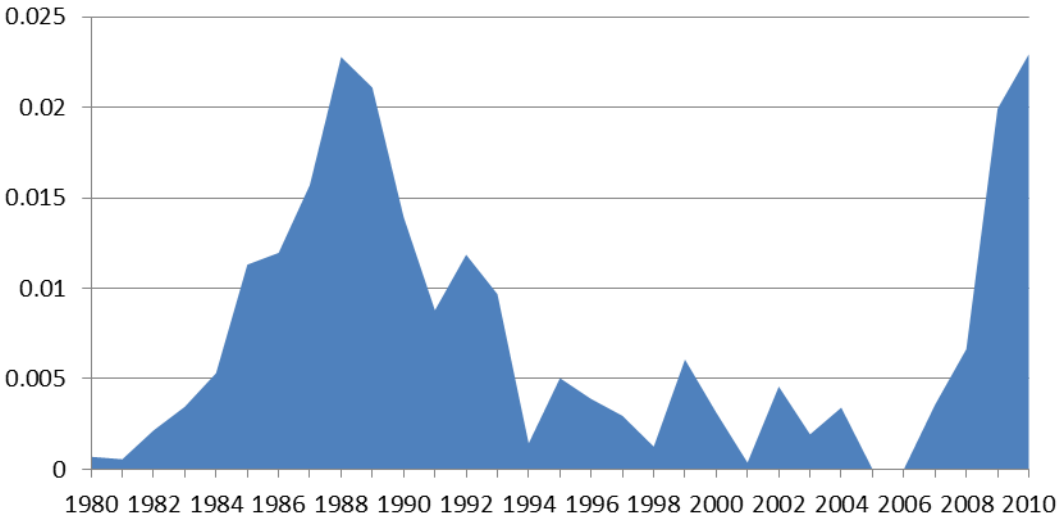
Source: Data from the Failed Bank List at the FDIC.
Note that these are only commercial banks and does not include thrifts.

3 Characteristics of U.S. Commercial Bank Failures

Much like the wave of bank failures late in the 1980s and into the first few years of the 1990s, the current failures are regionally clustered. As shown in Table 1, between the beginning of 2008 through the first of November 2011, over twenty percent of all the failures took place in Georgia. In nearby Florida, 47 banks, or nearly fourteen percent of the total number of failures occurred. Indeed, the six states that account for the largest number of failures account for 65.88 percent of all of the commercial bank failures during this period and two states, Georgia and Florida, account for as many failures as all other states not listed combined.

Since not much attention is given to the number of bank failures, it is easy to perhaps dismiss the numbers as relatively insignificant. However, as shown in Figure 1, as a percent of the total number of failures, this most recent wave is

more severe than the previous wave. Because there are far fewer banks in total today, each failure is more significant.

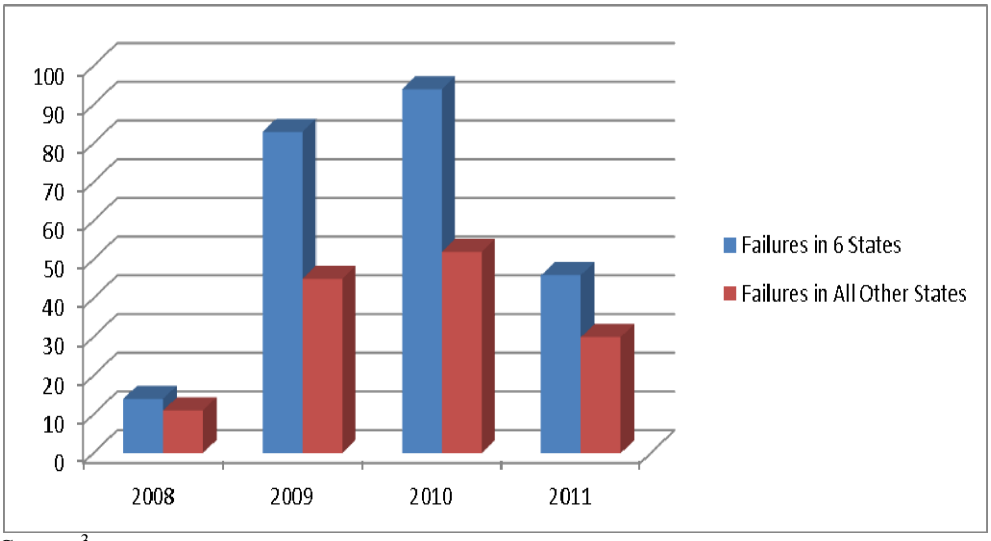


Source: FDIC, Table CB02.

Figure 1: Percent of Commercial Banks Failed: 1980-2010

Finally, it is interesting to consider the timing of the failures. Figure 2 illustrates the number of failures in the six states identified in Table 1 as well as the total number of bank failures for each year between 2008 and 2011. In the aggregate, most failures occurred in 2010 followed by 2009. Thus far, 2011 has been an improvement over these two years but is still significantly more than the failures in 2008. Nonetheless, if these numbers illustrate a trend, the outlook for the future may be improving. At the state level, Georgia has had more failures in three of the four years than any other state while Florida leads the way with the most failures in 2010. For all states, 2009 and 2010 were more difficult, in terms of failure numbers, than either 2008 or 2011. Finally, while 2011 thus far seems to be an improvement, there have been seventeen failures since the first of

September so the failure pace seems to have picked up more recently. The next section of the paper attempts to shed empirical light on the timing, among other influences, of these failures.



Source[3]:

Figure 2: Number of Commercial Bank Failures in Select States and Totals: 2008-2011

4 Data and Model

The focus of this analysis is on commercial bank failures between the fourth quarter of 2000 and the first quarter of 2011. As is shown in Figure 1, the vast majority of these failures occurred after the start of 2008. Our sample includes quarterly data on many of the commercial banks that failed during this period as

[3] Calculated from www.fdic.gov/bank/individual/failed/banklist.html. Failures through 10/17/11.

well as a random sample of non-failed commercial banks. There are 204 banks in the failed sample and 228 in the non-failed sample. We use bank-level, city-level, and metropolitan statistical area-level (MSA-level) data to empirically attempt to understand the nature of these twenty-first century bank failures. This section of the paper outlines the different types of data used and offers an explanation for why each type is important to the study of bank failures.

4.1 Balance Sheet and Income Data

For each bank, several types of data are assembled and these are defined in Table 2. First, for each bank, relevant balance sheet and income statement data are collected. An appropriate starting point is to include data contained in the CAMELS bank ratings. All banks undergo on-site examinations by regulators and the outcome of that examination is known as the bank's CAMELS grade. CAMELS is an acronym for the five elements of the bank's financial condition that have been identified as most important; capital, assets, management, earnings, liquidity, and sensitivity to systemic market risk. Existing bank failure studies generally include similar measures (see, for example, White [13], Thompson [14], Mitchener [15]). Capital adequacy, asset quality, management quality, earnings, and liquidity are all expected to reduce the possibility of failure. Sensitivity is proxied thought the percentage change in the prime rate. Because the liabilities at a bank are of a shorter maturity than assets, a rise in interest rates will tend to reduce profits and, in the process, perhaps make the bank more likely to fail (see Ball [16]).

Also included in this analysis are other balance sheet and income statement data that capture trends in the business of banking. That is, banking in the twenty-first century is, in many ways, different from banking in the late twentieth century. Banks face more competition today than ever before. This competition is for both liabilities as well as assets. On the liability side, bankers have lost some

of their core deposits which have traditionally been their cheapest source of funds. To the extent that they must rely on more expensive deposits, for example, brokered deposits or large certificates of deposit, this may increase costs and possibly contribute to fragility. For example, we analyzed the brokered deposits at both failed and non-failed banks and found that failed banks had higher brokered deposits than non- failed banks; 9 percent of total deposits versus 3 percent and that percentage increased prior to their failure, up to 16 percent. Bankers are also now able to borrow from the Federal Home Loan Bank (FHLB) to potentially off-set lost deposits. Existing scholarship, see, for example, Stojanovic [17], suggests that banks may borrow to finance riskier activities. From this perspective, access to these funds should increase the probability of bank failure. On the asset side of the balance sheet, our analysis accounts for the type of loans that banks have been extending in the past ten or so years. Obviously, the quality of these loans may impact the possibility of failure. Given the developments in the residential real estate market, particular attention is given to real estate loans as a ratio of total loans and past due residential loans to capture the quality of these mortgages.

Finally, two other data are gathered from the bank's balance sheet and income statement. First, banks are increasingly relying on off-balance sheet activity to generate revenue. Indeed, according to the findings in DeYoung and Rice [18], noninterest income, i.e. off-balance sheet activity, account for over half of all U.S. commercial bank revenue. However, the same authors find that in 2003, 84 percent of all noninterest income at U.S. commercial banks is earned by 1 percent of all banks. So, it may be that off-balance sheet activity remains largely the domain of larger institutions. Nonetheless, we expect that a bank engaged in off-balance sheet activity will be less likely to fail. Second, technology and increased competition, it is argued, have increased the ability of the banker to diversify their assets (see, for example, Kolari et al. [19]). Increases in diversification are expected to reduce the possibility of failure.

4.2 Macroeconomic Data

To capture the broader market performance, we include the home-price index for the MSA in which each bank is located, the change in the unemployment rate and the change in the population. Given the stress of the housing market, we control for fluctuations in home prices at the MSA level. There is literature to suggest that the growth rate of the population impacts the performance of the commercial bank. Harvey and Spong [20] find that population growth is positively related to bank performance among community banks. Another control for local economic conditions is the MSA unemployment rate. Calomiris and Mason [21] and Thompson [14], among others, find low unemployment to reduce the likelihood of failure and we anticipate the same in this analysis.

4.3 Regulation Data

It is well established that the regulation of the banking industry impacts its stability (see, for example Wheelock and Wilson [22], Alston et al. [23], Calomiris and Mason [21], Hendrickson [24], Mitchener [15], Cebula [9], Wheelock [25]). While it is often difficult to measure regulation, in this analysis we create proxies for three important regulatory developments. The 1994 Riegle-Neal Interstate Banking and Branching Efficiency Act allows commercial banks to engage in interstate banking and possibly interstate branching. Most empirical scholarship on branching finds that opportunities to branch improve stability through increased diversification, lower costs and improved balance sheet performance (see, for example, Johnson and Rice [26], Nippani and Green [27]). To capture this, we include the ratio of the number of bank offices to population within the city. It is expected that the number of branches will increase bank stability. The 1999 Gramm-Leach-Bliley Act allowed banks to diversify through the creation of financial holding companies. In this structure, banks can sell and underwrite

securities and insurance, invest in real estate, and other activities related to banking. We capture the impact of this regulatory change through the derivatives activity at each bank. Existing empirical scholarship on this is mixed. For example, Cebula [9] and Torna [8] find that this regulation increased the rate at which banks have failed while Hendrickson and Nichols [7] do not find empirical evidence to support the higher failure rates. The third regulatory change is the 1995 revision to the Community Reinvestment Act (CRA). This change gave banks a greater incentive to make loans to low-income borrowers and to invest in subprime mortgage-backed securities in order to improve their CRA score. Since these activities may come with greater default risks, it is expected to contribute to bank failure rates. Indeed, Nichols et al. [28] find empirical evidence that the CRA changes did increase the probability of bank failure. However, Cole and White [10] find that mortgage-backed securities, our proxy for the CRA regulation, do not contribute to the probability of bank failure.

4.4 Competition Data

To capture the nature of competition facing each bank, we include three variables. First, the number of nonbanks within the MSA is included to capture competition that banks are facing from other financial institutions including mortgage brokers, investment banks, mutual funds companies and finance companies. To account for intrabank competition, we also include the number of banks per capita in the city in which the bank is headquartered. Finally, to account for the market share of each bank, we follow Calomiris and Mason [21] and include the bank's deposit market share within the city. The relationship between competition and bank stability is complex. Over the history of U.S. commercial banking regulation has often been aimed at minimizing competition. However, there is empirical evidence to suggest that more competition forces banks to be more efficient and, in the process, to be more stable (Hendrickson [24]).

4.5 Age and Size Data

Finally, we also capture the age and size of each bank. Yom [29] finds that new banks, defined as eight years old or younger, are more vulnerable to failure because they concentrate heavily in real estate loans, particularly commercial and industrial loans. Yom hypothesizes that there may be an adverse selection problem at work; newer banks do not have an established customer base so that many of their loan applications are from borrowers who have high risk projects and/or who have been rejected by well-established banks. His data finds that between 1995 and 2003, the states with the highest number of new banks were Florida (121 de novo banks), Georgia (96), Illinois (81), California (85), and Texas (64). Following Yom, we expect that younger banks are more likely to fail than older banks. In terms of bank size, previous U.S. experience with a large number of banks failures finds that smaller banks were more vulnerable to failure (see, for example, Thompson [14], Mitchener [15], Wheelock and Wilson [30]). This is largely seen to be the result of lower costs at larger banks and a greater ability to diversify.

5 Model and Results

Our model of bank failures captures the data discussion above in which i represents the individual bank within the sample for quarter t:

$$FAIL_{i,t} = \beta_0 + \beta_1(BALANCE/INCOME_{i,t-4}) + \beta_2(MACRO_{i,t-4}) + \beta_3(REGULATION_{i,t-4}) + \beta_4(COMPETITION_{i,t-4}) + \beta_5(AGE_{it}) + \beta_6(SIZE_{i,t-4}) + \beta_7(YEAR_t) + \theta(STATE_i) + \varepsilon \quad (1)$$

The dependent variable, $FAIL_{it}$, is equal to one if the bank failed during quarter t, otherwise it is equal to zero. $BALANCE/INCOME_{i,t-4}$ captures the fourteen variables listed in Table 2 under the same heading. These were discussed

in section 4.a above. In a similar fashion, $MACRO_{i,t-4}$ captures the three variables listed in Table 2 and reviewed in section 4.b of this paper. The remaining variables, $REGULATION_{i,t-4}$, $COMPETITION_{i,t-4}$, $AGE_{i,t}$ and $SIZE_{i,tt-4}$ are discussed both in Table 2 and in the data discussion under the same name. All independent variables, except for the age of the bank, are lagged one year (four quarters) since changes in the variables do not immediately impact the probability of failure. $YEAR_t$ is a trend variable designed to capture temporal changes in the bank failures while $STATE_i$ are a set of state dummies included to control for state-level fixed effects.

Because the dependent variable, $FAIL_{it}$, is binary, the logit estimation technique is appropriate and standard in bank failure literature (see, for example, Cole and White [10], Thompson [14], White [13], Wheelock [25]). Due to collinearity issues between the three COMPETITION variables, the number of banks per capita and the number of non-banks per capita are converted to a composite variable for the regressions explained below. Tables 3 and 4 contain the logit regression results. In Table 3, the sample is only those failed and non-failed banks headquartered in the six states listed in Table 1. Table 4 contains the regression results for all the failed and non-failed banks in our sample regardless of the state in which the bank is headquartered. In doing these two separate regressions, we are attempting to determine if there was something different about these six states that made them prone to so many more bank failures.

5.1 Logit Results for Six States

Table 3 contains the logit fixed effects estimation results for all failed and non-failed banks in the six states with the greatest number of failures (i.e., the six states listed in Table 1). Twelve of the variables are statistically significant and all are of the expected sign. For brevity, individual state fixed effects are not reported. Also contained in Table 3 are the marginal effects which give the change in the probability of failure resulting from a change in the independent

variable. Thus, a one unit increase in the capital to asset ratio (e.g., from 0.5 to 0.51) would decrease the probability of a bank failure by 2.56 percent. The marginal effects are all small which reflects the fact that there are, on a relative basis, a small number of failures and that the probability of any one bank failing in any single quarter is very low. Cole and White [10] have similar findings in their logit estimation. The focus here is on the estimated coefficients and on whether they increase or decrease the probability of failure.

From the balance sheet and income variables, five are statistically significant and all of these are of the anticipated sign. Of the CAMELS variables, only capital adequacy is statistically significant in the logit regression across the six states. Higher capital reduces the probability of failure which is as expected and is consistent with Cole and White [10] and Gopalan [31]. However, existing literature generally finds more of the CAMELS variables explain failures. For example, Cole and White [10] find non-performing assets contribute to their explanation of bank failures while neither our total loans to total assets nor our past due on residential mortgages are statistically significant. We also find that off-balance sheet activity contributes to the probability of failure. While this conflicts with the notion that these activities improve revenue and so should reduce failures, there is also the possibility that off-balance sheet revenue sources may increase risk. Our results suggest the second possibility; that risk may have increased. Finally, from among the BALANCE/INCOME data, our results suggest that the composition of deposits play an important role in the stability of the bank. All classifications of deposits are statistically significant and suggest that banks that rely more on core deposits and large certificates of deposit (CDs) are less likely to fail. This is as expected since core deposits are generally the cheapest source of funds and interest rates on large CDs have been extremely low so are not expensive at this point. Our findings also show that brokered deposits contribute to the probability of failure. This is also as expected since these deposits tend to be more expensive and have historically been used by banks to aggressively obtain

funds for risky projects such as energy loans in the 1980s.

None of the three regulatory proxies is statistically significant. In our six state sample, the holdings of mortgage-backed securities does not contribute to the probability of failure. This is consistent with the Cole and White [10] findings on mortgage-backed securities. Perhaps this reflects the fact that most of the subprime MBS were not owned by commercial banks. Indeed, 93.2 percent of all MBS at commercial banks and thrifts were invested in either government guaranteed MBS (64.3 percent) or triple A private label MBS (28.9 percent) which are much less risky than many of the other tranches of MBS in the market (see Friedman and Kraus [32]). That is, the data suggests that these commercial banks were originating mortgage loans, securitizing them and purchasing relatively safe MBS. The number of bank offices is also not significant. This is certainly unexpected given the vast literature in banking which suggests that branching is stabilizing. While the regulatory control for the 1999 Gramm-Leach-Bliley Act, the ratio of total derivatives to total assets, is not significant, it falls just outside of being so at the 10 percent level. This may reflect the fact that except for the very large banks in the U.S., few have expanded into investment banking activities.

All three of our MACRO variables are statistically significant and of the anticipated sign. Higher home prices within the MSA lower the probability of failure. When home prices started falling, this put pressure on banks' real estate loans and the likelihood of failure increased. Population growth rates are negatively related to the probability of failure. This finding is consistent with the work of Harvey and Spong [20]. The final macroeconomic variable, the percentage change in unemployment rates, is positively related to the possibility of a bank failure. This is consistent with the findings in Calomiris and Mason [21] and Thompson [14]. In the end, the local, macroeconomic environment surrounding each bank contributes significantly to its stability.

While none of our COMPETITION variables are statistically significant in the logit, an examination of deposit market share in Tables 5 and 6 indicates that

that failed banks attempt to boost deposits in the period just prior to the failure. More specifically, on average, banks that failed had 17 percent of the deposit market share versus nearly 26 percent for non-failed banks. One year prior to failure, however, deposit market share for the failed banks had increased to 22.37 percent. The run up of deposits may signal the failed banks last attempt at gathering resources to remain solvent.

Both the size and age of the bank are significant in explaining twenty-first century bank failures. Interestingly, we find that the larger the bank, the higher the probability of failing. This is in contrast to earlier failure episodes in which the failure possibility fell with bank size. Failed banks in our sample have, on average, assets of $331 million while the non-failed banks in our sample have, on average, $194 million in assets. Using the definitions put forth Kolari et al. [19] and Cole and White [10], our averaged sized failed bank is a large institution while the surviving is considered a small bank. One possibility is that the larger banks may have been more willing to take on risk because of the likelihood of being judged 'too-big-to-fail' by regulators. Indeed, in their theoretical model, Ennis and Malek [33] find that larger institutions are more likely to fail because of the additional risk these banks take on when they believe that they will be bailed out through too-big-to-fail policies.

Finally, we find that older banks are less likely to fail than younger banks. This is consistent with the results of Yom [29] who argues that younger banks face an adverse selection problem in that those seeking loans from younger institutions are the borrowers unable to obtain credit from established banks in the market. Related, Walter [34] argues that overbanking may have occurred in the beginning of the twenty-first century. The argument is that during an expansion, too many banks may have entered the market and would then be the first driven out by a weakened economy. According to new charter data at the FDIC, the six states with the highest number of failures accounted for 40.3 percent of all new banks between 2000 and 2010. Finally, our results are also consistent with DeYoung et

al. [35] who find that banks most vulnerable to failures are those between the ages of three and five years because at this time, the capital of the very young bank (under three years) has declined but earnings remain variable. Comparative statistics provide further evidence; for the sample of six states with the high concentration of failures, 46.5 percent of the banks that failed were between three and five years old during the sample period. Of the surviving banks in these same states, 33 percent were three to five years old. It seems clear that the population of failed banks in these states were very young.

5.2 Logit Results for All States

A broader sample of failures (204) and non-failures (228) from 35 states is used to produce the logit results in Table 4. There are several notable differences from the smaller sample of six states in Table 3. One is that the home-price index does not explain the probability of failure in the larger sample. One interpretation of this is that the decline in the housing market did not impact banks equally across the country. Certainly, some regions were hit harder by the real estate bust and our results suggest that banks were also hurt asymmetrically. Similarly, unemployment appears to be more of a factor in the six states with the majority of the failures. We suspect that this reflects the uneven downturn in employment across states. In the end, it appears that the local conditions in our six states were a greater factor in explaining the concentrated number of failures than in the wider sample of 35 states.

Another difference between the two samples is that two variables that were not statistically significant in the smaller sample are significant in the wider sample. Across all states, the derivatives activity contributes to the probability of failure. This finding is consistent with Torna [8] and Cebula [9]. The difference between our two samples likely reflects a more accurate estimation of the standard error in the full sample as opposed to any differential impact of derivative activity,

as the t-statistic in the six-state sample is 1.58, falling just outside a 10 percent level of significance. The number of banks and nonbanks increase the probability of failure in the wider sample suggesting that competition impacts bank stability in some areas of the country more than others. Further, the sign of the coefficient suggests that competition increases the probability of failure perhaps because of too much entry or what Walter [34] refers to as overinvestment.

5.3 Comparison of Means at Failed Banks

We are also interested in learning whether bankers changed their behavior in the year prior to failure. To do so, we compare the mean, bank-level data at failed banks in the six states where the failures are concentrated for two time periods. Table 6 contains the mean value of our bank data for the sample period up to one year prior to the failure of the bank (column 3 in Table 6). We also find the mean value for these same variables for the one year prior to the failure (column 2 in Table 6). Finally, the t-statistic in column 4 indicates whether the two means are statistically different from one another.

As expected, we find capital and earnings fall in the year prior to failure. Total assets along with real estate loans, past due mortgage loans, mortgage-backed securities, diversity and some deposits all increase, as expected. The composition of deposits change in the year prior to failure as bank rely increasingly on brokered deposits and FHLB advances but less on core deposits and large certificates of deposit. Since core deposits are the cheapest source of funds, this deposit shift is consistent with higher costs and, all else equal, the fall in earnings. Further, the deposit market share climbs significantly in the year prior to failure which, when taken with the shift in deposits, indicates that failed banks were aggressively acquiring brokered deposits just prior to failure.

The fact that core and CD deposits fell while FHLB advances and brokered deposits rose is consistent with concerns that commercial banks had difficulty

providing liquidity during the crisis. Mora [36] finds that, despite deposit insurance, banks had trouble attracting deposits during the most recent financial crisis. The argument is that some deposits are not covered by insurance and even if they are insured there are fixed costs to getting deposits from a failed bank. Mora [36] finds, in the aggregate, that core deposits declined during the early stages of the crisis (between July 2007 and early in September 2008) but increased thereafter. Our firm level finding suggest that, at failed banks, core and CD deposits fell as bankers had trouble attracting deposits the year prior to failure. Their response was to turn to brokered deposits and FHLB advances, both of which are more expensive liabilities to the bank.

Two other observations from Table 6 are worth noting. First, the management quality ratio (insider loans to total loans) falls the year prior to failure. These bankers were probably diverting funds away from insider loans (loans to executive officers, directors and principal shareholders) and towards other investments. Second, the off-balance sheet ratio (noninterest income to total assets) falls in the year prior to failure. This suggests that off-balance sheet income is falling perhaps reflecting the deterioration from the MBS earnings or losses from other asset or foreign exchange trading. More generally, Table 6 indicates that bankers changed their behavior in important ways prior to failing. Further, the results in Table 6 validate the logit findings in Table 3.

Finally, we also offer a comparison of means for a wider sample of banks and the results are found in Table 7. In this sample, there are 35 states with a sample of 204 failed banks and 228 non-failed banks. We compare the mean values of each variable in the sample of failed banks to determine if it is significantly different from the mean value at surviving banks. There are a few notable differences between the failed and non-failed banks across our entire sample and these are consistent with the findings in the logit estimation, i.e. the findings outlined in Tables 3 and 4 as explain above. That is, the comparison of means analysis confirms the findings in the logit regression.

5.4 General Findings

Our results suggest, generally, that banks in the six hardest hit states are failing because of the health of their surrounding communities, deterioration in their capital adequacy, their declining core deposits and rising brokered deposits, off-balance sheet activity, larger size and young age. It is somewhat surprising to us that more of the CAMELS were not significant. Scholarship on other waves of failures has almost universally found many of the CAMELS to have important explanatory power when it comes to commercial bank failures. We found that only declining capital, from amongst the CAMELS, contributed to the twenty-first century failures. It seems that with this wave, deposit and off-balance sheet activity mattered more than traditional measures of bank stability.

The second surprising finding is that our branching variable does not explain twenty-first century failures in either sample. It has long been argued that allowing banks to branch will improve the diversity of their balance sheet and make them less vulnerable to local economic shocks. We find that local economic conditions such as local unemployment, population growth, and home prices are all important in explaining bank failures in the smaller bank sample. However, our branching measure, the number of bank offices per capita, is not statistically significant. One possibility is that perhaps the banks are not branching far enough from the home office to capture the required diversification. Aubuchon and Wheelock [11] make the same suggestion in their recent work on bank failures.

6 Conclusions

Both Gopalan [31] and Fuchs and Bosch [1] suggests that bank failures today are not fundamentally different from failures in the past. That is, banks fail today because of traditional measure of bank health which essentially means poor balance sheet performance. This work finds limited support for this position since

we do find that some elements of the balance sheet explain the probability of bank failures in both the narrow and wider samples. In those areas with a high concentration of failures, capital inadequacy, off-balance sheet activity and deposit composition all contribute to the probability of failure in the twenty-first century. Further, the local economies in which banks operate also play a significant role in the health of the institution, particularly for the six states in which failures were particularly intense. These are findings that support bank failure experience in the past. However, we only find one of the CAMELS to be significant. Traditionally, the CAMELS have been found to explain much more of commercial bank instability. Indeed, we find only capital to matter from the list of traditional balance sheet and income data. This provides empirical support to the following:

> "We don't know where the next crisis is going to come from," [Treasury Secretary] Geithner told me. "We won't be able to foresee it. So we want to build a much bigger cushion into the system against those basic human limitations. I don't want a system that depends on clairvoyance or bravery." He added, "The top three things to get done are capital, capital, capital. [37]"

Also like previous failures in the U.S., there is a regional component to this experience. As illustrated in Table 1, over 65 percent of all the banks that failed between 2008 and October 2011 are in six states. Particularly hard hit are Georgia, Florida and Illinois. The local economic conditions in these states, particularly the unemployment data and home-price indices, all point to more severe downturns in these regions relative to the nation's average. Those states hit harder by the wider macroeconomic decline, all things equal, experienced many more failures than other regions of the country.

Nonetheless, twenty-first century bank failures are also different from previous experiences. First, bank failures are getting larger. That is, in the past, most of the

banks that failed tended to be smaller banks. Of course, there are exceptions in which an extremely large bank fails, but the rule has been that smaller banks are more likely to fail. That trend seems to be changing as the sample of failed banks in this work is significantly larger than those that survived. Finally, there seems to be evidence that younger banks are more vulnerable to failure than older banks. Indeed, across the population of failed banks in the U.S. 46.7 percent of the failed banks were between three and five years old sometime between 2000 and 2011. In contrast, in the sample of surviving banks, 32 percent were that same age sometime during the first eleven years of the century.

Our results suggest that banks remain vulnerable to local markets conditions and could be well served trying to insulate themselves from such conditions. Our results also suggest that if the economy is unable to recover, there may be more bank failures to come. Indeed, the pace of bank failures in 2011, while less than 2009 or 2010, has picked up in the early fall months. Between the first of September and the middle of October, seventeen more banks have failed. In contrast, only four failed in June but thirteen failed in July. There is a rather uneven pattern this year and coupled with weak macroeconomic conditions might indicate that the number of bank failures will continue to grow.

A final, forward looking, observation bears mentioning. Our findings indicate that off-balance sheet activity, which includes fee income, contributes to the probability of failure. Recent regulatory developments have limited fees that banks can charge for services, including for example, fees on debit cards. It is expected that deposit service charges and credit card fees will rise in the future because of the recent regulatory changes. It is uncertain if the increases in revenue from new fees will off-set old fees or if the changing nature of this off-balance sheet revenue will impact bank stability. Nonetheless, given the relationship of off-balance sheet activity to failures, this is a development that should be watched closely.

Table 2: Variable Definitions and Sources

Variable Name	Variable Definition	Source
BALANCE/INCOME		
Capital/Total Assets	Ratio of capital to assets on the bank balance sheet. *Captures capital adequacy*.	www2.fdic/gov/sdi
Total Loans/Total Assets	Ratio of loans to assets on the bank balance sheet. *Captures asset quality*.	www2.fdic/gov/sdi
Inside Loans/Total Assets	Ratio of inside loans (loans to executive officers, directors, or principal shareholders) to assets on the bank balance sheet. *Captures management quality*.	www2.fdic/gov/sdi
Net Income/Total Assets	Ratio of income to assets on the bank balance sheet. *Captures earnings*.	www2.fdic/gov/sdi
(Federal Funds Purchased-Federal Funds Sold)/Total Assets	Ratio of the difference in federal funds purchased and sold to assets on the bank balance sheet. *Captures liquidity*.	www2.fdic/gov/sdi
Sensitivity	Percentage change in the prime rate. *Captures the sensitivity to market risk.*	www.federalreserve.gov/releases/h15/data.htm
Past Due 1-4 Family Loans/Total 1-4 Family Loans	Ratio of past due residential mortgage loans to total residential mortgage loans on the bank balance sheet. *Captures quality of mortgage loans.*	www2.fdic/gov/sdi
Diversity	Sum of squared ratios of business loans, real estate loans, consumer loans, and securities to total assets.[1] *Captures increased diversification of bank balance sheet.*	www2.fdic/gov/sdi
Noninterest Income/Total Assets	Ratio of noninterest income (income from fiduciary activities, service charges, asset trading and foreign exchange transactions) to assets on bank balance sheet.[2] *Captures increased reliance on off-balance sheet activities.*	www2.fdic/gov/sdi
FHLB Advances/Total Assets	Total borrowing from the Federal Home Loan Bank. *Captures increased credit used by commercial banks.*	www2.fdic/gov/sdi
Core Deposits/Total Deposits	Total domestic deposits minus time deposits in excess of $100,000 in domestic offices. *Captures the extent to which banks rely on core deposits.*	www2.fdic/gov/sdi
Brokered Deposits/Total Deposits	Total brokered deposits. *Captures the extent to which banks rely on brokered deposits.*	www2.fdic/gov/sdi
Jumbo CD/Total Deposits	Total deposit accounts in excess of $100,000. *Captures the extent to which banks rely on large CD deposits.*	www2.fdic/gov/sdi
Real Estate Loans/Total Loans	Ratio of total real estate loans to total loans. *Captures the extent to which*	www2.fdic/gov/sdi

	banks extend real estate loans.	
REGULATION		
Bank Offices Per Capita	Ratio of the number of bank offices to population. *Captures the 1994 Riegle-Neal Act.*	www2.fdic.gov/sod
Total Derivatives/Total Assets	Ratio of derivatives to assets on the bank balance sheet. *Captures the 1999 Gramm-Leach-Bliley Act.*	www2.fdic/gov/sdi
MBS/Total Assets	Ratio of mortgage-backed securities to assets on the bank balance sheet. *Captures the 1995 revision to the Community Reinvestment Act*.	www2.fdic/gov/sdi
MACRO		
Home Price Index	Four-quarter percent change in MSA house price index. *Captures changes in local housing markets.*	www.fhfa.gov
Population	Percentage change in city population. *Captures local population changes.*	www.census.gov/population
Unemployment	Percentage change in MSA unemployment. *Captures local unemployment changes.*	www.bls.gov
COMPETITION		
Banks Per Capita	The number of commercial banks per capita in the MSA.[3] *Captures the competitive market between banks.*	www2.fdic.gov/sod
Non-Banks Per Capita	The number of financial institutions who have a home or branch office in the MSA. *Captures competition with non-bank financial institutions.*	www.ffiec.gov/hmda
Deposit Market Share	The bank's share of total deposits at all FDIC insured banks within the city of the failed bank as of June 30 for each year. *Captures the relative position of the bank within its headquartered city.*	www2.fdic.gov/sod/sodMarketBank.asp
SIZE and AGE		
Total Assets	The natural log of the total assets at each bank. *Captures the size of the bank.*	www2.fdic/gov/sdi
AGE	The natural log of the age of the bank in years. *Captures the age of the bank.*	www2.fdic.gov/idasp/index.asp

Notes: The House Price Index is extrapolated for the 2003 observation because this data is missing from data source. The FHLB advance data available from 2001 forward.

[1]This measure follows Kolari et al. [19].

[2]This measure follows Boyd and Gertler [38].

[3]This measure follows Wheelock and Wilson [30]). The consumer price index was used to convert nominal into real values (www.bls.gov).

Table 3: Logit Estimates for Bank Failures in California, Florida, Georgia, Illinois, Minnesota, and Washington. Includes State Fixed Effects

	Coefficients	Marginal Effects
Capital/Total Assets	-10.563***	-0.0256***
	(2.55)	(0.009)
Total Loans/Total Assets	0.825	0.002
	(1.11)	(0.002)
Inside Loans/Total Assets	0.872	0.002
	(3.93)	(0.009)
Net Income/Total Assets	-6.502	-0.0157
	(4.57)	(0.0126)
Liquidity	0.0207	0.0005
	(1.78)	(0.004)
Log of Total Assets	0.302***	0.0007***
	(0.102)	(0.003)
Bank Offices Per Capita	0.105	0.0002
	(0.76)	(0.002)
Home Price Index	-0.037***	-0.00009***
	(0.008)	(0.00002)
Total Derivatives/Total Assets	2.880	0.0069
	(1.81)	(0.0046)
Deposit Market Share	0.0063	0.00001
	(0.004)	(0.00001)
MBS/Total Assets	-0.5006	-0.0012
	(1.94)	(0.004)
Banks and NonBanks Per Capita	0.568	0.0013
	(0.916)	(0.0021)
Past Due 1-4 Family Loans/Total 1-4 Family Loans	-0.0887	-0.0002
	(2.57)	(0.006)
Diversity	-0.864	-0.002
	(0.731)	(0.0017)
Noninterest Income/Total Assets	24.166***	0.058**
	(9.41)	(0.024)
Ln(Age)	-0.291***	-0.0007**
	(0.106)	(0.0002)
Real Estate Loans/Total Loans	1.826	0.0044
	(1.14)	(0.0025)
Jumbo Deposits/Total Deposits	-0.999*	-0.0024
	(0.559)	(0.0016)
Core Deposits/Total Deposits	-1.707**	-0.0041**
	(0.705)	(0.0018)
Brokered Deposits/Total Deposits	2.114***	0.005***
	(0.543)	(0.0017)

FHLB/Total Assets	-0.431 (1.76)	-0.0010 (0.004)
Change in Prime Rate	-0.017 (0.012)	-0.00004 (0.00003)
Change in Unemployment Rate	0.0177* (0.009)	0.0000* (0.00002)
Change in MSA Population	-0.051*** (0.012)	-0.00013*** (0.00004)
Trend	0.514*** (0.055)	0.0012*** (0.00024)
Constant	-1039.78*** (110.48)	
N Pseudo R^2	9439 0.267	

A *, **, and *** represent significance at the 10, 5, and 1 percent respectively. Standard errors in parentheses.

Table 4: Logit Estimates for Bank Failures: Full Sample.
† Includes State Fixed Effects

	Coefficients	Marginal Effects
Capital/Total Assets	-6.53***	-0.028***
	(2.11)	(0.010)
Total Loans/Total Assets	1.098	0.005
	(0.77)	(0.003)
Inside Loans/Total Assets	-1.154	-0.005
	(3.54)	(0.016)
Net Income/Total Assets	-7.562**	-0.0328**
	(3.27)	(0.0164)
Liquidity	-1.121	-0.0052
	(1.304)	(0.005)
Log of Total Assets	0.226***	0.0009***
	(0.079)	(0.0004)
Bank Offices Per Capita	-0.198	-0.0008
	(0.186)	(0.0008)
Home Price Index	-0.0001	-0.0000007
	(0.001)	(0.00001)
Total Derivatives/Total Assets	3.729***	0.016**
	(1.31)	(0.005)
Deposit Market Share	0.0046	0.00002
	(0.003)	(0.00001)
MBS/Total Assets	0.148	0.0006
	(1.454)	(0.006)
Banks and NonBanks Per Capita	0.635*	0.0027*
	(0.376)	(0.0016)
Past Due 1-4 Family Loans/Total 1-4 Family Loans	0.721	0.0031
	(1.37)	(0.006)
Diversity	-0.0007	-0.000003
	(0.397)	(0.0017)
Noninterest Income/Total Assets	14.608***	0.063***
	(5.64)	(0.025)
Ln(Age)	-0.178**	-0.0007**
	(0.084)	(0.0003)
Real Estate Loans/Total Loans	-0.077	-0.003
	(0.913)	(0.003)
Jumbo Deposits/Total Deposits	-0.691	-0.003
	(0.441)	(0.002)
Core Deposits/Total Deposits	-0.978*	-0.004**
	(0.535)	(0.002)
Brokered Deposits/Total Deposits	1.637**	0.007***
	(0.442)	(0.002)
FHLB/Total Assets	1.639	0.007
	(1.29)	(0.005)

Change in Prime Rate	-0.002 (0.009)	-0.00001 (0.00004)
Change in Unemployment Rate	0.0105 (0.006)	0.00004 (0.00003)
Change in MSA Population	-0.0347** (0.015)	-0.00016** (0.00007)
Trend	0.553*** (0.043)	0.0023*** (0.0002)
Constant	-1116.73*** (86.69)	
N Pseudo R^2	13749 0.235	

†States Include: AL, AR, AZ, CA, CO, CT, FL, GA,IL, IN, KS, LA, MD, MI, MN, MO, MS, NC, NE, NH, NJ, NM, NV, NY, OH, OK, OR, PA, SC, SD, TN, TX, UT, WA, and WI.
A *, **, and *** represent significance at the 10, 5, and 1 percent respectively.
Standard errors in parentheses.

Table 5: Comparison of Means by Bank Failure Status for Banks in California, Florida, Georgia, Illinois, Minnesota, and Washington.

	Non-Failed Banks	Failed Banks	t-statistic[1]
Capital/Total Assets	0.116 (0.008)	0.100 (0.0008)	13.19***
Total Loans/Total Assets	0.631 (0.001)	0.694 (0.001)	-26.37***
Inside Loans/Total Assets	0.019 (0.0003)	0.022 (0.0005)	-5.178***
Net Income/Total Assets	0.005 (0.0002)	0.0005 (0.0002)	12.89***
Liquidity	0.159 (0.023)	0.089 (0.017)	2.39**
Total Assets	194343 (3286.92)	331321.0 (8270.19)	-15.39**
Bank Offices Per Capita	0.0646 (0.001)	0.0913 (0.003)	-7.94***
Total Derivatives/Total Assets	0.0035 (0.0003)	0.0121 (0.0007)	-11.00***
Deposit Market Share	25.92 (0.302)	17.13 (0.248)	22.46***
MBS/Total Assets	0.055 (0.0007)	0.0532 (0.0008)	1.36
Banks Per Capita	0.0005 (0.000006)	0.0007 (0.00002)	-7.54***
Past Due 1-4 Family Loans/Total 1-4 Family Loans	0.022 (0.0006)	0.025 (0.0008)	-3.19***
Diversity	19.015 (2.707)	3.96 (0.642)	5.41***
Non-Interest Income/Total Assets	0.0089 (0.0004)	0.0079 (0.0004)	1.61
Age	39.31 (0.364)	27.21 (0.344)	24.12***
FHLB Advances/Total Assets	0.0388 (0.0009)	0.0465 (0.0007)	-6.31***
Core Deposits/Total Deposits	0.799 (0.001)	0.758 (0.002)	17.55***
Brokered Deposits/Total Deposits	0.0315 (0.0007)	0.0935 (0.0017)	-32.49***
Jumbo CD/Total Deposits	0.382 (0.001)	0.397 (0.002)	-5.45***
Real Estate Loans/Total Loans	0.712 (0.002)	0.761 (0.002)	-16.83***
Commercial & Industrial Loans/Total Loans	0.159 (0.001)	0.155 (0.001)	2.48**
Number of Non-Banks per Capita	0.0640 (0.0013)	0.0623 (0.0030)	0.50

[1] t test for the null that mean of non-failed banks equals mean of failed banks, assuming unequal variances. A ** and *** indicate significance at the 5% and 1% level respectively. Standard Error in parentheses.

Table 6: Comparison of Means for Failed Banks in California, Florida, Georgia, Illinois, Minnesota, and Washington, One year Prior to Failure versus Earlier.

	One Year Prior to Failure	Early Sample	t-statistic[1]
Capital/Total Assets	0.050 (0.001)	0.107 (0.0009)	-39.25***
Total Loans/Total Assets	0.697 (0.003)	0.693 (0.002)	0.91
Inside Loans/Total Assets	0.018 (0.001)	0.023 (0.0005)	-2.91***
Net Income/Total Assets	-0.025 (0.0009)	0.004 (0.0002)	-29.83***
Liquidity	0.202 (0.080)	0.073 (0.016)	1.56
Total Assets	691063 (43004)	294399 (7887)	9.075**
Bank Offices Per Capita	0.098 (0.012)	0.090 (0.003)	0.65
Total Derivatives/Total Assets	0.0138 (0.002)	0.0118 (0.0007)	0.83
Deposit Market Share	22.37 (0.846)	16.60 (0.259)	6.52***
MBS/Total Assets	0.060 (0.002)	0.0523 (0.0009)	3.22***
Banks Per Capita	0.0008 (0.00009)	0.0007 (0.00002)	0.59
Past Due 1-4 Family Loans/Total 1-4 Family Loans	0.040 (0.002)	0.023 (0.0008)	6.07***
Diversity	8.547 (3.074)	3.315 (0.590)	1.67*
Noninterest Income/Total Assets	0.0046 (0.0016)	0.0084 (0.0004)	-2.18**
FHLB Advances/Total Assets	0.058 (0.002)	0.044 (0.0007)	5.88***
Core Deposits/Total Deposits	0.747 (0.005)	0.760 (0.002)	-2.25**
Brokered Deposits/Total Deposits	0.163 (0.005)	0.083 (0.002)	13.26***
Jumbo CD/Total Deposits	0.308 (0.006)	0.409 (0.002)	-15.63***
Real Estate Loans/Total Loans	0.833 (0.005)	0.751 (0.002)	13.32***
Number of Non-Banks per Capita	0.058 (0.011)	0.062 (0.0030)	0.35

[1] t test for the null that mean of failed banks one year prior to failure equals the mean of failed banks early in the sample, assuming unequal variances.
A ** and *** indicate significance at the 5 percent and 1 percent level respectively.
Standard Error in parentheses.

Table 7: Comparison of Means by Bank Failure Status for Banks in Full Sample.

	Non-Failed Banks	Failed Banks	t-statistic[1]
Capital/Total Assets	0.115 (0.007)	0.102 (0.0007)	12.59***
Total Loans/Total Assets	0.635 (0.001)	0.700 (0.001)	-31.89***
Inside Loans/Total Assets	0.019 (0.0003)	0.018 (0.0005)	2.57***
Net Income/Total Assets	0.005 (0.0001)	-0.0003 (0.0002)	19.60***
Liquidity	0.130 (0.019)	0.047 (0.011)	3.62***
Total Assets	193989 (3025.42)	346382.0 (9282.94)	-15.60***
Bank Offices Per Capita	0.094 (0.003)	0.0909 (0.002)	0.84
Total Derivatives/Total Assets	0.0032 (0.0002)	0.0111 (0.0005)	-13.26***
Deposit Market Share	28.32 (0.288)	17.83 (0.213)	29.16***
MBS/Total Assets	0.053 (0.0006)	0.0523 (0.0007)	0.92
Banks Per Capita	0.0006 (0.000006)	0.0007 (0.00002)	-4.17***
Past Due 1-4 Family Loans/Total 1-4 Family Loans	0.021 (0.0005)	0.023 (0.0006)	-2.15**
Diversity	16.12 (2.289)	2.75 (0.424)	5.74***
Noninterest Income/Total Assets	0.0083 (0.0003)	0.0073 (0.0003)	1.98**
FHLB Advances/Total Assets	0.0392 (0.0008)	0.0502 (0.0006)	-10.52***
Core Deposits/Total Deposits	0.802 (0.001)	0.758 (0.001)	22.40***
Brokered Deposits/Total Deposits	0.0347 (0.0008)	0.0980 (0.0014)	-37.81***
Jumbo CD/Total Deposits	0.376 (0.001)	0.400 (0.001)	-9.97***
Real Estate Loans/Total Loans	0.706 (0.002)	0.749 (0.002)	-17.09***
Number of Non-Banks per Capita	0.0879 (0.0018)	0.0757 (0.0025)	3.86***

† States Include: AL, AR, AZ, CA, CO, CT, FL, GA,IL, IN, KS, LA, MD, MI, MN, MO, MS, NC, NE, NH, NJ, NM, NV, NY, OH, OK, OR, PA, SC, SD, TN, TX, UT, WA, and WI.

[1] t test for the null that mean of non-failed banks equals mean of failed banks, assuming unequal variances.

A ** and *** indicate significance at the 5 percent and 1 percent level respectively.

Standard Error in parentheses.

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