

U.S. COMMUNITY BANKING PERFORMANCE

M. Kabir Hassan*, William J. Hippler**, Walter Lane*

Abstract

Community banking plays an important role in financial intermediation in the United States, especially in the context of providing financing in smaller, rural markets and for small businesses. However, recent trends in regulation, the economic environment, and industry practices have led to a significant decline in the amount of FDIC-chartered institutions that qualify as community banks. In addition, the share of community-bank-held assets in the United States is declining as well. The decline of the community banking industry has significant implications for the efficiency and growth of the real economy, as larger banks may not be able to serve the community banking demographic as efficiently. In this study, we develop a dataset that allows us to analyze banking data collected from all FDIC-charted institutions and published by the FDIC. We use this data to analyze the community banking industry in the U.S. We are able to report the trends, strengths, and weakness of the community banking industry for the past twenty years. In addition, we develop two sets of community banking indexes meant to assess the relative and nominal changes in the strength of the community banking industry. One set of indicators simply measure market share, while others are composite community banking indexes that represent a unique contribution to the analysis of the industry. Finally, we analyze developments in the community banking industry across the tenures of the past three FDIC Chairs, which can provide context and guidance with respect to the perspective of key regulatory officials on community banking issues. Analysis of the data shows that the community banking industry is declining in the United States. Our Community Bank Momentum Index (CMOM) shows that, on a nominal basis, the community banking industry has experienced some growth; however, our Community Banking Relative Growth Index (CRGI) shows that community banks have been weakening, relative to non-community banks.***

Keywords: Community Banks, Growth Index, Momentum Index, Political Regime

JEL Classification: C14, C41, G21, G33

* Department of Economics and Finance, University of New Orleans, USA

** College of Business and Public Management, University of La Verne, USA

*** The Authors acknowledge a research grant given by Gulf Coast Bank and Trust Company to help support this research.

1. Introduction

Community banking is an important sector of the financial system in the United States. Smaller, community banks comprise a majority of banking institutions in the United States and are especially responsible for servicing the banking needs of small businesses and rural communities. FDIC Chairman Martin Gruenberg stated in a 2012 conference on community banking the fact that community banks “provide nearly 40 percent of all the small loans that insured financial institutions make to businesses and farms”. As such, the role that community banks play in providing capital to small and rural businesses is significant, and maintaining a healthy community banking system has important economic implications.

Despite the important role that community banks play in the U.S. economy, the number of community banking institutions in the United States has been shrinking over the past several decades. Changes in the economic and regulatory environments within the banking industry have contributed to an increasing

amount of banking consolidation, which has shifted the landscape of financial intermediation in the United States away from traditional community banks towards larger banks and non-depository institutions. The relaxation of interstate banking regulations in the early 1990s helped pave the way for the merging of financial institutions across state lines. Additionally, economic conditions, such as low interest rates, as well as the development of new financial products, have changed the banking environment in a way that favors larger financial institutions.

The effects of the changes that have been taking place in the banking industry have important economic implications. The goal of this study is to provide an examination of the status of the community banking industry in the United States. We develop a unique FDIC dataset on financial institutions to examine several key statistics regarding the size, composition, and efficiency of the community banking industry. Additionally, we create several community banking indexes that can be used by regulators, academics, and practitioners in order to

quickly assess the strength and trends in the community banking industry.

The paper is divided into six sections. Section 2 gives a brief overview of pertinent academic literature on the U.S. community banking industry. Section 3 describes the data and examines the community banking industry the U.S. Section 4 describes our construction of community banking indices and how they measure relative and absolute changes in community banking conditions in the U.S. Section 5 examines the role played by FDIC regulators in promoting the community banking the in the U.S. Section 6 concludes.

2. Literature Review

Avery and Samolyk (2004) study the role of consolidation activities in community banks in small business lending during two 3-year study periods. They argue that consolidation of big (community) banks lowers (increases) loan growth during 1994 – 1997 period. The effect somewhat decreases in the 1998 – 2000 period, however. Overall, community bank lending to small businesses increased on a nominal basis, net of organization reclassification, due to consolidation and asset growth.

Critchfield, Samolyk, Davison, Hanc, Gratton, and Davis (2004) examine the role of community banks in small business lending and local deposit markets, the decline in the number of community banks from 1985 to 2003, and consolidation patterns in different areas. They also investigate changes in performance, characteristics, and the prospects of community banks.

DeYoung and Duffy (2002) take an atypical approach to analyze the community banking sector in the U.S. Their analysis complements the usual data-intensive studies by using first-hand observation, collected in a Federal Reserve survey from August 2001. The survey provides insight on payment service needs and fundamental the missions of community banks. It also provides insight into the threats and opportunities posed by large banks, the perceptions that the playing field is not always level, and the growing tension between traditional high-touch relationship banking and potentially more efficient high-tech banking. The study finds bankers to be more optimistic about the future viability of community banks and less sanguine about changes in regulations and technology. Such changes provide opportunities (e.g. attracting relationship-based deposit customers who prefer bundled pricing), but pose threats (e.g. competition from non-bank financial firms, such as brokerage firms) for community banks to coexist with large, multi-state banks. This coexistence is strongly dependent on efficient operation, good management, and continuous innovation.

DeYoung, Hunter, and Udell (2004) study the effects of deregulation, technology, and competitive

rivalry on the size and health of the U.S. community banking sector and on the quality and availability of banking products and services. They further devise a theoretical framework to analyze the effects of these changes on the competitiveness of community banks. Empirical evidence indicates that these changes have intensified overall competition, but created potentially exploitable strategic positions for well-managed community banks. The study also predicts changes in the number and distribution of community banks.

DeYoung, Lang, and Nolle (2007) argue that the use of internet websites as an alternative distribution channel improves the profitability of community banks by increasing revenue from deposit service charges. Internet adoption further increases the movement of deposits from checking accounts to money market deposit accounts, the use of brokered deposits, and the average wage rates for bank employees. Internet adoption has little to no effect on loan mix, however. The evidence suggests that the internet is a complement to physical branches.

Goddard, Liu and, Wilson (2014) investigate the entry, exit, and growth of commercial banks in the U.S. from 1984 – 2012 using hazard function estimation and cross-sectional growth regression. They find that exit via acquisition is negatively related to asset size and quality, profitability, managerial efficiency, and capitalization, but positively related to liquidity. Smaller banks face the risk of failure as loan share and credit risk increase. Growth is negatively related to size, and is persistent to some extent.

Hakenes, Hasan, Molyneux, and Xie (2014) theoretically show that regional small banks, compared to big interregional banks, more effectively promote local economic growth, especially where initial endowment is low and credit rationing is severe. Empirical analysis using a sample of German banks and corresponding regional statistics confirm their theoretical hypothesis.

Jagtiani, Kotliar, and Maingi (2014) examine the roles and characteristics of community banks to find their impact in small business lending (SBL) and relationship lending. The authors analyze risk characteristics of acquired community banks, compare the pre- and post-acquisition performances and stock market reactions to these acquisitions, and investigate how the acquisitions have affected small business lending. They find that a declining number of community banks does not affect SBL, as large acquiring banks tend to play a larger role in SBL.

Mitts (2014) examines section 601(a)(2) of the Jumpstart Our Small Business (JOBS) Act of 2012 and finds positive effects of deregistration arising from the act using the quasi-experimental technique of regression discontinuity (comparative interrupted time series analysis to regression discontinuity). The study finds that net income (pre-tax income) increases (decreases) by \$1.27 (\$2.35) per \$1 of average assets.

Peirce, Robinson, and Stratman (2014) analyze the Mercatus Center's Small Bank Survey and find that the recent Dodd-Frank Act affects small banks and their customers significantly. Respondents find Dodd-Frank to be more burdensome than the Bank Secrecy Act, as it has increased compliance costs significantly. Thus, the banks are considering shrinking product and service offerings, so the Dodd-Frank Act will affect customers indirectly.

Whalen (2007) argues that community banks show continued reliance on traditional intermediation activities to generate income, meaning lending strategy is a key determinant of survival for these banks. Analysis of lending trends indicates that the preference for commercial (non-commercial) lending is increasing (decreasing) in community banks. Typical community banks have changed lending strategies, leading to reduced returns and increased risk, all else being equal. Also, small banks are suffering a large performance disadvantage, regardless of lending strategy.

Whalen (2013) empirically analyzes the ability of banks to switch among competing supervisors as an important factor contributing to increased bank failures from 2007 to 2011. A competing risk hazard model by Fine and Gray (1999) suggests that mergers and supervisory changes represent competing risks. The study also suggests that higher failure rates of supervisor-switching banks cannot be attributed to differences in agency funding sources or organizational responsibilities.

Wright (2011) argues that commercial banks have a failure rate of about 1 percent on average each year. Before failing, or merging, community banks have provided intermediation services for decades. The author attributes such success to governance, where stockholders carefully choose and monitor bank officers, and charge the officers to produce steady dividends.

3. U.S. Community Banking Definition and Performance

3.1 Community Banking Definition and Data

The first step in analyzing the community banking industry in the United States and how it has changed over time is defining a community banking institution and identifying a source of banking data that can be utilized to analyze the banking industry over time. To this end, we use previous community banking studies as a guide in developing an empirical definition of a community banking institution. In addition, we utilize banking data that is collected by the Federal Deposit Insurance Corporation (FDIC) and made available on a quarterly basis to the public. We collect the FDIC data and modify it in order to create a database that best suits the needs of our longitudinal study.

There are varying definitions that regulators and previous community banking studies have used to define a community bank. Typically, community banks are considered institutions that fall below a certain size as measured by total assets. Previous research has used total asset sizes ranging from \$750 million to \$5 billion as the threshold used to define a community bank. Additionally, community banks are often defined by a limited geographic reach and a focus on more traditional banking activities as their primary operations. Accordingly, many community banking studies expand the empirical definition beyond asset size to incorporate limitations on the geographic and operational scope of the institution.

In this study, we define a community bank as an FDIC-chartered institution having total assets of less than \$1 billion in 2013 constant-dollars. We adjust nominal total asset values for the entire sample period to 2013 levels using the CPI-U measure of inflation provided by the Bureau of Labor Statistics (BLS). For the purpose of defining a community bank, we consider the adjusted total asset values at the charter level.

We apply our definition of community banks to a dataset comprised of all banking institutions in the U.S. The FDIC collects data on a quarterly basis for all U.S. banking institutions that are FDIC insured in the Statistics on Depository Institutions (SDI) database. The database collects data on an institutional level in the "Financial Data" database and on a branch level in the "Branch Office Deposits" database. The data are made available on a quarterly basis from the fourth quarter of 1992 at the institutional level and on an annual basis from 1994 at the branch level. The data are available from the public website of the FDIC (www.fdic.gov).

The Financial Data contain information on over 1,000 variables of interest for each FDIC-chartered institution. The data include important financial statement data, such as information regarding assets, liabilities, equity, income, and expenses. In addition, the data also contain more detailed information that are valuable in analyzing the community banking industry, such as letters of credit, derivative securities, and the types of loans held by financial institutions. Each data file contains the cross-sectional data for each quarter, and the data are presented in 63 files, based on several basic categories, such as assets and liabilities, changes in equity, derivatives, deposits, etc.

Unfortunately, since the SDI data as provided on the FDIC website are presented cross-sectionally by category in this manner, they are of limited use for the purpose of broader analysis. In order to make the data more robust, we combine the data to create one database consisting of a panel dataset containing all the variables for every institution for each quarter. We first combine the 63 cross-sectional data sets for each quarter, which creates a single cross-sectional dataset for each quarter, consisting of every variable (>1,000 variables). Next, we combine the cross-

sectional data into one panel dataset that contains all the variables for the entire time series. The resulting dataset contains over 800,000 institution-level observations. The larger, combined dataset allows for the analysis of the relative performance of the community banking industry from both a cross-sectional and time-series perspective.

3.2 Community Banking in the United States

Table 1 illustrates how banking characteristics have changed over the past twenty years for both community banks and non-community banks in the United States. The Table reports the levels of several key characteristics for the average community and non-community bank in the sample. Included in the table are characteristics describing the size, profitability, efficiency, and capitalization of a representative bank in each industry.

3.2.1 Community Banking Industry Size

Community banks dominate non-community banks in terms of the number of institutions. In 2013:Q4 there are 6,149 FDIC charters that qualify as community banks, compared with only 671 non-community banks. Additionally, a considerable amount of consolidation has taken place in the commercial banking industry over this time period, which has occurred as a result of several key changes in the regulatory and operational environments of commercial banks. Both non-community and community banks saw a reduction in the number of FDIC charters from 1993 to 2013; however, the brunt of the consolidation has been borne by the community banking industry. The number of non-community banks has decreased 19.1% from 1993 to 2014, while the number of community bank charters has decreased by 50.8%.

Table 1. U.S. FDIC-chartered Bank Statistics

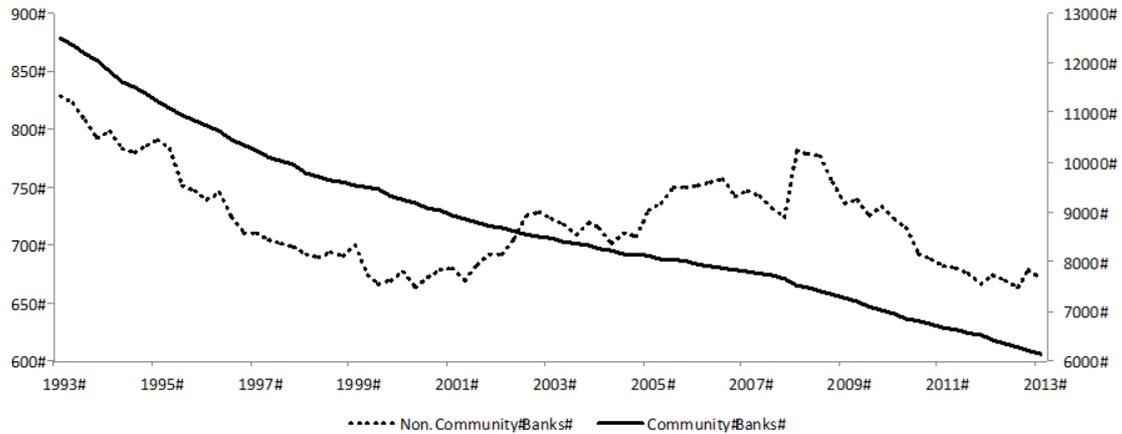
	Community Banks			Non-Community Banks		
	1993:Q4	2013:Q4	% Change	1993:Q4	2013:Q4	% Change
No. of Institutions	12,495	6,149	-50.8%	829	671	-19.1%
Total Assets	94,027	222,266	136.4%	4,298,681	19,640,810	356.9%
Number of Employees	45	55	22.1%	1,492	2,571	72.3%
Total Cash Balances	4,993	18,492	270.4%	294,830	2,397,926	713.3%
Net Loans and Leases	53,072	137,931	159.9%	2,502,002	10,137,891	305.2%
Loan Loss Allowance	880	3,821	334.4%	61,931	181,208	192.6%
Total Liabilities	85,669	200,441	134.0%	3,979,296	17,449,481	338.5%
Total Deposits	80,995	186,206	129.9%	3,057,847	14,750,939	382.4%
Total Equity Capital	8,386	24,178	188.3%	320,934	2,214,431	590.0%
Total Interest Income	6,391	8,527	33.4%	282,094	614,069	117.7%
Net Interest Income	3,741	7,380	97.2%	150,555	545,823	262.5%
Total Noninterest Income	953	2,476	159.8%	86,586	349,465	303.6%
Net Operating Income	870	1,926	121.3%	37,961	208,282	448.7%
Net Income	977	1,974	102.0%	42,861	212,130	394.9%
Cash Dividends	416	1,016	144.0%	23,200	121,852	425.2%
ROA	1.09	0.93	-14.9%	0.97	1.14	17.9%
ROE	12.12	7.01	-42.2%	14.73	9.70	-34.1%
Efficiency Ratio	73.14	108.62	48.5%	67.60	66.46	-1.7%
Assets Per Employee	2.30	4.63	101.3%	5.34	23.66	342.9%
Net Interest Margin	4.55	3.66	-19.6%	4.29	3.70	-13.6%
Net Operating Income to Assets	0.97	0.90	-7.3%	0.89	1.13	26.2%
Equity Capital to Assets	9.58	11.37	18.7%	7.65	11.44	49.5%

Both community and non-community banks have seen a reduction in the number of institutions that remain active in the U.S., but, as evidenced by Table 1, the impact on the community banking industry has been more pronounced, and the trend is continuing. Figure 1 depicts the trend in the number of FDIC chartered institutions over the twenty-year sample period. Until approximately 2001, both community and non-community banks experienced consistent declines in the number of chartered institutions. This trend is consistent with significant

changes in the commercial banking environment over that time period. Regulatory changes reduced restrictions on interstate banking, making it easier for banks to conduct business across state lines. As a result, both community and non-community banks merged and adjusted operations as a response to these changes. As a result, the number of FDIC-chartered institutions declined. In addition, improvements in technology within the commercial banking industry created significant economies of scale that banks were

able to take advantage of by expanding and merging across state lines.

Figure 1. Number of U. S. FDIC Charters



However, after 2001, the trend stabilizes for non-community banks, and the number of chartered non-community banks actually increases from 2001 to 2008, reflecting the growth experienced by large financial institutions leading up to the financial crisis. On the other hand, the community banking industry continued to decline during the pre-crisis period, and, in terms of the number of institutions, did not experience the growth seen by the non-community banking industry.

The community banking industry saw a relative weakening in terms of the number of chartered institutions in the U.S., compared with non-community banks. In addition, the remaining community banks also exhibited less growth than their larger, non-community counterparts. In 1993, the average community bank had total assets of about \$94 million. This grew to approximately \$222.7 million by 2013, an increase of 136.4%. The average non-community bank, on the other hand, saw an increase of 356.9% from \$4.3 billion in 1993 to \$19.6 billion in 2013. Accordingly, growth in total liabilities and total deposits show similar growth patterns.

3.2.2 Community Bank Profitability

Larger, non-community banks have exhibited higher historical returns than their community bank counterparts. From 1993 to 2013, net income for non-community banks has increased by 394.9%, while net income for the average community banks has only increased by 102%.

In 2013, the average community bank achieved a return on equity of 7.01% and the average non-community bank ROE was 9.70%. In addition, from 1993 to 2013, non-community bank ROE declined by 34.1%, while community bank ROE declined by 42.2%. In addition, the average ROA for a community bank in the fourth quarter of 2013 is 0.93%, while that of the average non-community bank is 1.14%. In fact, changes in the ability of commercial banks to generate returns on total assets illustrate the relative weakening of the community banking industry. In 1993, community banks generate higher average returns on assets (1.09%) than non-community banks (0.97%); however, from 1993 to 2013, average ROA for community banks declined 14.9%, while that of non-community banks actually increased 17.9%.

Figure 2. Return on Equity

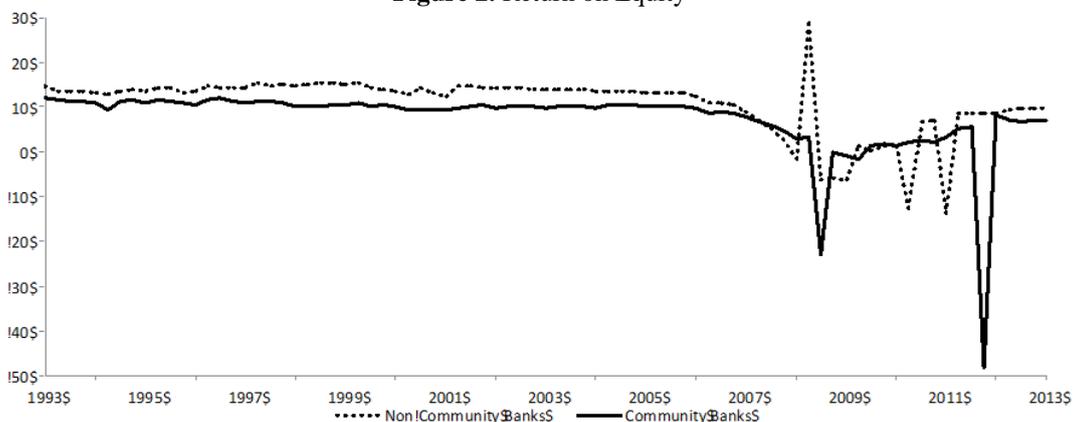
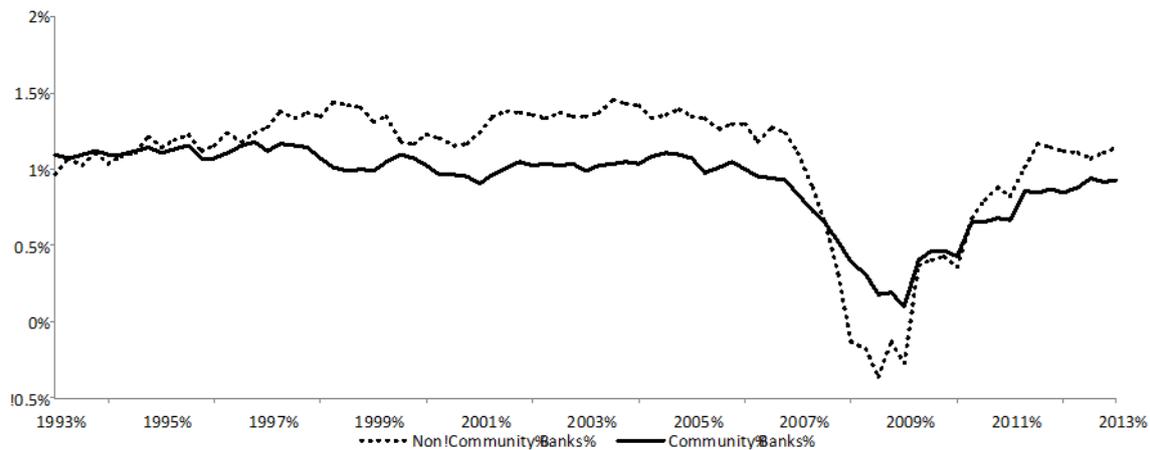


Figure 2 shows the trend in the average community and non-community bank ROE for the sample period in question. The Figure shows that non-community banks have had a long established advantage in generating returns on equity. Except for a few exceptional quarters, the ROE of the average non-community bank is higher than that of the average community bank. In addition, aside for a period of instability surrounding the financial crisis of 2008, the ROEs generated by all FDIC-chartered institutions are stable over the past twenty years.

Figure 3 shows the trend in the average return on assets for community and non-community banks from

1993 to 2013. We again document the relative weakening of the community banking industry. At the beginning of the sample period, community banks yielded returns on assets that were comparable to those of non-community banks. However, after 1995, aside from the period surrounding the 2008 financial crisis, non-community banks retain a consistent advantage in generating ROAs above those of their community bank counterparts. In addition, excluding the period surrounding the 2008 financial crisis, average ROA for FDIC-chartered institutions remains consistent over the time period analyzed in this study.

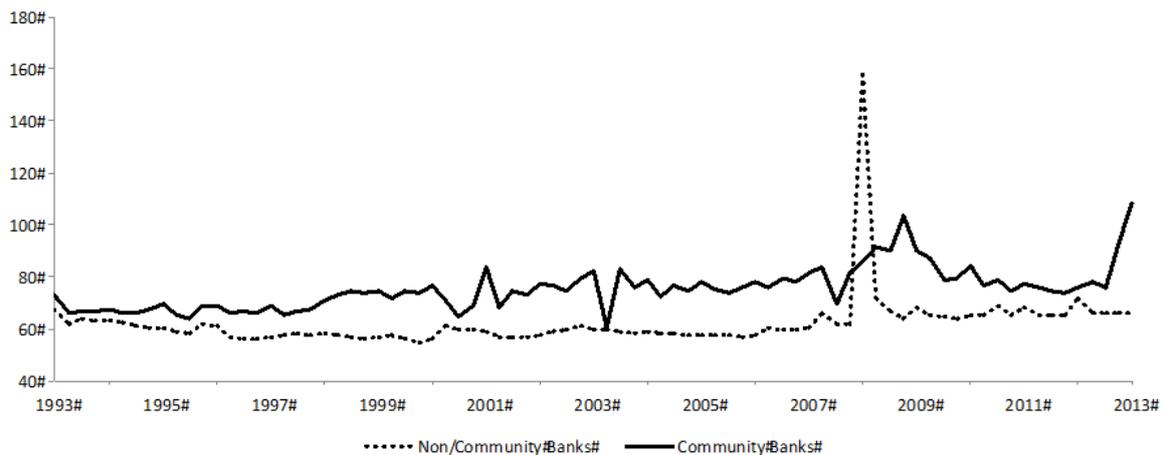
Figure 3. Return on Assets



3.2.3 Community Bank Efficiency

Banking Efficiency is also an important component of ensuring stable financial institutions, and this is another area in which non-community banks exhibit relative competitive advantages. The Efficiency Ratio is one measure commonly used by the FDIC as an indicator of banking Efficiency, and it is defined as noninterest expense divided by net operating revenue – a measure of fixed cost. A lower value of the efficiency ratio means that a smaller portion of revenues are spent on overhead, implying greater efficiency. The average efficiency ratio for community banks is 108.62% in 2013, compared with that of the average non-community bank of 66.46%. In addition, community banks have seen an increase in the average efficiency ratio of 48.5%, while non-community banks have experienced a decrease of 1.7%, indicating that non-community banks have become more efficient, while community banks have become slightly less efficient. Additionally, Figure 4 depicts the trends in the average efficiency ratios of community and non-community banks over time. Since the beginning of the sample period in 1993, non-community banks have held a consistent competitive advantage over community banks in the United States with regards to the efficiency ratio.

Figure 4. Efficiency Ratio



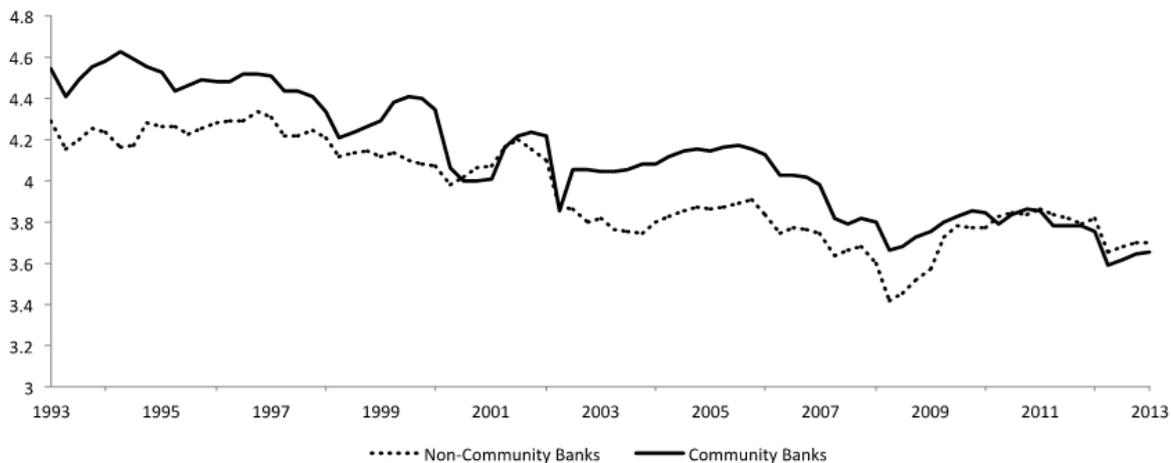
Another important measure of core-banking efficiency is the ability of depository institutions to profitably transform deposits into loans. Net interest margin essentially captures the degree to which banks are successful at maintaining sufficient margins between its inflows and outflows of cash flows from operations. Net interest margin is an area in which community banks have held a historical competitive advantage over their non-community bank counterparts; however, this advantage appears to be diminishing over time.

Core banking activities – turning interest-bearing deposits into interest paying loans – has become increasingly difficult over the past several decades. Table 1 shows that the net interest margin for both community and non-community banking institutions has declined over the past twenty years. Community banking average net interest margin has declined 19.6%, from 4.55% in 1993 to 3.66% in 2013. Likewise, average net interest margin for non-community banks has declined by 13.6%, from 4.29% in 1993 to 3.70% in 2013. There are many contributing factors to this. Firstly, interest rates have become more stable over the past twenty years, compared with previous periods, such as the 1970s and 80s. A more stable interest rate environment reduces interest rate risks for banks, and, in a competitive banking environment, banks are able to lower the spread between interest bearing assets and liabilities, while still remaining profitable. Secondly, the period of extended low short-term interest rates induced by the Federal Reserve surrounding the recessions of 2001 and 2008 have put downward pressure on the net interest margins of commercial leading institutions. Thirdly, the development and increased implementation of hedging mechanisms, such as interest rate and default swaps, have reduced interest rate risk for financial intermediates, allowing for lower interest margins. Finally, developments in the capital markets, such as the growth of non-depository lending, has provided alternatives to the traditional banking systems and increased competition

for commercial banks, thus putting downward pressure on interest margins.

Despite the decline in net interest margins seen in the industry as a whole, the community banking industry has been particularly affected and has lost one of its competitive advantages. Figure 5 depicts average net interest margin for community and non-community banks from 1993 to 2013. The figure depicts the general decline in net interest margin that has been seen industry-wide. In addition, it illustrates the fact that community banks have been particularly impacted by the decline in interest margin. Prior to 2009, community banks have a significant advantage over non-community banks with regards to net interest margins, as they are consistently higher. However, that advantage appears to have eroded in more recent periods.

Figure 5. Net Interest Margin

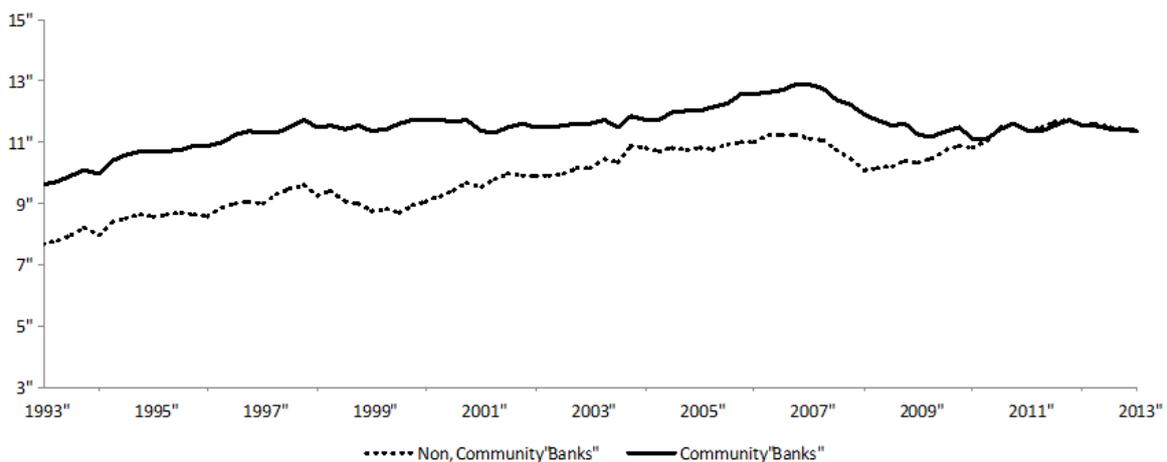


3.2.4 Community Banking Relative Capital

The amount of equity capital held by commercial banks is of particular concern, because equity capital contributes to the overall risk of the institution. Accordingly, capital ratios are closely regulated and monitored by the Federal Reserve, FDIC, and other regulators. Community banks have historically held a larger amount of capital, as measured by total equity capital-to-total assets. In 1993, community banks had a capital ratio of 9.58%, while non-community banks had a capital ratio of 7.65%. In addition, capital ratios have been increasing industry-wide over the past twenty years. However, the relative amount of capital held by community banks has been decreasing over

time. The average community bank’s capital ratio increased by 18.7%, from 9.58% to 11.37%, between 1993 and 2013. However, that of non-community banks increased by 49.5% to 11.44% over the same period. Figure 6 reflects the changes in the average capital ratio of community and non-community banks over the sample period. The figure illustrates both the increase in average capital ratios over time as well as a convergence between the capital ratios of community and non-community banking institutions. Interestingly, the capital ratio for all FDIC-chartered institutions peaked right before the financial crisis in 2007, yet many institutions still failed to absorb the financial strains posed by the crisis.

Figure 6. Capital Ratio



4. Community Banking Indexes

Community banks serve an important economic role in the United States, yet the number of institutions qualifying as community banks in the U.S. has declined by over 50 percent since 1980. The effects of a declining community bank presence in the banking market has the biggest impact on customers in rural

communities and those seeking small business and personal loans, because community banks are historically the primary service providers for these customers. The net effect of a decline in community banking services on these customers and the U.S. economy as a whole is, therefore, of significant interest to industry practitioners, policy makers, and academics. In order to evaluate the strength of the

community banking system over time, it is important to develop key measures, or indicators, of the strength of the community banking system in the U.S. These measures can be used to both evaluate the status of the industry as well as gauge the effectiveness of policies aimed at promoting community banking activity.

4.1 Community Bank Index Development

In this study, we develop several indicators of community banking strength in the U.S. The indicators focus on three major banking characteristics: Total assets; net loans and leases; and total deposits. These three banking characteristics are arguably the most important indicators of the size and growth of a traditional financial institution. Total assets measures the overall size of the bank or banking industry. Net loans and total deposits, on the other hand, focus more specifically on traditional banking activities – the transformation of deposits into loans. Thus, measures derived from loan and deposit characteristics can provide a good indication of trends in core banking operations.

We generate two types of indicators. The first are market share indicators. These measures gauge the market power of community banks, relative to that of the entire banking system as a whole. In other words, market share indicators measure the size of the community banking industry. Changes in market share over time represent a relative expansion or contraction in community banking activities in the U.S. We generate three market share indicators from the bank characteristics previously mentioned: total asset market share; total loan market share; and total deposit market share.

$$\text{Asset Market Share}_{i,t} = \frac{\text{Total Community Bank Assets}_{i,t}}{\text{Total Bank Assets}_{i,t}}, \quad (1)$$

where i represents the geographic area, and t represents quarter t .

$$\text{Loan Market Share}_{i,t} = \frac{\text{Total Community Bank Loans}_{i,t}}{\text{Total Bank Loans}_{i,t}}, \quad (2)$$

where i represents the geographic area, and t represents quarter t .

$$\text{Deposit Market Share}_{i,t} = \frac{\text{Total Community Bank Deposits}_{i,t}}{\text{Total Bank Deposits}_{i,t}}, \quad (3)$$

where i represents the geographic area, and t represents quarter t .

The second set of indicators developed in this study are composite indicators, which combine the asset, loan, and deposit activities of community banks into one index of community banking strength. We develop two composite measures of community banking strength: a relative growth measure, and a momentum measure. The relative growth indicator compares the growth rates in assets, loans, and deposits of community banks with those of larger, non-community banks. The momentum indicator examines the overall direction of growth in community banking assets, loans, and deposits.

4.2 Market Share Indexes

Community bank market share indexes measure the relative size of community banks, compared to the banking system as a whole. We utilize data from the Statistics on Depository Institutions (SDI) database of the FDIC to construct three community bank market share measures. The data are sampled quarterly from 1992:Q3 to 2013:Q3. A community bank is defined as one with total assets less than \$1 billion in constant 2013 dollars. We compute three market share measures: Asset Market Share; Loan Market Share; and Deposit Market Share.

4.2.1 Asset Market Share

Asset Market Share represents the percentage of total banking assets that are held by community banks. The market share indicator ranges from zero to 100 percent and is measured by:

4.2.2 Loan Market Share

Loan Market Share represents the percentage of total loans held in the banking system that are held by community banks. The market share indicator ranges from zero to 100 percent and is measured by:

4.2.3 Deposit Market Share

Deposit Market Share represents the percentage of total deposits in the banking system that are held by community banks. The market share indicator ranges from zero to 100 percent and is measured by:

4.3 Composite Indexes

The second set of indexes that we propose are two composite indexes that aggregate the asset, loan, and deposit characteristics of community banks into one index. We develop two such composite indexes: the relative growth index; and the momentum index.

4.3.1 Community Bank Relative Growth Index (CRGI)

The Community Bank Relative Growth Index (CRGI) measures the relative growth disparity between the community banking industry and the non-community bank industry. The Index is defined as follows:

$$CRGI_{i,t} = \left[\begin{aligned} & \left(\frac{\text{Community Bank Asset Growth}_{i,t}}{\text{Noncommunity Bank Asset Growth}_{i,t}} - 1 \right) \\ & + \left(\frac{\text{Community Bank Loan Growth}_{i,t}}{\text{Noncommunity Bank Loan Growth}_{i,t}} - 1 \right) \\ & + \left(\frac{\text{Community Bank Deposit Growth}_{i,t}}{\text{Noncommunity Bank Deposit Growth}_{i,t}} - 1 \right) \end{aligned} \right] \times 100, \tag{4}$$

where *i* represents the geographic area, and *t* represents quarter *t*. Growth is defined as the percentage change from period *t*-1 to *t*.

In the calculation of CRGI, asset growth, loan growth, and deposit growth are all weighted equally. In other words, deviations in one area (say deposits) can be offset by changes in the opposite direction in another area (say loans). The value of CRGI is unbounded; however, positive values of CRGI indicate overall growth in the community banking industry, relative to that of larger banks. Conversely,

negative values of CRGI represent a weakening of the community bank industry, relative to non-community banks.

4.3.2 Community Bank Momentum Index (CMOM)

The Community Bank Momentum Index (CMOM) measures the degree to which the community banking industry has expanded or contracted over the past quarter. The index is defined as follows:

$$CMOM_{i,t} = \left(\frac{\text{Community Bank Assets}_{i,t}}{\text{Community Bank Assets}_{i,t-1}} + \frac{\text{Community Bank Loans}_{i,t}}{\text{Community Bank Loans}_{i,t-1}} + \frac{\text{Community Bank Deposits}_{i,t}}{\text{Community Bank Deposits}_{i,t-1}} \right) - 3, \tag{5}$$

where *i* represents the geographic area, and *t* represents quarter *t*.

In the calculation of CMOM, asset growth, loan growth, and deposit growth are all weighted equally, so large increases in one area can offset large declines in another. By construction, the CMOM Index has a lower bound of negative three and is unbounded above. However, realistic values of CMOM are around zero. A value of zero indicates that the community banking industry has remained roughly the same size from one quarter to the next. A positive value of CMOM means that the community banking industry is expanding, while a negative value means that it is shrinking.

loan, and deposit market share of community banks for the U.S.

Total community banking asset market share in the U.S. is 9.4%. The asset market share index measure of community banking strength reflects a decline in the role that community banks play in the national economy. Table 1 shows that the total number of community banking institutions has declined dramatically since 1993. Table 2 illustrates that this trend is reflected in the market share measures of community banking strength as well. Community bank asset share has declined since 1993 at the national level, with asset market share declining by 163.9%.

Not surprisingly, the levels of community bank loan market share are similar to asset market share. The overall decline in the community bank loan share has been 118.5%, from 24.2% in 1993 to 11.1% in 2013.

The levels of community bank market share of deposits are similar to those of assets and loans. Deposit market share at the national level of 10.4% in 2013 represents a decline from that 28.5% in 1993.

4.4 Community Banking Index Values

4.4.1 Market Share Measures

Several key statistics for the market share community bank indexes are presented in Table 3. The market share indexes provide indexes based on the asset,

Table 2. Market Share Community Banking Indexes

Measure	1993:Q4	2013:Q4	% Change
Asset Share	24.80%	9.40%	-163.90%
Loan Share	24.20%	11.10%	-118.50%
Deposit Share	28.50%	10.40%	-175.20%

4.4.2 Composite Community Banking Indexes

Several key statistics for the composite community bank indexes are presented in Table 4. The composite community banking indexes consist of the

Community Bank Relative Growth Index (CGRI) and the Community Bank Momentum Index (CMOM). Table 3 presents statistics for the composite indexes for the U.S. community banking industry.

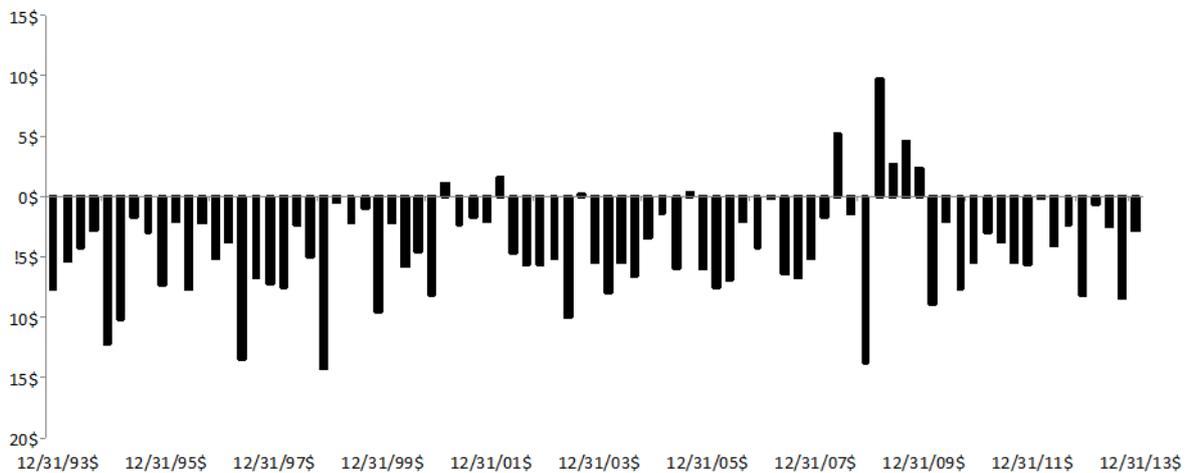
Table 3. Composite Community Banking Indexes

Measure	Avg.	Std. Dev.	2013:Q4
Community Bank Relative Growth Index (CRGI)	-4.21	4.11	-2.81
Community Bank Momentum Index (CMOM)	0.006	0.025	0.012

In terms of relative growth, Table 3 shows that the average value of the CRGI is negative, which reflects and confirms the fact that the community banking industry in the U.S. has been shrinking, relative to non-community banks. Figure 7 depicts the

value of the CRGI from 1993 to 2013. It is clear that the vast majority of the values are negative, indicating a shrinking of the community banking industry, relative to non-community banks, for a majority of the quarters reported by the data.

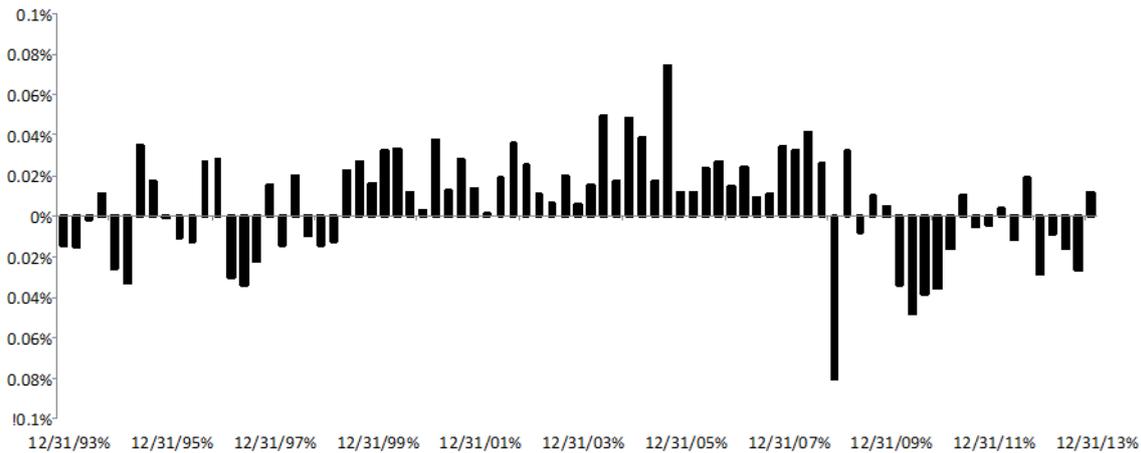
Figure 7. Community Bank Relative Growth Index (CRGI)



In terms of momentum, the outlook on community banking is less grim, because no comparison is made to non-community banking growth. As shown in Figure 8, a majority of the

CMOM are positive for the time period under study, indicating the industry had positive nominal growth over the past twenty years.

Figure 8. Community Bank Momentum (CMOM) Index



5. FDIC Leadership and Community Banking

The Federal Deposit Insurance Corporation is the main regulator and insurance provider for community banks in the United States. As such, the leadership of the FDIC can play a significant role in terms of transforming the community banking industry. The Chairperson of the FDIC is recognized as a transformative figure in this regard and must be appointed by the President and approved by Congress. In this section, we analyze the performance of the community banking industry under the past three FDIC Chairpersons, Donald Powell, Sheila Bair, and Martin Gruenberg, who have presided over the FDIC since 2001. Without a more thorough analysis, it is inappropriate to attribute the performance of the community banking industry with the actions of the FDIC or any individual therein; however, the viewpoints of key persons at the FDIC, namely the Chairperson, can have significant implications for the community banking industry and its outlook going forward.

While all FDIC Chairs are concerned over the increasingly difficult competitive environment for community banks, the trends leading to consolidation in the industry have persisted nonetheless. Actions taken by the previous FDIC Chairpersons have led to the increased study and awareness of the trends affecting community banks in the United States; however, the ability and willingness to provide more fundamental support for the community banking industry is questionable, and it is clear that their policies have been unsuccessful at maintaining community bank market share. In fact, statements by recent FDIC chairs indicate that, while being concerned over recent pressures placed on the industry, they are satisfied with the resilience of the community banking industry and the competitive banking atmosphere, despite the continued loss of community banking institutions and market share.

Donald Powell became FDIC Chairman on August 29, 2001 after being nominated by George W. Bush. Powell has a background in community

banking, having served as the President and CEO of The First Bank of Amarillo in Amarillo, Texas. He often acknowledged trends in the industry and the challenges faced by community banks, particularly consolidation. He noted before the Independent Community Bankers Association in 2004:

“Consolidation has been relentless. The number of community banks declined by almost half between 1985 and 2001. Market share dropped significantly. The hardest hit were banks with assets of less than \$100 million. But if you can pull back from this for a moment, and look at the longer-term trends, there is a positive story in the numbers.

Community banks continue to maintain presence in all types of markets - urban, suburban, and rural. They remain profitable in both regions of population growth and population decline. Further, community bank performance is satisfactory when compared to that of the largest banks. From 1992, ROA, for example, has been at least 100 basis points - and this remains true even in those markets experiencing population declines.

Finally, the community bank business model is still sought-after as you follow your customers into the suburbs and inner cities. We've seen more than 1,100 new banks formed since 1992, and their continued strength in small business and neighborhood lending has helped serve new customers, create jobs, bank the unbanked, and add to the economic vitality of their communities.”

Powell left the FDIC in November of 2005 for a position aiding the Gulf Coast recovery in the aftermath of hurricanes Katrina and Rita.

The chair position was vacant for seven months following Powell's departure, but was filled by Sheila Bair in June of 2006. While FDIC Chair, Bair also acknowledged the importance of community banks and the challenges they face in the industry. To this end, under Bair's tenure as Chairwoman, the FDIC voted to approve the creation of the FDIC Advisory Committee on Community Banking in order to specifically address community banking issues. In establishing this Committee Bair said, “community banks are the lifeblood of our nation's financial

system, supplying much-needed credit to countless individuals, small businesses, nonprofit organizations and other entities in large and small towns around the country". Furthermore, in acknowledging the difficulties facing community banks, Bair stated in remarks to the Independent Community Bankers Association in 2010 that:

"[It] is community banks that finance the startups where dreams are launched and new jobs are created. But, for too long, your business model has been at a critical disadvantage to larger financial companies with implicit government backing and insufficient regulatory oversight."

Additionally, Bair recognized the regulatory burdens that affect community banking institutions. In a recent 2014 Fortune Magazine Article, Bair commented on the costs faced by community banks due to the many new regulations established following the financial crisis:

"The benefits [of the regulations] are less clear for regional and community banks. Many of the new regulations have hefty, fixed startup costs, which disproportionately impact smaller institutions."

Bair chaired the FDIC until July of 2011, when Martin Gruenberg acted as Chairman until confirmed by Congress in 2012. Gruenberg has long been active at the FDIC, as he has previously served as Acting Chairman, Vice Chairman, and a member of the Board of Directors throughout the past decade. Gruenberg, too, recognizes the importance of community banks. At the Conference on the Future of Community Banking in 2012, Gruenberg remarked:

"Community banks play a crucial role in the financial system of the United States. Community banks with assets of less than \$1 billion account for a little more than 10 percent of the banking assets in our country, but provide nearly 40 percent of all the small loans that insured financial institutions make to businesses and farms. Given the labor intensive, highly customized nature of many small business loans, it is not clear that large institutions would easily fill this critical credit need if community banks were not there. Community banks also play a crucial role in extending credit and providing financial services in rural communities, in small towns, and in inner-city neighborhoods. In many of those localities, if not for the community bank there would be no easy access to an insured financial institution. In my view there is a clear public interest in maintaining a strong community bank sector in the U.S. financial system."

Gruenberg went on to describe his views on the role of the FDIC in the assisting the community banking industry:

"The FDIC is the lead federal regulator for the majority of community banks in the United States and the insurer of all. In those capacities, it seems to me, the FDIC has a responsibility to use our resources to gain a better understanding of the challenges facing community banks and to share that understanding with the banks as well as the general public."

The FDIC is a regulator and insurance provider for the community banking industry, and the organizations Chairperson can have considerable impact on its focus. The past several FDIC chairs have all acknowledged the importance of the community banking industry and the challenges facing it. However, it is questionable whether the FDIC is able or willing to enact policies that actively encourage the community banking industry. The FDIC has conducted a significant amount of support in terms of research surrounding the community banking industry. While the FDIC plays a role in identifying the impact of industry trends and regulations on community banks, its intention to affect these trends directly appears to be minimal. The FDIC's main goal in promoting community banks appears to be through industry analysis that can be used by industry practitioners in order to adapt to industry trends that the leadership at the FDIC appear to hold as inevitable.

Despite the FDIC's concern over industry trends that have been negatively impacting certain aspect of the community banking business, these trends have continued under the supervision of the past three FDIC Chairpersons. Table 4 analyzes the changes in key banking statistics over the tenures of the past three FDIC chairs.

5.1 Community Banking Statistics and FDIC Leadership

5.1.1 Industry Size and FDIC Leadership

As many statements from the current and previous FDIC chairs illustrate, the number and prominence of FDIC-chartered community banks has been declining over the past several decades, and this trend has continued under the past three chairpersons. The total number of community banking institutions fell most dramatically under the tenure of Sheila Bair. During this time, the number of community banking institutions fell by 14.7%. This is not surprising since the time of her tenure coincides with the financial crisis of 2008. Donald Powell's tenure also saw a dramatic reduction in the number of community banking institutions, as community banks fell by 9.3%, while non-community banks actually increased by 7.4%. This fact illustrates the consolidation and realignment in favor of non-community banks that occurred following the regulatory changes of the 1990s and early 2000s. Both the number of non-community and community banking institutions fell under the succeeding FDIC Chairs; however, as previously illustrated, community banks have been relatively more affected.

Average community bank size grew most rapidly under the tenure of FDIC Chairman Donald Powell, as total assets increased by 24.2% and total equity capital increased by 28.0%. This trend is consistent with the rapid growth that took place in the

banking industry leading up to the financial crisis in 2008. Additionally, Powell's tenure is currently the longest of the three, so more industry growth took place under his supervision. On the other hand, net income fell during the tenures of Donald Powell and Sheila Bair, but increased by 24.2% under Martin Gruenberg. Martin Gruenberg's tenure has also seen

dramatic increases in cash dividends and net operating income, with increases of 106.5% and 134.4%, respectively. This fact echoes the sentiments of the FDIC regulators that community banks have remained resilient and competitive in spite of the 2008 financial crisis and continued declines in the number of institutions and their market share.

Table 4. U.S. FDIC Bank Statistics

	Powell		Bair		Gruenberg	
	Community	Non-community	Community	Non-community	Community	Non-community
	% Change	% Change	% Change	% Change	% Change	% Change
No. of Institutions	-9.3%	7.4%	-14.7%	-7.6%	-9.0%	-2.5%
Total Assets	24.2%	33.0%	18.7%	26.5%	7.2%	9.8%
Number of Employees	5.2%	5.5%	0.2%	6.1%	5.1%	0.9%
Total Cash Balances	2.7%	-3.7%	176.7%	242.2%	0.5%	37.2%
Net Loans and Leases	29.7%	36.5%	8.9%	819.8%	5.2%	8.7%
Loan Loss Allowance	47.7%	-11.7%	90.8%	209.6%	6.4%	-30.9%
Total Liabilities	24.1%	30.9%	19.3%	25.0%	7.5%	10.1%
Total Deposits	23.2%	33.8%	22.8%	43.0%	8.2%	15.9%
Total Equity Capital	28.0%	55.2%	18.1%	40.2%	6.6%	8.0%
Total Interest Income	-1.8%	3.8%	-41.9%	-42.4%	24.2%	26.8%
Net Interest Income	25.0%	20.5%	-25.0%	-6.6%	37.1%	35.2%
Total Noninterest Income	21.1%	24.2%	-38.1%	-32.0%	68.2%	46.2%
Net Operating Income	49.3%	51.6%	-65.5%	-41.5%	134.4%	70.4%
Net Income	-1.8%	3.8%	-41.9%	-42.4%	24.2%	26.8%
Cash Dividends	27.5%	13.3%	-58.0%	-33.1%	106.5%	59.9%
ROA	19.1%	8.6%	-37.7%	-38.7%	36.8%	30.0%
ROE	8.0%	4.8%	-73.6%	-48.6%	222.1%	37.4%
Efficiency Ratio	-7.2%	-1.5%	3.7%	20.4%	45.8%	1.8%
Assets Per Employee	15.9%	58.6%	23.5%	-36.8%	0.0%	-35.8%
Net Interest Margin	3.3%	-5.1%	-7.7%	-1.8%	-5.3%	-3.5%
Net Operating Income to Assets	23.5%	12.7%	-42.1%	-35.9%	44.0%	39.0%
Equity Capital to Assets	5.8%	13.0%	-9.1%	4.1%	-2.0%	-1.3%

5.1.2. Community Bank Profitability and FDIC Leadership

Despite increased consolidation and eroding net interest margins, the remaining community banks remain relatively competitive in terms of returns on assets and equity. Both ROE and ROA increased most dramatically over the tenure of Gruenberg. Average community bank ROE grew by 222.1%, and ROA grew by 36.8%, respectively, under his tenure as FDIC Chairman. This compares with increases in average non-community bank ROE and ROA of 37.4% and 30.0%, respectively. The fact that profitability measures have increased more rapidly for community banks in more recent years coincides with efficiencies gained from technology and consolidation. In addition, improved community bank performance may speak to the resilience of the community banking industry.

5.1.3. Community Bank Efficiency and FDIC Leadership

Changes in community banking efficiency across recent FDIC chairs reflects the increasingly difficult operating environment for both community banks and non-community banks. Average net interest margin shows the most improvement under Donald Powell, where net interest margins for community and non-community banks change by 3.3% and -5.3%, respectively. This corresponds with the rising interest rate environment that was in place during the period leading up to the financial crisis. For the remaining two tenures, however, net margins shrink for both community and non-community banks. Under Sheila Bair's tenure, average community bank net interest margin experienced the largest decline of 7.7%, while those of non-community banks declined by 1.8%. Average net margins for community banks declined by 5.3%, compared with a decline of 3.5% for non-community banks, under Martin Gruenberg.

Efficiency Ratios have improved over time for both community and non-community banks, and this is reflected during the tenures of Sheila Bair and Martin Gruenberg. The average efficiency ratio for a community bank improved by 45.8% under Gruenberg and 3.7% under Bair. Average community bank efficiency ratios fell during the tenure of Donald

Powell by 7.2%, while those of non-community banks fell by 1.5%.

5.1.4. Community Banking Relative Capital and FDIC Leadership

Table 5 also shows that the average capital ratios for community banks increased the most under the tenure of Donald Powell, as capital increased by 5.8%. On the other hand, under the tenures of Sheila Bair and Martin Gruenberg, the average capital ratio declined by 9.1% and 2.0%, respectively. Average capital ratios for non-community banks, on the other hand, actually increased under the tenures of both Powell and Bair, at 13.0% and 4.1%, respectively, but it declined by 1.3% under Gruenberg.

5.2. Community Bank Indexes and FDIC Leadership

The somewhat mixed performance of community banks over the tenures of the past three FDIC Chairs

illustrate the need for more a more comprehensive measure of community banking strength. Table 5 illustrates how our community bank strength indicators have changed under the tenures of the past three FDIC Chairs.

The Asset Market Share Index of community banking strength declined over each of the past three FDIC chair tenures, but it declined most significantly under the tenure of Donald Powell with asset share diminishing by 18.5%. Likewise, total community banking asset share under Sheila Bair and Martin Gruenberg fell by 12.0% and 8.1%, respectively. The decline in the asset market share index over the past three FDIC Chair tenures illustrates the decline in community bank asset market shares that has occurred over time due to changes in the banking industry. Therefore, the fact that the decline was most dramatic under Donald Powell's term is not surprising, considering the fact that Powell has the longest tenure of the three, followed by Bair and Gruenberg.

Table 5. Community Banking Indexes

Asset Share			
Chair	Beg.	End	% Chg.
<i>Powell</i>	15.4%	12.5%	-18.5%
<i>Bair</i>	11.8%	10.4%	-12.0%
<i>Gruenberg</i>	10.2%	9.4%	-8.1%
Community Bank Relative Growth Index (CRGI)			
Chair	Avg.	Std. Dev.	
<i>Powell</i>	-4.285	3.076	
<i>Bair</i>	-2.377	5.427	
<i>Gruenberg</i>	-3.990	2.882	
Community Bank Momentum Index (CMOM)			
Chair	Avg.	Std. Dev.	
<i>Powell</i>	0.024	0.019	
<i>Bair</i>	0.001	0.033	
<i>Gruenberg</i>	-0.007	0.015	

The two composite indexes give a better picture of community banking strength. Table 6 implies that the community banking industry performed poorly, when compared the non-community banking industry, under the terms of all three of the most recent FDIC chairs. The average value of Community Bank Relative Growth Index (CRGI) is highest (but still negative) under the term of Sheila Bair with an average value of -2.377. However, the variance is highest, which is likely due to the increased volatility caused by the onset of the financial crisis. On the other hand, the CGRI performed the worst under Donald Powell, with an average value of -4.285. While we have shown that the banking industry as a whole grew most dramatically during the tenure of Donald Powell, community banks lost the most ground during this time in relation to their non-community bank counterparts. In addition, the improved relative performance of the community

banking industry could in part be due to the increased focus of the FDIC on community-bank related issues, such as the establishment of the FDIC's Advisory Committee on Community Banking. It is also likely that the relative performance of community banks also improved as the industry adjusted to the changing regulatory environment.

Table 5 also shows the change in Community Banking Momentum Index (CMOM) for each of the recent FDIC Chairs. The average value of the CMOM Index is highest under the tenure of Donald Powell with an average value of 0.024, followed by that under Sheila Bair of 0.001. The CMOM is negative under the tenure of Martin Gruenberg at -0.007, indicating the community banking industry contracted over his tenure.

Table 5 indicates that the high average value of CMOM under the tenure of Donald Powell was caused by the overall growth of the banking industry

during his appointment. The CMOM Index does not take into account community bank growth relative to that of non-community banks. When assessing the relative growth of the community banking industry by using the CRGI index, the composite indexes paint a clear picture of relative community banking strength. According to our composite community banking indexes, the community banking industry showed the most robust growth during the appointment of Sheila Bair as FDIC Chairperson. Community banks were relatively strong, despite the onset of the financial crisis.

It is important to analyze the strength of community banking under different regulatory leaders. Although we cannot directly attribute changes in community banking performance to the direct actions of the FDIC or its agents, this analysis provides important context to the recent performance of the community banking industry.

6. Conclusion

In this study, we show the dramatic reduction in the number of FDIC-chartered community banks in the United States. We utilize FDIC data to compare the relative size, efficiency, and performance of community banks, relative to their non-community counterparts. We show that, despite their declining numbers, community banks have historically held some operational advantages over larger banks. Larger banks, however, have higher returns on assets and equity, and efficiency, which has been a key driver of bank consolidation.

Community banks serve an important economic function. Therefore, the decline in the number of community banking operations in the United States is of particular concern. Community banks serve an important role in servicing the needs of rural customers and small businesses. In this study, we provide some preliminary analysis regarding the strength of the U.S. community banking industry. We develop several unique community bank indexes, the Community Bank Relative Growth Index (CRGI) and the Community Bank Momentum Index (CMOM), that measure the relative and nominal growth of the community banking industry. These indexes provide quick snapshots of the strength of the community banking industry that can be used by regulators, researchers, and practitioners. In addition, we provide an analysis of how the community banking landscape is addressed by and has changed under the tenures of recent FDIC Chairs that can provide valuable context when analyzing the industry.

The development of the community banking indexes represents a unique and valuable contribution to the analysis of the community banking industry. Going forward, aside from being updated on a

quarterly basis, these indexes will be updated to capture the most relevant trends in the community banking industry with regards to its growth and resilience. In addition, we develop a data set that contains detailed balance sheet information from all banking institutions. In future research, similar analyses can be expanded to analyze community banking activities in more detail, including analysis of different types of loans and other core banking activities, a comparison and analysis of different types of interest and non-interest income, or an analysis of off-balance sheet banking activities.

References

1. Avery, R. B., & Samolyk, K. A. (2004). Bank consolidation and small business lending: the role of community banks. *Journal of financial services research*, 25(2-3), 291-325.
2. Critchfield, T., Samolyk, K., Davison, L., Hanc, G., Gratton, H., & Davis, T. (2004). *The Future of Banking in America-Community Banks: Their Recent Past, Current Performance, and Future Prospects*. FDIC Banking Review Series, 16(3).
3. DeYoung, R., & Duffy, D. J. (2002). The challenges facing community banks: In their own words. *Economic Perspectives*, 4th Quarter.
4. DeYoung, R., Hunter, W. C., & Udell, G. F. (2004). The past, present, and probable future for community banks. *Journal of Financial Services Research*, 25(2-3), 85-133.
5. DeYoung, R., Lang, W. W., & Nolle, D. L. (2007). How the Internet affects output and performance at community banks. *Journal of Banking & Finance*, 31(4), 1033-1060.
6. Goddard, J., Liu, H., & Wilson, J. O. (2014). Entry, Exit and Growth of US Commercial Banks. Available at SSRN 2398888.
7. Hakenes, H., Hasan, I., Molyneux, P., & Xie, R. (2014). Small Banks and Local Economic Development*. *Review of Finance*, rfu003.
8. Jagtiani, J., Kotliar, I., & Maingi, R. Q. (2014). The evolution of us Community banks and its impact on small business lending. FRB of Philadelphia Working Paper No. 14-16
9. Mitts, J. (2014). Did the JOBS Act benefit community banks? A regression discontinuity study. *A Regression Discontinuity Study* (February 19, 2014).
10. Peirce, H., Robinson, I. C. & Stratman, T. (2014). How Are Small Banks Faring under Dodd-Frank?. GMU Working Paper in Economics No. 14-49.
11. Whalen, G. (2007). *Community Bank Strategic Lending Choices and Performance*. Available at SSRN 981181.
12. Whalen, G. (2013). Investigating the Relationship between Supervisory Change and Community Bank Failure in a Competing Risk Framework. Available at SSRN 2225418.
13. Wright, R. E. (2011). Governance and the Success of US Community Banks, 1790-2010: Mutual Savings Banks, Local Commercial Banks, and the Merchants (National) Bank of New Bedford, Massachusetts. Local Commercial Banks, and the Merchants (National) Bank of New Bedford, Massachusetts (May 7, 2011).