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The competitive environment of community banking and the potential impact on microenterprise entrepreneurs' access to bank financing

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THE COMPETITIVE ENVIRONMENT OF COMMUNITY BANKING AND THE

POTENTIAL IMPACT ON MICROENTERPRISE ENTREPRENEURS'

ACCESS TO BANK FINANCING

A Dissertation

by

ROBERT D. MORRISON

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The University of Texas Rio Grande Valley
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THE COMPETITIVE ENVIRONMENT OF COMMUNITY BANKING AND THE

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December 2015

ABSTRACT

Morrison, Robert D., <u>The Competitive Environment of Community Banking and the Potential Impact on Microenterprise Entrepreneurs' access to Bank Financing</u>. Doctor of Philosophy (Ph.D.) December, 2015, 140 pp., 11 tables, 2 figures, references, 221 titles, appendices 3.

Over the past 35 years, Great Depression era regulatory restrictions on the geographic area of operation and the scope of financial services banks can offer have change significantly. These changes fueled a surge of merger activity and resulted in a 70% decrease in the number of bank charters by 2015. Currently, community banks hold only 14% of bank assets in the US; nonetheless, they play an important role in the US economy because they continue to provide the majority of funding to small businesses. This study finds that over 83% of bank failures occurred in metropolitan areas despite the distribution of community banks being almost equal at 49.5% rural and 50.5% metropolitan. An analysis of FDIC data from 2000 through 2014 indicates that rural and community banks do differ significantly on variables related to bank profitability and loan portfolio risk. Metropolitan banks have lower ratios on pre-tax return on assets, and return on equity. On average, metropolitan banks are approximately 30% less profitable than their rural counterparts. Since the 2007 financial crisis, on average, metropolitan banks have higher ratios on variables related to loan portfolio risk and since 2010 they have lower capital to asset ratios. The higher bank failure rates, riskier loan portfolios, and lower capital to asset ratios associated with metropolitan community banks provides support for the competition-fragility view that increased competition in banking leads to more bank failures. The nationwide survey in this

study indicates that metropolitan community bankers perceive the competitive environment to be more intense and that their marketing capabilities are inferior to the large nationwide and regional banks that they compete against. Community bankers perceive that the merger and acquisition activity will continue and that it is driven by the need to achieve economies of scale in technology and regulatory compliance. Based on previous research that larger banks extend less credit to small businesses, this will further restrict the availability of bank credit to new businesses and existing microenterprises. Given that microenterprises employ the majority of people and contribute to new job creation, there are serious economic implications.

DEDICATION

I could not have competed this degree without the support and understanding of my

family, my wife Claudia, my daughters Andrea, Nicole, and Emily, and my father Bobby and my

mother Shirley. Thank you for your love and patience.

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CHAPTER I

INTRODUCTION

The US Banking industry has undergone dramatic changes over the past 35 years as

Great Depression era regulatory restrictions of both the geographic area of operation and the

scope of financial services banks can offer have change significantly. These regulatory changes

fueled a surge of merger activity in the financial services industry that peaked at about 600

mergers per year in the late 1990s and declined to around 250 per year in the early 2000s. In a

quest to cover the nation or particular regions of it, large publicly traded banks acquired banks

across the nation with the vast majority, 87% of branches, being in metropolitan areas. Likewise,

larger privately held banks or bank holding companies acquired or merged with smaller banks.

This resulted in a 69% decrease in the number of bank charters from the peak of 17,901 in 1985

to the 5,501 operating in the first quarter of 2015. Although community banks remain the most

common type of bank in the US, they hold only 14% of US bank assets. Nonetheless, these small

community banks play an important role in the US economy because they continue to provide

the majority of funding to small businesses (DeYoung, 1998; Goldberg & White, 1998) and

small businesses continue to employ the vast majority of people in the US (CHI Research, 2003;

Headd, 2015; Kobe, 2007). New and young businesses are the primary creators of jobs in the US

(Wiens & Jackson, 2014) and one point of particular interest is the correlation between reduction

of community banks and the decline of new business startups in the US. Recently, the small

business closure rate exceeded the small business startup rate for the first time in 35 years (Clifton, 2015).

Politicians and pundits have expressed concern that the lack of new business startups and lack of growth in small business job creation relates to the decline in community banking and the increased regulatory burdens on small banks (e.g., Adams & Gramlich, 2014; Blair, 2014; Rutledge, 2014). Presidential candidate Carly Fiorina raised this issue in the October 28th Republican presidential debate:

> *Crony capitalism is alive and well, and has been so in Washington, D.C. for decades....Because when government gets big and powerful, the big feel like they need to get even bigger to deal with all that power, and meanwhile, the small and the powerless -- in this case, 1,590 community banks -- go out of business....It's why you see the banks consolidating....And meanwhile, small businesses are getting crushed. Community-based businesses and farms are getting crushed. Community banks are going out of business. Big government favors the big, the powerful, the wealthy and the well-connected, and crushes the small and the powerless.*

In the November 10th debate, former governor Jeb Bush brought up the cost of the regulatory compliance burden on community banks and Senator Ted Cruz stated, "…community banks are going out of business. And, by the way, the consequence of that is small businesses can't get loans." Senator Cruz's comments go directly to the focus of this study. The issue of deregulation creating banks that are *too big to fail* also came up in the Democratic presidential debates; however, the candidates did not elaborate about the impact on community banks or small business funding.

Exacerbating the problem, more of the US population is migrating to metropolitan areas, in fact, the 2010 census reveals that 80% of the US population now resides in urban areas, and that is likely where community banks encounter the greatest competition from the massive nationwide and regional banks; sometimes referred to as *mega-banks*. Therefore, we need a better understanding of how deregulation has changed the competitive environment of community banking. Although this study focuses on community banks, the true concern is the secondary impact on small business, especially microenterprises and nascent entrepreneurs. If community banks continue to fail and merge, serious questions arise about the adequacy of funding available for small businesses, especially in metropolitan areas. The evidence indicates that small new banks lend more heavily to the smallest of businesses and that lending declines as banks mature and total assets begin to exceed $200 million (DeYoung, 1998; Golberg & White, 1998),

The dramatic decline in the number of community banks and the essential halt in new bank charters has drawn the interest of government and academic researchers (e.g., Adams & Gramlich, 2014; FDIC CBS, 2012; Hassan & Kippler, 2015); however, these and other studies have examined industry-wide bank performance after deregulatory restructuring. As Claessens and Laeven (2004) point out, "As small banks may operate more in local markets that are less competitive, studying all banks may lead to a distorted measure of the overall competitiveness of a banking system, especially in countries with a large number of banks, such as the United States" (p. 547). Although previous studies have compared bank performance, growth, and profitability in different European Union markets (e.g., Goddard, Molyneux, & Wilson, 2004a, 2204b) and looked a community banking in the US in general, no studies that I am aware of have focused on comparing community bank performance in rural and metropolitan markets in the

US. This study provides a valuable contribution to the literature by specifically comparing community banks in metropolitan and rural counties. This allows for the examination of the impact of locally owned metropolitan banks competing with large nationwide and regional banks in metropolitan areas. The study compares bank failure rates and bank operating performance of rural and metropolitan community banks from 2000 through 2014. This study uses performance variables from the Federal Deposit Insurance Corporation (FDIC) Performance and Condition Ratios data. A nationwide survey gauges community bank management team members' perceptions on competitive intensity, merger and acquisitions activity in community banking, small business lending, and new bank startups. It then compares the perceptions of community bankers in metropolitan counties to the perceptions of community bankers in rural counties. Whereas analysis of secondary data provides insight into what has already occurred, survey data provides some insight into the perceptions practitioners have about the current environment and events in the near future.

CHAPTER II

LITERATURE REVIEW

Community Banks and Small Business Funding in the United States

Why Study Community Banks?

Community banks provide an interesting research context for at least two reasons. First, small banks are small businesses. In fact, about one-third of community banks operate as Type-S corporations. Although the founding of a new bank is similar to any other significant entrepreneurial venture, banks are different in that the regulatory reporting requirements to the Federal Reserve System, the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC), and state regulators provide high-quality secondary data from the point of formation that is not available for other types of privately held firms (Bamford, Dean, & McDougall, 2000; Bamford, Dean, & Douglas, 2004).

Second, community banks are an important source of funding for both new and existing small businesses. As Rajan (2012) points out, "for entrepreneurs who are not independently wealthy, finance is critical to purchasing the assets she needs to encourage enterprise building" (p. 1175) and small firms rely heavily on banks for funding with business startups receiving about three-quarters of their funds from banks (e.g., Cole & Wolken, 1995; Elliehausen & Wolken, 1990; Robb et al., 2010). However, evidence exists that bank consolidation due to bank deregulation in the 1980s and 1990s has reduced loan availability to the smallest businesses

(Berger, Demsetz, & Strahan, 1999; Berger & Frame, 2007; Berger, Rosen, & Udell, 2007; Berger, Saunders, Scalise, & Udell, 1998; Peek & Rosengren, 1998).

Although the majority of the banking industry research lies in the finance literature, a review of the literature in *Administrative Science Quarterly*, the *Academy of Management Jour*nal, the *Strategic Management Journal*, the *Journal of Business Venturing*, and the journal of *Entrepreneurship Theory and Practice* indicates that strategic management and entrepreneurship researchers have also researched the banking industry. Strategic management researchers have investigated subjects such as mergers (Ramaswamy, 1997), and banks desperate for expansion during deregulation overpaying for acquisitions (Kim, Haleblian, & Finkelstein, 2011), money center banks recruitment of board members in the post-deregulation environment (Davis & Mizruchi, 1999), market entry (Li, 2008), switching costs (Brush, Dangol, & O'Brien, 2012), learning and post-acquisition integration strategies (Zollo & Singh, 2004), and executive compensation and managerial discretion (Magnan & St-Onge, 1997) in the banking industry. Entrepreneurship researchers have examined bank finance versus venture capital (de Bettignies & Brander, 2007), new bank startups (Bamford, Dean, & Douglas, 2004; Bamford, Dean, & McDougall, 2000), bank lending to firms in decline (Gopinath, 1995), bank loan officers perceptions of men, women, and successful entrepreneurs (Buttner & Rosen, 1988), gender, entrepreneurship, and bank lending (Carter, Shaw, Lam, & Wilson, 2007), bank firm relationship perceptions (Saparito, Elam, & Brush, 2013), trust within entrepreneur bank relationships (Howorth & Moro, 2006), financial bootstrapping to bank funding (Jonsson, & Lindbergh, 2013), bank lending to new and growing enterprises (Churchill & Lewis, 1986), and the small business-bank interface (Riding, Haines, & Thomas, (1994).

The number of community banks has declined dramatically since deregulation of the financial services industry began in the 1980s; the FDIC Community Banking Study (FDIC CBS, 2012) and Hassan and Hippler (2015) provide comprehensive insight. Concurrent with the decline in the number of community banks, small business startups have also declined and recently the small business closure rate exceeded the small business startup rate (Clifton, 2015). This includes commercial banks where 400 failures from 2009-2013 far exceeded the 7 new bank charter formations along with 23 previously chartered banks that began operating according to the FDIC Institution Changes list and there has been only one new bank charter since 2010 (Adams & Gramlich, 2014). No banks received charters or started operations in 2011, 2012, or 2014. These are the only years this has occurred since the FDIC began in 1934. New banks, known in the industry as *de novo* banks, also play an important role in small business funding (Goldberg & White, 1998).

In the 1990s, the literature indicates that there was considerable concern that the widespread consolidation in the banking industry would reduce lending to small businesses. Investigating this phenomenon, Goldberg and White (1998) examined the lending of de novo banks and found that they contain a substantially higher percentage of small business loans. They suggested that de novo banks could be part of the solution to the constriction of small business lending created by financial industry consolidation. DeYoung (1998) stated, "Goldberg and White (1998) have taken an important first step, and their results have implications for policymakers, for researchers, and for entrepreneurs concerned about adequate supplies of credit for small businesses" (p.868). Extending the findings of Goldberg and White (1998), DeYoung (1998) examined how long de novo banks continue to lend more to small businesses and the effect of bank size as measured by assets on small business lending. DeYoung (1998) found that

bank age was negatively correlated to small business lending and that asset size and small business lending was curve linear with small business lending clearly declining after assets exceeded 200 million. Because new banks start out small, de novo banks have some regulatory limits on the size of loans they can extend to individuals and related firms. DeYoung (1998) stated, "the overall tendency in the data is unmistakable: newly chartered banks continue to make disproportionate amounts of small business loans well beyond the three years identified by Goldberg and White" (p. 870). Therefore, "if bank age is inversely related to small business lending, as suggested both here and by Goldberg and White, then policies that restrict the formation of new banks are also likely to restrict the supply of credit to small businesses" (p.871-872).

One noteworthy point is that the classification of a small business loan is somewhat misleading. Federal agencies collect data on small business loans for three size categories. Those with original amounts under $100,000, loans $100,001 to $250,000, and loans $250,001 to $1 million (Strahan & Weston, 1998). These amounts align with the Community Reinvestment Act and appear annually in the June *Report of Condition and Income* (the Call Report) filed by all commercial banks. Therefore, researchers have used loan size as a proxy for borrower size (Berger & Udell, 1996). However, under this reporting mechanism a loan of less than $1 million to a subsidiary of a Fortune 500 firm would classify as a small business loan. In addition, multiple commercial loans under $1 million to companies with hundreds, even thousands, of employees and decades of years in business classify as small business loans. The borrowing needs of many microenterprises are often only in the tens of thousands of dollars. Because of the lack of data, it is not possible to know the true extent of credit rationing to the smallest small

businesses, which also happen to account for the majority of employers and new job creation in the US (Headd, 2015).

The Role of Small Business in Job Creation

In the US, the number of people employed by large corporations has been on the decline since the 1970s. As of 2007, small businesses represented 99.7% of all employer firms, generated 65% of all new jobs in the 17 years prior to 2007, and provided half of all private sector jobs (CHI Research, 2003; Kobe, 2007). Microenterprises employing 1 to 9 employees made up 75.3% of the private-sector employers in 2013 (Headd, 2015) and new and young companies are the primary source of job creation in the American economy (Wiens & Jackson, 2014). This explains researchers' increased interest in small business venture creation and capital acquisition in recent years (e.g., Bruns, Holland, Shepherd, & Wiklund, 2008; S. Carter, Shaw, Lam, & Wilson, 2007; Holland & Shepherd, 2011; Mitter & Kraus, 2011; Rajan, 2012; Rindova, Barry, & Ketchen, 2009; Shane, 2008; Shepherd, 2011; Winton & Yerramilli, 2008). The interest also extends to the informal business sector (Bruton, Ireland, & Ketchen, 2012; McGahan, 2012). However, much of the early research focused on firms receiving venture capital and private equity funding following Bruno and Tyebjee (1985) and Bruno, Tyebjee, and Anderson (1985). Wright and Robbie (1998) provide a comprehensive review. Despite the fact that successful venture capital firms have provided 10% of the jobs in the US (Shane, 2008; Venture Impact, 2011), companies employing over 100 people only made up 2% of US firms that have a payroll while over 78% of US firms were non-incorporated businesses that do not have a payroll. Having a payroll indicates that they employ someone other than the owners. Therefore, the microenterprise is an important factor in US employment and job creation. Unfortunately, the

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data indicates that new business startups have been declining in the US for several years (Wiens & Jackson, 2014) while the closure rate of existing business has remained relatively constant; in fact, in 2014 and 2015 the US business closure rate exceeded the US business creation rate for the first time in 35 years (Clifton, 2015). This is an indication the business dynamism in the US is in decline; in fact, over the past three decades it declined in all 50 states and all but a handful of the three hundred and sixty plus US metropolitan areas (Hathaway & Litan, 2014). Coincidently, during this time the number of community banks has also declined over 50% (FDIC CBS, 2012) and the number of new bank startups has decreased from about 200 per year to less than one per year since 2007 (Adams & Gramlich, 2014). Previous research has not provided sufficient insight into the funding of the firms that employee the most people in the US, the microenterprise. This study examines the competitive environment of the major source of debt funding to existing microenterprises and new business startups, the community bank.

Urban migration and job creation. Migration from rural to urban areas is occurring throughout the world andthe US the trend is the same (Arzaghi & Rupasingha, 2013; Barkley, 1990; Deller, Tsai, Marcouiller & English, 2001; Fuguitt and Beale, 1996; Johnson, Nucci, & Long; 2005; Lucas, 2004; Nechyba & Walsh, 2004; Schachter, Franklin, and Perry, 2003). With the exception of a five-year period from 1995 to 2000, when slightly more people in the US moved to rural areas than moved to metropolitan area, urban migration is an established phenomena. This trend indicates that the greatest need for new job creation in the US is in metropolitan areas. The Office of Management and Budget defines Metropolitan Statistical Areas (MSA) for use by Federal statistical agencies in collecting, tabulating, and publishing Federal statistics; 381 MSAs exist currently. MSAs are larger cities with a core urban population

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minimum of 50,000; however, 351 of the current MSAs have populations that exceed 100,000

and 51 have populations exceeding 1 million. The 2010 census indicates that 80% of the US

population now resides in urban areas.

Coincidental to the deregulation of the financial services industry since the 1980s, the US

has been experiencing an increasing persistence of unemployment after the last three recessions

(Coibion, Gorodnichenko, & Koustas, 2013); leading many politicians and pundits to use the

term *jobless recovery*. Rutledge (2014) argues that the jobless recovery results from non-price

credit rationing from banks for small firms and that the aggregate numbers obscure reality in

small business lending. He points out that while total business loans have appeared to recover to

the 2007 pre-crisis peak, the majority of commercial loans are from the largest 100 banks; small

business loans have barely recovered from the lows. He blames the increased regulatory burden

and the reduction in the number of small banks. Rutledge (2014) points out, as numerous studies

have shown, that small banks lend to small businesses and that small businesses are the job

creators. He also argues that the rationing of fairly priced credit to small businesses has opened

an opportunity for private equity investors to provide that capital at 15-25% rates of return and

that is not good for jobs, for growth, or for family incomes.

What is a Community Bank?

While "most people are able to articulate the characteristics of community banks" (FDIC

CBS, 2012, Ch1, p.2), the academic literature does not establish a clear definition. The term

relationship banking is often associated with community banks (e.g., Berger & Udell, 2002;

Critchfield et al, 2004; DeYoung, Hunter & Udell, 2004; Hein et al, 2005;) because they obtain

core deposits and extend loans to businesses and residents in their local community. This

facilitates a specialized knowledge about their clients through long-term relationships (FDIC CBS, 2012; Holod & Peek, 2013). Because the structure of large banks is better suited for dealing with hard data like credit history and credit scores, large banks tend to take more of a *cookie cutter* approach to business lending (Berger, Demirgüç-Kunt, Levine, & Haubrich, 2004; Cole, Goldberg & White; 2004).

As a result, community banks play an important role in providing credit to the smallest of businesses, which are traditionally opaque in terms of financial history and reporting (Holod & Peek, 2013; Green, 2011). Small firms rely heavily on banks for funding with business startups receiving about three-quarters of their funds from banks (Cole & Wolken, 1995; Elliehausen & Wolken, 1990; Robb et al., 2010). Dennis (2011) found that small businesses using small banks received 73% the credit sought as opposed to only 48% for small businesses using large banks. Holod and Peek (2013) not only found that small business lending was a profitable niche for small banks, but they also found that the relationship monitoring cost did not outweigh the benefit and that non-real estate loans $100,000 or less (considered micro-business loans) were the most value-enhancing for small banks. In addition, the ownership and control of community banks is often local and this contributes to local economic development because of the incorporation of broader local stakeholder interest in lending decisions (Ostergaard, Schindele, & Vale, 2009). However, "consolidation of the banking industry, insofar as it takes the form of the acquisition of smaller banking organizations by larger banking organizations that are less focused on small business lending, may be value destroying" (Holod & Peek, 2013, p. 25). Therefore, "these issues should be closely monitored, and further analysis is needed to assess the impact of small business borrowers moving from more traditional *relationship* lending with

smaller lenders to *factor* lending opportunities with the larger lenders (Sargent, Haynes, & Williams; 2011, p. *iii*)

Research studies have frequently identified community banks based on total asset size with $1 billion being a common maximum. However, studies have applied this size limit to both individual bank charters (e.g., DeYoung, Hunter & Udell, 2004) and bank holding companies (e.g., Critchfield, et al, 2004). Both of these classification mechanisms are problematic because banking organizations exist at both the individual bank charter level and the bank holding company level that have assets under $1 billion that do not engage in traditional deposit and lending operations; credit card specialists, trust companies, and bankers' banks are examples (FDIC CBS, 2012). The size limit of $1 billion also raises concerns because banks exist that operate within a limited geographic scope and engage in relationship banking that have over $1 billion in total assets. On the other hand, simply applying geographic scope based on operating in a single state is problematic because some community banks may operate within a metropolitan area that extends across state borders; Memphis provides a good example. To address these concerns, the FDIC Community Banking Study (2012, Appendix A) developed a new definition that includes a five step process to identify community banks. In brief, the process eliminates specialty banks while including banks maintaining offices in no more than three states and no more than two metropolitan areas while using an asset size of $250 million in 1985 to $10 billion in 2010 with additional restrictions on bank branches. This study uses that framework to identify community banks.

Relationship lending and small business credit. Community banks play a very important role in funding small businesses. Although community banks hold only about 14% of

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bank assets they provide 46% to 60% of small business and farm loans (Berger, Goulding, & Rice, 2013; FDIC CBS, 2012, Ch. 1.). However, loan reports may understate this number because small business owners use forms of lending not classified as commercial loans such as home equity lines of credit (Shane, 2008). Researchers have traditionally argued that community banks operate in a manner that allows them to develop the strong relationships needed to deal with the informational opacity or information asymmetries associated with the smallest of businesses by interpreting the *soft* qualitative information about small businesses and the local community (Berger, Goulding, & Rice, 2013).

The literature refers to this as *relationship banking*, *relationship lending theory*, or the *relationship lending hypothesis* (e.g., Berger, Miller, Petersen, Rajan, & Stein, 2005; Berger & Udell, 1995; Berlin & Mester, 1998; Bhattacharya & Chiesa, 1995; Boot, 2000; Elyasiani, & Goldberg, 2004; Scott, 2006; 1999; Petersen & Rajan, 1994, 1995; Rajan & Winton, 1995). Berger and Udell (2002) label relationship banking as a lending technology that encompasses both how the loan officer gathers generally unquantifiable information from the business owner, suppliers, customers, and community and then communicates that "soft" information throughout the bank. Berger and Udell conclude that because smaller banks have fewer management layers they have a comparative advantage in relationship lending. Aligned with the theory of hierarchical control (Williamson, 1967), the organizational structure of large banks facilitates the transmission of "hard" quantitative information, also known as *transaction based lending* technology; therefore, they tend to concentrate on lending to established businesses with financial transparency. Berger, Demirgüç-Kunt, Levine, & Haubrich (2004) provide comprehensive insight into the difference between large banks and small banks.

As well, banks of different sizes may deliver their services using different technologies. Large banks may have comparative advantages in lending technologies such as credit scoring that are based on "hard" quantitative data. Small banks, in contrast, may have comparative advantages in lending technologies such as relationship lending that are based on "soft" information that is difficult to quantify and transmit through the communication channels of large banking organizations (e.g., Stein 2002) and may create agency problems that require a closely held organizational structure (e.g., Berger and Udell 2002). Consistent with these arguments, large banks relative to small banks in the U.S. have been found to lend proportionately less of their assets to SMEs (e.g., Berger, Kashyap, and Scalise 1995), to lend to larger, older, more financially secure SMEs when they do so (e.g., Haynes, Ou, and Berney 1999), to charge lower rates, earn lower yields, and require collateral less often on their SME loans (e.g., Berger and Udell, 1996, Carter, McNulty, and Verbrugge, 2004), to have shorter and less exclusive relationships (e.g., Berger et al. 2005), to lend more often on an impersonal basis and at a longer distance (e.g., Berger et al., 2005), and to base their lending decisions more on financial ratios than on prior relationships (e.g., Cole, Goldberg, and White, 2004). Thus, the literature is strongly consistent with the hypothesis that large banks tend to make hard-information-based transaction loans to larger, safer, more transparent borrowers, while small banks tend to make more soft-information-based relationship loans to smaller, riskier, more opaque borrowers (p. 437).

The use of credit scoring is well established in consumer and mortgage loans; however, small business credit scoring is a more recent innovation and more likely to be implemented in large banking organizations (Berger, 2015; Frame and White, 2015; Frame, Srinivasan, & Woosley, 2001). De Young (2008) suggests that the difference in these lending technologies has led to a bifurcation in the banking industry with small banks emphasizing relationship banking and large banks specializing in high-volume standardized and low-cost services.

The lending industry has a well-established credit evaluation framework and it consists of the five Cs of credit: Capital, Collateral, Conditions, Capacity, and Character (Alexander & Cohen, 1999; Hale, 1983; Koch & MacDonald, 2010; Orser & Foster, 1994; White, 1990). Researchers have suggested relationship lending as a barrier to entry (Broecker, 1990; Dell'Ariccia, Friedman & Marquez, 1999); however, Petersen and Rajan (1995) argue that the benefits or lending relationships dissipate with greater competition in the loan market and Berlin and Mester (1998) found evidence that relationship lending became less profitable due to increased competition. Although theoretical and empirical work in this area is mixed, "at present the weight of evidence seems to support the conclusion that relationship lending has declined in the face of increased loan-market competition" (Van Hoose, 2010, p. 80). This opens the possibility that the increased competition in the loan market leads to large banks *cherry picking* clients that best fit the transaction based lending system. "Cherry picking tends to mean that a competitor selects an upmarket segment to attack with product/serves package which is differentiable and which is perceived by customers to be superior to alternate offering" (Channon, 1997, p. 37). Channon (1997) points to direct telephone marketing of automobile insurance where "by carefully selecting the motor risk that the company was interesting in insuring [they], achieved a higher level of profitability and lower risk (p. 37). The possibility of

loan default is significant in small business lending given the widely repeated statistic that over

half of all business startups fail or otherwise go out of business within five years (for discussion

see Shane, 2008). This leaves community banks with only the riskier small business loans as the

large banks actively pursue the more creditworthy and less opaque business clients. Although

individual loan client and depositor movement is not tracked, evidence suggests that community

banks do encounter this situation (Carter, McNulty, & Verbrugge, 2004; Ergungor, 2003;

Whalen, 2001). In Eastern European nations, large foreign banks dominate many markets. This

has raised concerns about foreign owned banks cherry picking of the best loan clients, which

leaves local banks with riskier loan portfolios (Claeys & Hainz, 2006). The fact that the data

indicates that community banks represent a disproportionately large percentage of FDIC failure

cost (Critchfield et al, 2004) seems to support this position.

The Changing Competitive Landscape of US Banking

Historically, most banks in the US have been local community banks due to the

geographic restrictions placed on bank branching. Because nationally-chartered banks did not

exist until after Congress created the Federal Reserve in 1913, banking was a state-regulated

business. In some states, banks were limited to branches in one county or adjoining counties.

Hughes (1992) and Strahan (2003) provide insight into early US banking regulations. As late as

1985 only twenty states allowed statewide branching (Radecki, 1998). In 1927, the McFadden

Act limited nationally chartered banks to the same geographic limitations as state banks in the

state of operation. Although the act did grandfather in a few national banks with existing

branches across state lines, for example Wells Fargo had established hundreds of branches

stretching from New York to California before 1900 (Loomis, 1965), the McFadden Act resulted

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in the US banking system consisting of thousands of small banks operating in specific geographic areas with little competition. The McFadden Act, Regulation Q put restriction on deposit interest rates. The Glass-Steagall Act of 1933 created the Federal Deposit Insurance Corporation (FDIC) and prohibited commercial banks from engaging in investment bank activities. These acts and similar legislation at the state level reflected concerns about individual banks becoming too large after 5,712 bank failures from 1921-1929 and 15,015 bank failures during the Great Depression from December 1929 through December 1933 (Calomiris, 2010).

Efforts to get around the McFadden Act restrictions, some of which involved court decisions that weakened the law, led to the formation of bank holding companies that opened or acquired banks in various states and essentially operated them as subsidiaries. This resulted in the Douglas Amendment to the Bank Holding Company Act of 1956, which permitted states to determine if, and under what mechanisms, out-of-state bank holding companies could own banks within their borders. As time progressed, court decisions and state laws allowed banking across state lines either by allowing out-of-state banking organizations to open new *de novo* branches, through acquisitions of existing banks, or by mutual agreement between states to allow banks chartered in other states to open branches in their state. As Securities and Exchange Commission Commissioner Stephen Friedman (1981) stated in testimony before Congress, not much was left of the McFadden Act prohibition on interstate banking by the 1980s as he pondered if the future of banking in the US would "end up with ten large banks blanketing the country" (p, 3). Beginning in 1980 with the Depository Institutions Deregulation and Monetary Control Act (DIDMCA), federal legislation unwound the Depression Era banking restrictions ending with the 1994 Riegle-Neal Interstate Banking and Branching Act and the 1999 Gramm-Leach-Bliley Act

that allowed financial holding companies to own commercial banks, investment banks, and insurance companies.

Friedman's (1981) foresight into a few banks blanketing the country proved correct. The number of federally insured bank and thrift charters peaked in 1985 at 17,901. Because of deregulation in the financial industries, the number began declining as unassisted bank mergers grew to over 600 per year by the late 1990s before starting a gradual decline to an average of 250 per year in the 2000s. Despite a surge in the number of new, known as de novo, banks in the 1980s and again in the late 1990s, the FDIC institutional changes data indicates that from 1985 forward the number of mergers far exceeded the number of de novo banks (See Figure 1). During the 1990s, de novo banks correlated with merger activity (Berger, Bonime, Goldberg & White 1999; Keeton. 2000; Seelig & Critchfield, 2003). Keeton (2000) found that de novo banks were associated with out-of-market acquisitions, possibly to serve dissatisfied customers or due to merger-related layoffs as anecdotal evidence suggested (Gillan, 1998; Goldberg, & White, 1998; Murray, 1998; Zellner, 1998). Interestingly, Seelig and Critchfield (2003) found that de novo banks were associated with in-market acquisitions; however, Seelig and Critchfield looked only at urban markets in a three-year period. Coinciding with the merger and de novo activity, economic downturns of the late 1980s and early 1990s and 2007 through 2009, as well as a few failures during periods of economic stability, resulted in 1,644 FDIC assisted mergers and 112 bank closures. Not surprisingly, bank failure is associated with periods of recession and low economic growth (Adams & Gramlich, 2014). As of the first quarter of 2015 there were 5,501 US commercial banks operating in the US, a 69% decline from 1985.

Figure 1. Bank Mergers and De Novo Banks 1980 – 2013

Bank Mergers and De Novo Banks 1980 - 2013
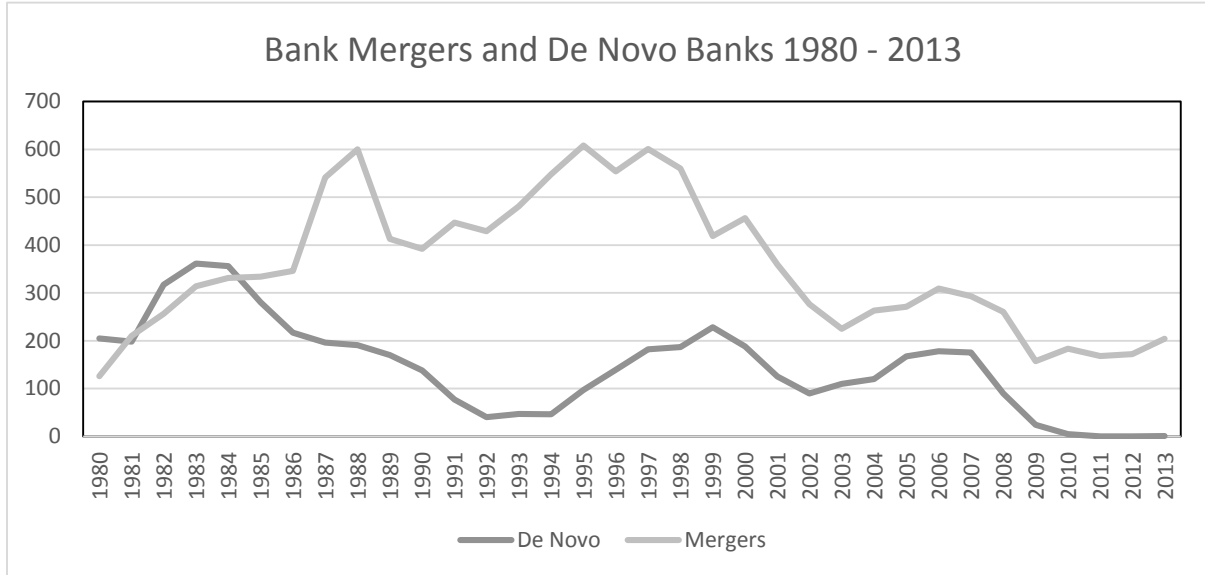
At the end of 2011, 107 banks had over $10 billion in assets each and that summed to

$11.1 trillion or 80% of industry assets; for a detailed discussion on the impact of deregulation

and industry consolidation on the community banking sector see the FDIC Community Banking

Study (2012, Ch. 2). At the end of 2014, the Federal Reserve data indicates that four bank

holding companies, JP Morgan Chase, Bank of America, Citi Group, and Wells Fargo, held over

$1 trillion in consolidated assets each. This amounts to more than one-third of the $15 trillion US

commercial bank assets and $4.6 trillion or about 43%, of the $10.7 trillion total US commercial

bank deposits. These four banks also accounted for 19.1% of all the bank offices in the US

(FDIC CBS, 2012, Ch. 2). In 2014, 1,778 insured commercial banks had consolidated assets in

excess of $300 million each for a combined consolidated asset total of $13.77 trillion or just over

90% of all US consolidated commercial bank assets (Large Commercial Bank Report, 2014).

Community banks, some of which are on the large commercial bank report, combined held only

about 14% of all FDIC insured bank assets.

Despite the deregulation and industry consolidation that has led to increased competition for deposits and loans, small, locally owned commercial banks have not disappeared. Although they hold a minority of the nation's total bank assets (14%), they remain the most common business model among FDIC insured institutions, in fact, the ratio of community bank charters to non-community bank charters was 6,356 to 364 at the end of 2011 (FDIC CBS, 2012). This is because non-community banks have expanded by entering the metropolitan areas through acquisitions or opening new branches and have not pursued entry into rural counties. In 2011, 87% of non-community banking offices were in metropolitan counties as opposed to 62% of community banking offices (FDIC CBS, 2012, Ch. 3). Therefore, community banks still play a very important role in the economy of many local communities because almost one out of every five US counties have only a community bank and the percent of community banks located in metropolitan and rural counties is 52% and 48% respectively.

The Effect of Competition on Bank Failure

The Structure-Conduct-Performance (SCP) Paradigm comes from the industrial organization (IO) economics literature beginning with the early works of Edward Chamberlin (1929, 1933), Edward Mason (1939), and Joe Bain (1951). Industrial organization economics builds on the theory of the firm by examining market structure and firm behavior in markets ranging from perfect competition to imperfect competition, oligopoly, duopoly, and monopoly. Industrial economics' systematic model for assessing competition within an industry combined with business policy's concept of strategy lead to the development of strategic management that dominates contemporary management education (see Porter, 1980, 1981, 1985). The SCP paradigm has been applied in both theoretical and empirical research on the banking industry

(e.g., Adams et al., 2002; Berger & Hannan, 1989; Brewer & Jackson, 2006; Klein, 1971; Mallett & Sen, 2001; Martin-Oliver et al., 2008; Ongena & Popov, 2009; Rhoades, 1982; Shaffer and Srinivasan, 2002). See Gilbert (1984) and Hannan (1991) for a review of studies from the 1960s, 1970s, and 1980s. Empirical studies focusing on bank concentration and competition prior to the deregulation of the 1990s found that U.S. banks in more concentrated local markets, as measured by the Herfindahl-Hischman Index (HHI) or n-firm concentration ratio (CRn), charge higher rates on small and medium enterprise (SME) loans and pay lower rates on retail deposits (e.g., Berger and Hannan, 1989; Hannan, 1991). Studies also found that their deposit rates are slow to respond to changes in open-market interest rates (e.g., Neumark and Sharpe, 1992). Berger, Demirgüç-Kunt, Levine, and Haubrich (2004) provide a comprehensive review of the literature on bank concentration and competition. They found that these studies commonly used measures of concentration such as the HHI or CRn and mainly focused on the interest rates charged on loans and paid on deposits. The studies generally found empirical support for the SCP hypothesis that increased market concentration leads to higher loan rates and lower deposit rates, which in turn lead to increased net interest margins and profits and reduced access to credit. Of course, in markets where numerous banks compete the opposite would be true.

Van Hoose (2010) points out that most US banking markets are concentrated to the point that mergers could raise regulatory concerns. The Department of Justice uses the level of 1800 on the HHI as the cutoff between moderately and highly concentrated markets. In the 1990s commercial bank concentration in metropolitan areas on average were 200 points above that cutoff and rural counties were over 4000, which indicates highly concentrated markets with little competition (Rhoades, 2000). Despite the HHI and CRn values indicating low levels of competition, Berlin and Mester (1998) categorized the financial industry in the 1990s as hyper-

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competitive. Those HHI values changed very little in the 2000s (Dick, 2006; Wheelock, 2011).

In many rural counties in the US an oligopoly exist where only a few banks exist in the market

and in many cases a duopoly exist while there are still a very limited number of counties with

only one bank. A few counties like Loving County, Texas, population 95, do not have any banks.

Legislation governing antitrust issues in banking include the Sherman Antitrust Act of 1890, the

Clayton Act of 1994, The Bank Merger Act of 1960; and the Bank Holding Company Act of

1956. The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 prohibits

approval of interstate acquisition if at the time of the transaction it would result in the combined

bank controlling more than 10% of total deposits of insured depository institutions in the US.

Interestingly, US regulators continue to view the banking industry as a local issue in terms

banking services with geographic markets defined as a metropolitan area, single rural county, or

two or more contiguous rural counties. This is due to the Supreme Court decision in the 1963

Philadelphia National Bank case and regulators have denied very few bank mergers (Radecki,

1998; Prager, 2007; Dick & Hannan, 2010). Despite the number of bank mergers since the

1980s, the level of bank concentration, as measured by the HHI, has not changed tremendously

in rural or metropolitan areas and the changes that did occur were from 1993 to 1999 with little

change after that (Rhoades, 2000; Dick, 2006; Wheelock, 2011). HHI counts the number of

competitor in a particular market; therefore, if a metropolitan area had ten banks and four

nationwide banks purchased the four largest banks in the market that would still leave ten banks

in the local market; therefore, the HHI or CRn would not change. However, the competitive

dynamic changed because the remaining locally owned banks now compete against nationwide

banks with tens of billions, even trillions, of dollars in assets and state of the art technology. As

one community banker in a metropolitan area commented during an interview for this study, "It is David versus Goliath but we do not have a divinely empowered slingshot."

Although the number of competing banks may not have changed, the market dynamic has changed; particularly in the metropolitan areas. Locally owned banks are no longer competing against similar banks, they are competing against nationwide or regional banks with hundreds of billions in assets, technology, and marketing resources. Van Hoose (2010) discusses the dominant bank model where fringe banks are price takers, Hanweck and Rhoades (1984) found empirical support for the dominant bank model. In metropolitan areas across the US, three to five dominant banks hold over 50% of the deposits and dictate the interest rates in that market (Dick, 2006; Wheelock, 2011). In the rural areas, concentration in some cases has decreased as smaller banks have opened branches in neighboring communities and some banks such as Woodforest Bank have entered new rural markets across the nation by renting space across the country in nationwide retail stores such as WalMart. However, in some cases concentration in rural areas has increased from 2007-2010 due to in-market acquisitions of failed banks during the financial crisis (Wheelock, 2011). While the HHI has not changed dramatically in local markets, when viewed in a larger geographic scope such as census area concentration, as opposed to a Metropolitan Statistical Area (MSA) or a single rural county, the HHI has increased significantly (Wheelock, 2011). Radecki (1998) argues that profound regulatory and structural changes in the financial industry make these conventional definitions of markets, established when there were strict restrictions on branch banking, obsolete.

Stephen Friedman's statement at the beginning of deregulation in 1981addresses the concerns regarding the increase of competition in the financial industry and the long-term impact on consumers, small banks, and the role of regulatory agencies. Although competition is

heralded as the backbone of the US economy and broadly accepted as the best tool for promoting

consumer well-being, Stucke (2013) discusses exceptions to this in anti-trust law and provides

examples where excessive competition, one of them the financial sector, can promote behavioral

exploitation, unethical behavior, and misery. Because the majority of commercial bank loanable

funds are in the form of deposits and government backed insurance covers those deposits in most

cases, a significant societal cost is associated with bank failure and the resulting instability in the

banking system. As a result, the banking system is widely recognized to be a special case from

the perspective of stability (e.g., Goodhart et al, 1998; Carletti and Hartmann, 2003) and this

leads to calls for effective regulatory oversight. However, the effect of regulation on competition

and financial stability is complex and multifaceted (Allen & Gale, 2004).

Keeley (1990) builds on Merton's (1977) position that fixed rate deposit insurance

functions as a *put option* to argue that the increase in US bank failures in the 1980s was the result

of deregulation that increased competition. Keeley's (1990) position is that in a regulatory

environment where interstate and intrastate banking are restricted, a bank charter is more

valuable because of the opportunity to extract monopoly rents. As a result, banks in low

competitive environments are more likely to avoid excessive risk taking in terms of the loan

portfolio to avoided losing the valuable charter due to bankruptcy. Keeley (1990) also found that

banks with greater market share held more capital in relation to assets and argues that those bank

shareholders have relatively more at stake in the event of bank failure; hence, they have greater

incentive to monitor loan risk and this mitigates the agency issue of moral hazard. Hellman,

Murdock, and Stiglitz (2000) examine competition in the deposit market and argue that

competition for deposits leads to paying higher rates of interest, which in turn leads banks to take

more risk to obtain higher rates of return on the loan portfolio. They demonstrated that in a

simple model of moral hazard capital controls are not sufficient; therefore, deposit rate controls are also required. However, it should also be noted that higher capital requirements also reduces the ability of banks to create liquidity and this results in a loss of consumption (Van den Heuvel, 2008)

The positions taken in Keeley (1990) and Hellman et al (2000) are known as *charter value* or *competition-fragility* views where competition erodes market power, profit margins, and franchise value, which creates a moral hazard situation that leads to greater bank risk taking and more bank failures because deposit insurance acts as a put that limits the downside risk. Canoy, Dijk, Lemmen, de Mooij, and Weigand (2001) and Carletti and Hartmann (2003) provide a detailed review of the literature on competition and fragility in the banking sector; however, the theoretical literature is not conclusive and some empirical papers support the 'charter value' hypothesis while others do not. Therefore, it is noteworthy that a contrary *competition-stability* argument has appeared in the literature more recently (e.g., Boyd & De Nicolo, 2005; Martinez-Miera & Repullo, 2010). Boyd and De Nicolo (2005) argue that market power leads to charging higher interest on loans and that leads to borrowers taking greater risk that results in more loan defaults; therefore, in competitive markets the interest charged for loans is driven down so borrowers have more money to pay back loans and that results in fewer defaults (Martinez-Miera & Repullo, 2010). However, Berger, Klapper, and Turk-Arias (2009) examine both the competition-fragility and competition-stability views using bank level data from 23 industrialized nations and find support for the competition-fragility view that banks with greater market power have less overall risk. While they do find support for one element of the competition-stability view that loan risk increases with market power they argue that higher equity capital ratios can offset that risk.

Why are there no New Banks?

The lack of new bank charters is a major concern. The US saw a significant increase in new bank charters in the 1980s following the DIDMCA Act in 1980 and in the 1990s following the 1994 Riegle-Neal Interstate Banking and Branching. With the exception of slight uptick in new bank charters from 2003 through 2007, since the peak in 1984 the general trend has been a decrease in new bank charters. Regulators issued only seven new bank charters from 2009 to 2013. No new banks received charters or started operations in 2011, 2012, or 2014 and these are the only years this has occurred since the FDIC began in 1934. After the 2007 to 2009 financial crisis there were numerous new regulations directed at the financial services industry including the Dodd-Frank Financial Reform Act of 2010 and new rules for mortgage lending instituted by the Consumer Financial Protection Bureau. Although these regulations were intended to require more reporting, restrict certain activities, and provide greater oversight in order to avoid another financial crisis with the *Too Big To Fail* institutions, many argue that these regulations are unnecessarily raising compliance and operating costs for community banks that, in turn, decreases lending to small businesses (e.g., Rutledge, 2014). In addition to community bank management and industry organizations, politicians like Senator Pat Toomey (Adams & Gramlich, 2014) and former FDIC Chairperson Sheila Blair (2014) have voiced these concerns.

To address these concerns, Federal Reserve Board of Governors researchers Adams and Gramlich (2014) studied new bank charters from 1990 through 2013. Early papers from Hanweck (1971), Boczar (1975), and Rose (1977) studied new bank charters before the period of deregulation and Hanweck found that less concentrated large markets have significantly more new charters. As previously discussed in this paper, Seelig and Critchfield (2003), Berger et al (2004), and Keeton (2000) found that merger activity and local market demand conditions are

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associated with new bank entry. Amel and Liang (1990) considered both branch expansion by existing banks and new charter formation from 1977 to 1988 and found that local population, population growth, and high incumbent profits are strong determinants of entry. Adams and Amel (2007) also found that local market demand conditions correlate with new entry; however, they also found that incumbent bank branch expansion and small bank presence deter entry.

A new bank charter may be federal with the regulator being the Office of the Comptroller of the Currency (OCC) or a state charter in which case the regulator is the Federal Reserve Board (FRB) for member banks or the FDIC for non-member banks. Adams and Gramlich (2014) examined new bank charters and branch expansion of existing banks into new geographic markets from 1976 through 2013; both de novo and branch expansion into new markets have declined in recent years. They discuss how filing fees and capital requirements to obtain a new bank charter vary widely across the US, from a minimum capital of $3 million in Georgia to over $30 million to start a bank in New York City. Filing fees range from $5,500 to $2.3 million. New banks must also apply for participation in the FDIC deposit insurance fund. Critics have cited one change in 2008 as a disincentive to establish a new charter. The FDIC raised the requirement that new charters abide by a business plan from three years to seven years.

Additional regulatory burdens come from Basel Committee increased capital and liquidity requirements, the Dodd-Frank Financial Reform Act, and new rules for mortgage lending instituted by the Consumer Financial Protection Bureau. Small bank advocates argue that these regulations and the uncertainty regarding interpretation, enforcement, and future expansion of these regulations cause an excessive compliance burden on small banks that raises operating costs and deters new bank startups (e.g., Griggs, 2015; Rutledge, 2014). Congress has debated

the issue and recent legislation to reduce the burden on small banks has advanced, but not without opposition (Flaherty, 2015; Luetkemeyer & Scott, 2015; Puzzanhghera, 2015).

Adams and Gramlich (2014) found that both new bank charters and branching into new geographic areas correlated positively with the Federal Funds interest rate, population growth, and per capita income; de novo entry and national expansionary entry correlated at 0.93. They also found that industry-liberalizing legislation had positive coefficients while restricting legislation had negative coefficients. The Federal Funds interest rate is low during periods of recession and low economic growth and higher during periods of economic growth; this indicates that both new bank charters and branching into new geographic areas correlate positively with the state of the economy.

The majority of bank profits come from the net interest margin between the interest charged on loans and the interest paid on deposits. Because net interest margins are lower when the Federal Funds interest rates are low, bank profits also decline. However, de novo banks encounter a worse profitability situation during periods of low interest rates because de novo banks do not have a portfolio of preexisting loans from earlier periods when interest rates were higher. The capital from investors to start the new bank sits in low interest Treasury Bills as the new bank begins taking deposits and making loans and the net interest margin on deposits loaned are rather narrow. Although Adams and Gramlich (2014) conclude that non-regulatory influences such as low interest rates and low banking demand are likely to have caused 75-80% of the current decline in new charters, they found a structural shift in the 2010-and-after period and they cannot determine if this effect is transitory or persistent, regulatory or non-regulatory. This study provides a valuable contribution by measuring and comparing community bank management team members' perceptions related to starting a new bank in the area they service.

Industry Analysis of Community Banking

Michael Porter (1980) suggests that, "The intensity of competition in an industry is neither a matter of coincidence nor bad luck. Rather, "competition in an industry is rooted in its underlying economic structure and goes well beyond the behavior of current competitors" (p. 3). Porter's Five Forces Analysis (See Figure 2) is a popular framework for analyzing competition within an industry. However, defining an industry is not as simple as it might seem. Porter (1980, 1985) hypothesized that competitive intensity consists of five competitive forces: power of suppliers, threat of new entrants, power of buyers, threat of substitute products, and the intensity of rivalry among existing competitors. As the name *industrial organization* suggests, this model developed from studies on industrial firms; however, one can use the framework to evaluate the financial services industry. Banking differs from traditional industries such as manufacturing in at least two ways. First, banks provide a service as an intermediary; therefore, they do not manufacture a tangible product. Secondly, the suppliers and buyers are often the same people or firms in that individuals and firms supply the deposits and many of the same firms and individuals borrow funds from the institution.

Figure 2. Michael Porter's (1980) Five Forces
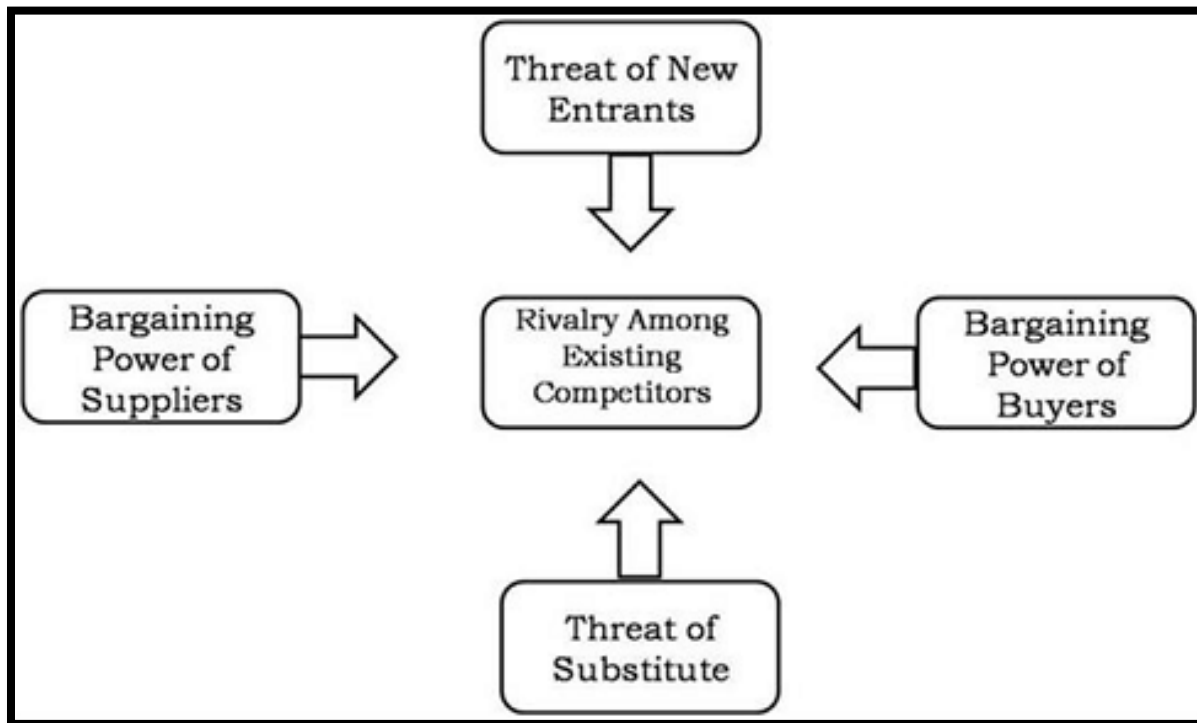
Community banks purport to provide a differentiated service because of the personalized

service provided through relationship banking. Nonetheless, community banks operate within the

larger banking industry and the even larger financial services industry. Given the deregulation of

the financial services industry since the 1980s and advances in information technology,

traditional banks operate in a competitive environment offering many substitutes for both

deposits and loans. It is quite easy to argue that the banking industry is on the perfect

competition side of the competitive intensity continuum given that banks deal in a completely

undifferentiated commodity, currency, in this case the US dollar. No difference exists between

one dollar and any other dollar. From the view of a profit-maximizing individual, especially

considering FDIC deposit insurance, the decision of which bank to deposit one's funds in or

borrow funds from would be the interest paid on one's deposits, the interest charged on one's

loans, and any fees charged on associated transactions.

Suppliers. One can view depositors as suppliers; therefore, the interest rate paid on deposits and fees charged for services such as checking accounts are what concern them. For the bank, the deposits are an essential raw material because the core business activity is acting as an intermediary by loaning out deposits and making returns on the net interest margin. As Channon (1998) notes, in the financial services industry information systems played a major role in "transforming and forcing convergence of what were previously a series of segregated industry segments" (p. 197). This is even truer today. Community banks face competition for deposits from other community banks, regional banks, and the nationwide megabanks as well as non-financial institutions, which one could label as substitutes, offering a range of income generating instruments such as money market funds, bonds, and annuities. Brush, Dangol, & O'Brien (2012) found that the extent to which firms can benefit from customers' switching costs is contingent upon the firm's internal cross-selling capabilities and community banks have far less cross-selling ability than their larger nationwide and regional competitors do. Electronic banking allows depositors to access countless financial service firms via computer or mobile banking on smartphones with virtually no switching costs. With the ability to have direct deposit of payroll, deposit checks from a smartphone by taking a picture of them, pay bills via electronic transfer of funds, and withdraw from nationwide ATM networks without a fee in many cases, depositors have little need today to go to a branch bank as they did in the past. Therefore, from the depositor's point of view, the customer market for their deposits is very fragmented and regardless of where one lives, a depositor can find buyers for all the deposits that they can supply.

For example, Ally Bank advertises that the lack of branch banks allows it to pay higher rates on deposits. Discount brokerages such as Charles Schwab and E-Trade, which have only a

very few branches in a few metropolitan areas, offer free checking through their FDIC insured

bank subsidiaries with money market rates paid on balances. Discount brokerages also offer the

ability to transfer funds electronically to a wide variety of stock, bond, certificates of deposit, or

mutual fund investments through the brokerage division. Deregulation and information

technology have transformed banking into an industry where the suppliers of funds have

significant power because they can choose to stop depositing in one institution and

instantaneously find multiple other customers for their deposits, either inside or outside the local

market. Despite the ability to bank outside one's local area, data indicates that the majority of

individuals and small businesses maintain accounts with banks that have branches in the local

community. In local markets where dominant banks control 50% or more of the deposits, which

is common in most US metropolitan areas, the small community bank is a price taking fringe

bank (Dick, 2006; Rhoades 1982; Van Hoose, 2010; Wheelock, 2011) that must meet or exceed

the rates that dominant banks pay on deposits.

New entrants. Being a highly regulated and government-insured industry, significantly

more barriers to entry exist in banking than one encounters in many other industries. To begin

operations investors must first obtain a charter from a federal or state agency. Although FDIC

deposit insurance is not mandatory, having deposit insurance is a competitive issue in terms of

attracting depositors. Both require meeting rigorous requirements. In the most recent example of

the first bank charter approved since 2010, Bird-in-Hand Bank in Lancaster, Pennsylvania,

charter approval took seven months and cost approximately $800,000 (Tracy, 2013). As Adams

and Gramlich (2014) discussed, the financial barriers to new entrants varies by state across the

US, but in most cases it is not so excessive that a group of relatively wealthy investors could not meet the capital requirements for a new bank charter.

The real deterrent to entry by new banks is the ability to overcome the startup costs, attract enough deposits away from incumbent banks, and be able to loan at sufficient margins to overcome the overhead costs. In metropolitan areas, new banks would likely face intense competition for deposits from both the existing dominant banks and the small price taking banks already operating in the market. In rural markets, new banks would face deeply entrenched incumbents in a highly concentrated market. David Baris, an attorney specializing in bank startups, stated that the FDIC's policies are making a new bank much less attractive and Todd Mansfield, president of United Southern Bank in Kentucky said that compliance and technology requirements are increasing the human resource need and operation costs significantly (Tracy, 2013). There is empirical evidence of economies of scale in banking (Huang, & Wang, 2001; Hughes, Mester, & Moon, 2001) and in the community banking segment evidence suggest that the benefits of scale occur around $300 million in assets (FDIC CBS, 2012). Given the increasingly high cost of obtaining a new charter and the increasing cost of compliance and investment in technology and continuing support; arguably, economies of scale create an additional barrier to entry and the threat of entry by new banks is decreasing and will likely remain low for the foreseeable future, maybe indefinitely.

The most likely threat of entry into any market would come from existing banks branching into new geographic areas. Existing banks have already addressed the startup and compliance costs; therefore, expanding into a new geographic area represents a lower cost, in terms of capital, relative to starting a new bank. Given the scalability of modern information systems and the relatively low cost of dedicated network connections to remote facilities, setting

up a new branch is a relatively low risk proposition and in the event the branch is not a success, the exit cost is also relatively low. However, the real barrier to branching into a new geographic area is the new entrant's ability to provide a differentiated service that will attract customers away from incumbents already serving the market.

Buyers. A commercial bank's main product is a loan with the gross profit being the net interest income, which is the difference in the interest paid on deposits and the interest charged for loans. Other operating income, referred to as fee or noninterest income, comes from a broad range of services that include money transfers, escrow activities, letters of credit, trust activities, and even advising and consulting. Although noninterest income has been steadily increasing since deregulation (e.g., DeYoung, & Rice, 2004; Stiroh, 2004, 2006), lending remains the principle business activity for the majority of smaller commercial banks. Nonetheless, some banks have developed a strategy that relies on overdraft fees as a significant source of income (Andriotis, 2014, 2015) and this has caught the attention of the business press and regulators. Maremont and McGinty (2014a, 2014b) of the *Wall Street Journal* reported on how banks with branches located inside Wal-Mart and on military bases were among the nation's top collectors of fees in terms of service-charge income as a percentage of deposits. In an analysis of 6,766 US banks, they found that only 15 had fee income higher than loan income and the top five banks operating in Wal-Mart are included in that group. Although regulatory filings do not breakout fee income specifically, the articles report that overdraft fees may make up a much as 75% of fee income for US banks. Critics argue that these banks are using account overdraft to provide clients the equivalent of a pay-day loan. One of the banks in the articles, The Woodlands, Texas based Woodforest, has been one of the more profitable banks with assets over $3 billion in recent

years. In 2010, Woodforest paid $33 million to the Office of the Comptroller of the Currency to settle a civil administration action related to deceptive practices and excessive overdraft fees (Maremont and McGinty, 2014b).

A bank's largest asset is typically its loan portfolio. Community banks tend to focus on retail or consumer banking such as consumer loans, small business loans, residential and commercial mortgages in the bank's market; generally speaking, community banks do not engage in significant *off balance sheet* activities, the holding of derivative securities, industrial lending, or wholesale banking activities (DeYoung, Hunter, & Udell, 2004; FDIC CBS, 2012; Saunders, & Cornett, 2009). The bank's loan portfolio is also one of the greatest sources of risk and historically the major cause of losses and bank failures; therefore, effective loan portfolio management (Markowitz, 1952; Porter, 1961) is fundamental to a bank's safety and soundness. Because loan portfolio management is so important, it is a primary activity of regulatory authorities and regulators monitor the loan decision process and the evaluation of individual loan default risk (Flannery, 1989).

Whereas interviews and relationships were key elements in the decision process for both consumer and small business loans in years past (e.g., Johnson, 1992; Petersen, & Rajan, 1994), "over the last two decades, consumer lending has become increasingly sophisticated as lenders have moved from traditional interview-based underwriting to a reliance on data-driven models to assess and price credit risk" (Einav, Jenkins, & Levin, 2013, p. 249). With the advancement in information technology, credit scoring use has become increasingly common in decisions on both consumer (Edelberg, 2006) and small business loans (Akhavein, Frame, & White, 2005; Berger, & Frame, 2007; Berger, Frame, & Miller, 2005; Frame, Srinivasan, & Woosley, 2001; Petersen, & Rajan, 2002). According to Fame and White (2014), "Retail loan applications are

now routinely evaluated using credit scoring tools, rather than using human judgment. Such an approach makes underwriting much more transparent to third parties and hence facilitates secondary markets for retail loans, such as credit card debt and mortgages, via securitization" (p. 271).The use of credit scoring aligns with the transaction based lending technology which is well suited for the organizational structure of large financial institutions.

Much in the way that Ally Bank advertises that being an online bank with no branches results in being able to pay higher interest rates on deposits, Quicken Loans offers online mortgages to consumers across the nation. Similar competition exists in the auto loan industry. Einav, Jenkins, and Levin (2013) studied the use of credit scoring in auto loans and Ally Bank, formerly General Motors' financial division, GMAC, before the financial crisis bailout, is one of several financial firms specializing in financing auto purchases through auto dealership across the US. In fact, non-bank lending has grown significantly in both the mortgage (Olick, 2015) and other loan categories (O'Brien, 2014) in the last few years. Recently, investment bank giant Goldman Sachs announced plans to offer online consumer loans (Corkery & Popper, 2015).

Non-bank lenders use equity capital and borrowed funds to lend and by not being banks, they are not subject to the requirements and oversight of the FDIC and bank regulators. Rutledge (2014) argues that the regulatory burden placed on small banks after the financial crisis is restricting bank credit to small businesses and allowing non-bank lenders to earn excessive returns of 15-25% providing credit to small business that large banks do not want to pursue. As is the case for deposits, non-bank financial firms and FDIC insured bank divisions of traditionally non-bank firms such as insurance companies (e.g., Nationwide) provide substitute products for the traditional bank loan. However, there can be switching cost involved in the case of loans, especially mortgage and auto loans due to administrative costs and legal filing fees.

Again, given that a dollar borrowed from one institution is identical to a dollar borrowed from any other institution, borrowers can perceive the loan product as a commodity. As a result, community banks, even those in small communities, encounter many national and regional banks and non-bank financial institutions offering home mortgages, auto loans, and consumer financing products to consumers in the community bank's local market.

Intensity of rivalry among existing competitors. Rivalry among existing competitors includes tactics like price competition, advertising battles, and increased customer service (Porter, 1980) and "where the product or service is perceived as a commodity or near commodity, choice by the buyer is largely based on price and service (p. 19). The strategic management literature suggests that management teams develop strategies based on observations of environmental trends and competitive intensity.

> *Competitive intensity can be defined as a situation where competition is fierce due to the number of competitors in the market and the lack of potential opportunities for further growth. As competition further intensifies, the results of a firm's behavior will no longer be deterministic but stochastic as the behavior is heavily influenced by the actions and contingencies undertaken by competitors. Thus, under conditions of intensifying competition predictability and certainty diminishes.* (Auh & Menguc, 2005, p. 1654)

Pecotich, Hattie, and Low (1999) suggest, "It is expected that industry competitive intensity as described by Porter's (1985) five forces model should be the same for all in the industry yet perceptions of managers within that industry may vary and not strictly correspond to reality" (, p. 419). The key element is how managers perceive and interpret the five forces (O'Cass, &

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Weerawardena, 2010). O'Cass and Ngo (2007) concluded that it is the manager's perception of the intensity of these forces that influences strategy development and firm characteristics. Previous studies have measured manager's perception of competitive intensity (Auh & Menguc, 2005; O'Cass and Ngo, 2007; O'Cass, & Weerawardena, 2010; Pecotich, Hattie, and Low; 1999).

Although prior studies have examined the effects of competition in the banking industry using the SCP Paradigm, previous studies have not examined bank management team members' perceptions of the competitive intensity of the markets in which they operate. With the dramatic decline in new bank charters being a concern, understanding how management team members of incumbent banks perceive the competitive environment can provide insight into the likelihood of new banks entering the market in the future. As Goldberg and White (1998) discuss, in de novo banks the "top executives might be ambitious loan officers from a neighboring bank (or the downsized ``refugees" from a recent bank merger) who believe that they can identify the good risks among local small business borrowers (and who may even bring some of those loan customers with them from their former bank)" (p. 1998). Since "the owners and managers of de novo banks presumably enter banking markets because of profitable opportunities" (p. 1998) understanding how the management team of incumbent banks view the competitive landscape would provide insight into the likelihood that some may pursue organizing a group of investors to pursue a new bank charter. This contributes to the literature by measuring how management team members at incumbent community banks in both rural and metropolitan areas perceive the current competitive landscape.

Community Bank Performance Variables

Based on the 'charter value' or competition-fragility literature, one would expect to find

that community banks operating in rural counties are significantly different from community

banks operating in metropolitan counties because there is less competition in rural counties, rural

banks are more likely to compete against equals. One can also predict that competition for

deposits results in net interest margins (FDIC variable nimy) being lower for community banks

in metropolitan areas where dominant banks operate, which would result in lower returns on

assets and equity (roaptx and roe respectively); therefore these three variables are used to

compare performance. Pre-tax return on assets is the preferred measure in this study because a

good number, 2,278 or 36% at the end of 2001 and 2110 or 35% at the end of 2014, of small

community banks are Type-S corporations; therefore, income tax liability passes through to

individual shareholders (FDIC CBS, 2012, Ch. 6). This fact brings into question the finding of

Hannan and Prager (2009) because they used the after tax variable ROA. They did not find a

significant effect on the performance of small community banks operating in only one market

from 1996 through 2003 based on whether or not they faced competition from multi-market

banks. However, a significant number of approximately 3,800 single-market banks mentioned in

their study would arguably be the most likely to be formed as Type-S corporation and the failure

to take taxation at the bank versus shareholder level into account could result in erroneous

conclusions.

The competition-fragility literature stream also indicates that increased competition

would cause community banks to pursue higher risk loans that could result in greater loan losses.

The FDIC data set has four variables associated with delinquent assets that provide insight into

loan portfolio risk. Measurable events trigger the reporting of three variables while the fourth

incorporates a degree of managerial discretion under Generally Accepted Accounting Principles

(GAAP). Net charge-offs (ntlnlsr) represents loans and leases that have been written off as losses

while *nperfv* represents assets past due 90 days as a percentage of total assets and *nclnlsr*

represents loans and leases 90 days past due as a percentage of gross loans and leases. However,

accounting for loan loss allowances (FDIC variable lnsatres) is covered under Financial

Accounting Standards (FAS) 5, *Accounting for Contingencies*, and FAS 114, *Accounting by

Creditors for Impairment of a Loan* and incorporate a degree of subjectivity (Interagency Policy

Statement, 2006). Following the charter value reasoning, the high competition of the

metropolitan environment would result in a lower charter value and this would lead community

bank shareholders to view FDIC insurance as a put option and place less of their own capital at

risk (Keeley, 1990; Merton, 1977) resulting in lower equity to asset ratios (FDIC variable eqv).

Therefore, this study compares equity capital ratios between metropolitan and rural community

banks.

Finally, Hays, Lurgio, and Gilbert (2009) compare high performance community banks

with low performance community banks without regard to geographic location. They conclude

that, in addition to variables previously mentioned, non-interest expense (nonixay) and efficiency

ratio (eeffr) variables contribute to community bank performance; therefore, those variables are

included in this study for informational purposes. The extant literature does not provide insight

into how these variables might differ in rural versus metropolitan communities. Nevertheless,

intuitively it could depend on factors such as real estate and labor cost which would result in

metropolitan areas being less efficient. However, in an industry that is increasingly relying on

technology, community banks in metropolitan areas may have more clients, deposit assets, and

loans to offset costly investments in information systems. Due to data limitations, the liquidity

and one-year GAP measures used by Hays, Lurgio, and Gilbert (2009) are not included in this study.

Hypotheses

The percent of community banks located in metropolitan and rural counties is approximately equal at 50.5% and 49.5% respectively. If the increased competition in metropolitan areas has not contributed to an increase in bank failure then there would be no significant difference in the percentage of banks failing in rural versus metropolitan areas. Based on the SCP paradigm, the competition-fragility literature, and dominant bank hypothesis, given the lower HHI in metropolitan areas, which indicates less concentration and more competition, and the presence of branches of large nationwide banks and large regional banks in the metropolitan areas one would expect metropolitan banks to fail more frequently than rural banks.

Hypothesis 1: Since 2000, a significantly higher percentage of bank failures occurred in metropolitan areas than in rural areas.

Furthermore, given that community banks operating in rural communities with high HHI levels, which indicates a very concentrated market and less competition, there should be a significant difference in the performance of community banks in rural and metropolitan counties. However, because the default hypothesis for Multivariate Analysis of the Variance (MANOVA) is that there is no difference; the hypothesis is stated as:

Hypothesis 2: Based upon the FDIC performance variables *roaptx*, *roe*, *nimy*, *nonixay*, *eeffr*, *ntlnlsr*, *lnatresr*, *nperfv*, *nclnlsr*, and *eqv*, there is no difference in rural and metropolitan community banks.

A significant *p*-value for the test statistic, in this case Pillai's trace $F(11, 353928) = 1486.0$, $p < 0.000$, results in the rejection of Hypothesis 2, which means that metropolitan and rural banks do differ based on the selected variables. A post-hoc linear discriminant analysis, as suggested by Field (2009), provides insight into how metropolitan and rural banks differ on these variables. Univariate t-test for difference in the group means, with Bonferroni correction, for each performance variable provide results for hypotheses 3 through 12a. In addition, using *roaptx* as the dependent variable, a pooled cross-sectional regression of the remaining variables using Ordinary Lease Squares (OLS), and a cross-sectional time series model including *roaptx* lagged using OLS, provide insight into how the independent variables contribute to profitability in rural and metropolitan community banks.

Based on the SCP literature and dominant bank hypothesis, given the lower HHI in metropolitan areas and the presence of branches of large nationwide banks and large regional banks in the metropolitan areas one would expect community banks in metropolitan areas to have to pay higher rates on deposits and charge lower rates on loans. A lower HHI indicates less concentration and more competition.

Hypothesis 3: Net interest margins of metropolitan community banks will be lower than net interest margins of rural banks.

Hypothesis 4: Pretax return on assets of metropolitan community banks will be lower than pretax return on assets of rural banks.

Hypothesis 5: Return on equity of metropolitan community banks will be lower than return on equity of rural banks.

Based on the arguments that FDIC insurance functions as a put option and increased competition leads to lower charter value that causes bank shareholders to put less of their own capital at risk (Keeley, 1990; Merton, 1997). Reported in the FDIC dataset as equity capital as a percent of total assets (eqv), also referred to in the literature as capital to asset ratio (CAR), it should be lower in community banks operating in metropolitan areas,

Hypothesis 6: Equity capital to assets of metropolitan community banks will be lower than equity capital to assets of rural banks.

A riskier loan portfolio would result in an increased number of loan defaults, which would lead to repossessions, the number of loan clients being behind on loan payments, the number of net charge-offs, and the need for higher loan loss allowances. Based on the increased competition in metropolitan areas and the dominant bank and cherry picking hypotheses, metropolitan community banks will have more noncurrent assets, more noncurrent loans, more net charge-offs, and higher loan loss allowances than community banks in rural areas.

Hypothesis 7: The ratio of noncurrent assets of metropolitan community banks will be higher than noncurrent assets of rural banks.

Hypothesis 8: The ratio of noncurrent loans of metropolitan community banks will be higher than noncurrent loans of rural banks.

Hypothesis 9: The ratio of net charge-offs of metropolitan community banks will be higher than net charge-offs of rural banks.

Hypothesis 10: The ratio of loan loss allowances of metropolitan community banks will be higher than loan loss allowance of rural banks.

Noninterest expenses are the operating costs of banks. Given that real estate prices, rent, and labor cost in metropolitan areas are higher than in rural counties, community banks in metropolitan areas should have higher noninterest expenses.

Hypothesis 11: The ratio of noninterest expenses of metropolitan community banks will be higher than noninterest expenses of rural banks.

Higher noninterest expenses increase operating cost; however, economies of scale can offset increased operating cost. Community banks in metropolitan areas are on average larger than community banks in rural areas; therefore, it is possible that community banks in metropolitan areas operate more efficiently. A higher FDIC efficiency ratio value indicates relative

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inefficiency (Hays, De Lurgio, Gilbert, 2009); therefore, if economies of scale offset the higher operating costs, community banks in metropolitan areas will have a lower FDIC efficiency ratio.

Hypothesis 12: Metropolitan community banks will be more efficient than rural community banks.

However, if the size of community banks in metropolitan areas is not sufficient to offset the higher operating costs then community banks in rural areas have a low cost advantage that leads to greater operating efficiency. Therefore an alternative hypothesis is:

Hypothesis 12a: Metropolitan community banks will less efficient than community rural banks.

Given the expressed concerns about the reduction of credit to small businesses over the reduction in the number of community banks through mergers and failures and the dramatic drop in new bank charters, a better understanding of the perceptions of management team members at incumbent banks could provide valuable insight into future structural change in the industry. Although historical data provides insight into what has happened, it does not necessarily predict the future. The need for mixed methodology research exists when one data source may be insufficient to understand the phenomena fully (Creswell, & Plano Clark, 2011). In their study of new bank charters from 1980 to 2013, Adams and Gramlich (2014) found a "structural shift to lower levels of bank formation post-crisis. This effect could be due to regulation – suggesting new charters may not rebound when the economy recovers – but there are a number of other

plausible explanations" (p.4). Porter (1980) suggests that the intensity of rivalry can vary significantly. In highly concentrated markets, there may be intense rivalry between only a few firms or there may be gentleman-like competition. Both rural and metropolitan bank markets are concentrated relative to other industries; however, metropolitan markets are less concentrated and community banks are competing against dominant bank rivals, often-labeled *megabanks* by practitioners and business news pundits. Based on the SCP paradigm, the competition-fragility literature, and dominant bank hypothesis, given the lower HHI in metropolitan areas:

> Hypothesis 13: Management team members of community banks in metropolitan areas will rate the level of competitive intensity significantly higher than management team members of community banks in rural counties.

It is reasonable to assume that large nationwide and regional banks would seek to increase the size of the bank's deposit base and loan portfolio. A good strategy to pursue might be to seek out, or in other words *cherry pick*, large depositors and large credit-worthy commercial clients of the smaller locally-owned banks and entice them to move their accounts.

> Hypothesis 14: Management team members of community banks in metropolitan areas will indicate a significantly higher level of cherry picking activity than management team members of community banks in rural counties.

During the interview portion of the research, all management team members working in metropolitan community banks brought up the difficulty of getting their message to potential

new customers. Although each person phrased the issue somewhat differently, one individual summarized it quite well, "It is like whispering at a rock concert when every 10 minutes there is an advertisement on the TV or radio from Bank of America, Chase, or Wells Fargo. How do you compete with that?"

> Hypothesis 15: Compared to management team members in rural community banks, management team members of community banks in metropolitan areas will rate their marketing capabilities significantly lower than the marketing capabilities of competitors in their service area.

Empirical evidence suggests that a merger of banks with strategic similarity leads to post-merger gains in performance due to the matching of managerial skills and competencies adding value (Ramaswamy, 1997). As a result, community banks in metropolitan areas would arguably view mergers with other community banks as a strategy to continue to leverage the relationship lending technology while at the same time moving toward economies of scale in administrative functions, regulatory compliance, and information technology to compete better with large banks.

> Hypothesis 16: Management team members of community banks in metropolitan areas will view the likelihood of merger in a 5 to 10 year timeframe significantly higher than management team members of community banks in rural counties.

The decline of new bank charters in recent years and the virtual absence of new bank charters since the financial crisis are troubling given the role new banks play in financing small

businesses. Although Adams & Gramlich (2014) find that new bank charters correlate positively with interest rates, the decline in the number of small banks through merger and failure gives cause to believe that the competitive landscape is so hostile, particularly in metropolitan areas, that incumbent management team members no longer view starting a new bank as a profitable venture.

> Hypothesis 17: Management team members of community banks in metropolitan areas will view the success of starting a new bank in their market when interest rates return to historical norms significantly lower than management team members of community banks in rural counties do.

However, given the increased cost of regulatory compliance and information systems implementation and support, management team members of community banks may view the success of a new bank charter in their market as unlikely because of the inability to draw sufficient business away from incumbent banks to overcome the high startup cost. Therefore, the alternative is:

> Hypothesis 17a: No significant difference exists in how management team members at community banks in metropolitan and rural areas view the likely success of a new bank charter in their market.

Finally, the important implications of the findings of this study relate to the potential decline in the ability of entrepreneurs, especially those involved in microenterprises, to have

access to debt financing. This is important because microenterprises employ the majority of people in the US and make a very significant contribution to new job creation. Previous research has clearly established the importance of community banks, especially smaller community banks, in providing financing to small businesses in the US. All banks must manage risk in their loan portfolio. The empirical evidence is clear that new and very small businesses are at greater risk of failing or closing for some reason, even if it does not meet the strict definition of failure (Shane, 2008). To offset these riskier loans, banks must have less risky loans in the loan portfolio. If community banks in metropolitan areas lose the more credit-worthy commercial clients to nationwide and regional banks, then it would inhibit their ability to extend loans to the new business startups and the less transparent small businesses.

> Hypothesis 18: Management team members at community banks in metropolitan areas will indicate that competition for the most credit-worthy clients results in less lending to new businesses and the less financially transparent small business.

The mixed methodology approach of using secondary data and survey data provides a unique perspective on the competitive environment of community banking in the US. Hypotheses 1 through 12a use secondary data from the FDIC from 2000 through the end or 2014. Hypothesis 1 evaluates the difference in failure rates between banks in rural and metropolitan areas. A significantly higher failure rate in metropolitan areas provides evidence supporting the competition-fragility view that increased competition does lead to increased bank failures. Hypotheses 2 through 12a examine bank performance based on variables associated with bank profitability. By examining the data not only for the entire period 2000-2014, but also

for the pre-crisis sub-period 2000-2006, the crisis period 2007-2009, and the post-crisis period 2010-2014, we observe how these values changed for both rural and metropolitan community banks as the macroeconomic environment changed. Finally, Hypotheses 13 through 18 evaluated survey data collected from practicing community bankers. This provides valuable insight into the perceptions practitioners have about the current environment and events in the near future.

CHAPTER III

METHODOLOGY

This is a mixed methodology study (e.g., Creswell, & Plano Clark, 2011; Creswell, Plano Clark, Gutmann, & Hanson, 2003; Tashakkori & Teddie, 1998). Creswell (2003) defines mixed methodology as "collection or analysis of both quantitative and qualitative data in a single study" (p. 212). The need for mixed methodology research exists when one data source may be insufficient to understand the phenomena fully (Creswell, & Plano Clark, 2011). The phenomena in this case are the decline in the number of community banks and the lack of new bank charters in recent years. While the secondary data on bank failures and bank performance can provide a general understanding of the problem, qualitative data can provide additional insight on current issues and possible future directions. For example, Adams and Gramlich (2014) provide a valuable insight into the history of new bank charters, the correlation with economic conditions and interest rates, and the dramatic decline and structural break in the data; however, the secondary data cannot provide insight into how incumbent bank managers view the likely success of starting a new bank. In this study, the analysis of the secondary data provides insight into how metropolitan community banks and rural community banks differ in terms of performance. Information from semi-structured interviews enhances the understanding through interpretation of the human experience as lived by the experiencer (Mayoh & Onwuegbuzie, 2015). Finally, an online survey gathers data on community bank management team members'

perceptions using measurement scale instruments selected, modified and developed using the insight gained from the interviews and extant literature.

Secondary Data Analysis

The secondary data used in this study consists of the FDIC Failed Bank Report and panel data from the quarterly Performance and Conditions Ratios reports from the FDIC Statistics on Depository Institutions (SDI). Both cover January 1, 2000 through December 31, 2014. I identified the location of each bank on the Failed Bank Report and verified if it was located in a metropolitan or a rural county. Given that distribution of rural community banks to metropolitan community banks is 49.5% to 50.5% respectively, I used the binominal test for Hypothesis 1.

I constructed the SDI dataset by combining the files from the FDIC website for each quarter. I examined the SDI data and found extreme outliers and some missing data existed, likely related to failed banks. I *Winsorized* the data by replacing the outliers with the values reflected at the 1% and 99% levels. I identified that some the variables in the dataset contained three to eight observations with missing data. These errors appeared randomly distributed throughout the dataset. Although these were irrelevant given that there were over 300,000 observations, I replaced the missing data with the mean for the variable. The research is limited to community banks using the guidelines from the FDIC Community Banking Study (2012, Appendix A), and I identified community banks operating in metropolitan statistical areas (MSA) and rural counties and coded them accordingly. This study focuses on individual banks; therefore, bank holding companies are not included. The profitability variable will be pre-tax return on assets (*roaptx*) because about one-third of small banks operate as Type-S, pass through, corporations and do not pay income tax at the corporate level. Given that combined state and

federal corporate income taxation can approach 40%, comparing community banks on post-tax

Return on Assets (ROA) or Return on Equity (ROE) could lead to questionable conclusions.

MANOVA

Multivariate Analysis of Variance (MANOVA) is the appropriate method for comparing

groups with multiple dependent variables because the variate maximizes the difference across

groups and addresses the problem of inflating the Type I error rate when making a series of *t*

tests of group means across several dependent measures (Hair, Black, Babin, Anderson, 2010).

The analysis compares community banks operating in metropolitan versus rural counties using

the FDIC variables *roaptx*, *nimy*, noniiay, *nonixay*, *eeffr*, *ntlnlsr*, *lnatresr*, *nperfv*, *nclnlsr*, and

eqv (see Table I) described in Chapter II as dependent variables in the MANOVA. Although a

statistically significant difference is expected, the default hypothesis for MANOVA is that there

is no difference between the groups. Therefore, a significant result means that one must reject the

default hypothesis of no difference and post-hoc analysis provides insight into how the two

groups differ.

Table I. FDIC Performance Variables		
Variable	FDIC Description	Abbreviation
nimy	Net interest margin	Net Int Mar
roaptx	Pretax return on assets	Ptx ROA
roe	Return on equity	ROE
eqv	Equity capital to assets	CAR
nperfv	Noncurrent assets plus other real estate owned to assets	NonCur Asts
nclnlsr	Noncurrent loans to loans	NonCur Lns
ntlnlsr	Net charge-offs to loans	ChrgOffs
lnatresr	Loss allowance to loans	LnLoss Alw
nonixay	Noninterest expense to average assets	NonInt Exp
eeffr	Efficiency ratio	Effcy
Variables come from the Performance and Conditions Ratios reports from the FDIC Statistics on Depository Institutions		

The Post-hoc analysis consists of linear discriminant analysis and univariate t-tests for differences of the means on each of the dependent variables as suggested by Field (2009). Discriminant analysis is useful in determining whether statistically significant differences exist between the average score profile on a set of variables for two or more a priori defined groups and determining which of the variables most account for the differences in the average score profile (Hair, Black, Babin, & Anderson, 2010)). In addition, using *roaptx* as the dependent variable, a pooled cross-sectional regression of the remaining variables using Ordinary Least Squares (OLS), and a cross-sectional time series model including *roaptx* lagged using OLS, provides insight into how the independent variables contribute to profitability in rural and metropolitan community banks. For the purposes of testing the hypotheses, the MANOVA and univariate t-tests include the entire period from 2000 through 2014. The results of these analysis plus the OLS regressions for sub-periods 2000 through 2006, 2007 through 2009, and 2010 through 2014 are included to provide insight into how metropolitan and community banks differed during these periods. These sub-periods cover the period leading up to the 2007 to 2009 economic crisis, the crisis period, and the post-crisis.

Ordinary Least Squares Regressions

The methodology for the OLS regressions in this study follows that used by Goddard, Molyneux, and Wilson (2004a) to analyze profitability of banks in different European Union nations; however, I include the additional variables related to loan loss and efficiency utilized in the MANOVA analysis. While the MANOVA and discriminant analyses provide evidence as to community banks in rural and metropolitan areas being different based on the selected variables, OLS regression is informative as to how selected variables contribute to the profitability,

measured by pretax return on assets, and allow for comparison. This information is informative

and not used to test any of the hypotheses in this study. The content of the model is as follows:

$$\prod_{i,t} = f\,(\prod_{i,t\text{-}4}\,,\,a_{i,t},\,b_{i,t},\,c_{i,t}\,,\,d_{i,t},\,e_{1,i},\,f_{i,t},\,g_{i,t}\,,\,h_{i,t},\,j_{i,t},\,s_{i,t},\,m_i) \tag{1}$$

Where $\prod_{i,t}$ is the profit of bank i in year t, as measured by pre-tax return on assets (*roaptx*); $a_{i,t}$

is the net interest margin (*nimy*), $b_{i,t}$ is noninterest income (*noniiay*), $c_{i,t}$ is the capital to asset

ratio (*eqv*), $d_{i,t}$ is noncurrent assets (*nperfv*), $e_{i,t}$ is noncurrent loans to loans (*nclnlsr*), $f_{i,t}$ is net

charge-offs to loans (*ntlnlsr*), $g_{i,t}$ is loss allowance to loans (*lnatresr*), $h_{i,t}$ is noninterest expense

(*nonixay*), $j_{i,t}$ is the efficiency ratio (*eeffr*), and $s_{i,t}$ is the natural log of the average five years of

total assets (*lnasset*), $s_{i,t}$ is the natural logarithm of total assets average over the preceding five

years (lnassets), and $m_i = 1$ for metro and $m_i = 0$ for rural. The inclusion of $s_{i,t}$ captures any

relationship between bank size and profitability. Following the SCP literature, a positive sign

may indicate that large community banks may benefit from economies of scale or scope or they

may benefit from brand image. In the alternative, a negative sign may indicate that size results in

diseconomies of scale.

Since deregulation began, banks have increased revenue via noninterest income

generated through fees for services and various contingent liabilities such as letters of credit, and

other non-traditional banking activities including operations in the forward and futures markets

(e.g., DeYoung, & Rice, 2004; Stiroh, 2004, 2006). Overdraft fees have become an important

source of income for US banks (Andriotis, 2014, 2015). In fact, some banks have developed a

strategy where overdraft fees provide more income than interest from loans (Maremont &

McGinty, 2014a, 2014b). Although regulatory filings do not breakout fee income specifically,

FDIC variable *noniiay,* some estimate that overdraft fees may make up as much as 75% of fee

income for US Banks (Maremont and McGinty, 2014a, 2014b).

Goddard, Molyneux, and Wilson (2004a) argue that capital to asset ratio (CAR) is a crude proxy for risk; however, the competition-frailty view argues that less CAR contributes to profitability while the lower deposit insurance premium view argues that higher CAR results in greater profitability. Nonetheless, the goal of this study is not to resolve these differences but to understand the factors that contribute to bank profitability in community banks operating in rural and metropolitan areas better. By including the variables related to loan loss provisions, nonperforming assets, and loan write offs, I provide alternative measures for risk.

The pooled cross-sectional time-series structure of the data set enables the estimation of several variants of the relationship summarized in (1).

Pooled cross-sectional time-series model, estimated using OLS

$$\prod_{i,t} = \alpha_1 + \alpha_2 \prod_{i,t-4} + \alpha_3\, a_{i,t} + \alpha_4\, b_{i,t} + \alpha_5\, c_{i,t} + \alpha_6\, d_{1,i} + \alpha_7\, e_{i,t} + \alpha_8\, f_{i,t} + \alpha_9\, g_{i,t} + \alpha_{10}\, h_{1,I} + \alpha_{11}\, j_{i,t} + \alpha_{12}\, s_{i,t} + u_{i,t} + m_i$$

$$i = 1, \ldots\ldots N, \; t = 2 \ldots\ldots T \tag{2}$$

Cross-sectional model, estimated using OLS

$$\prod_{i,t} = \beta_1 + \beta_2\, a_{i,t} + \beta_3\, b_{i,t} + \beta_4\, c_{i,t} + \beta_5\, d_{1,i} + \beta_2\, e_{i,t} + \beta_3\, f_{i,t} + \beta_4\, g_{i,t} + \beta_5\, h_{1,i} + \beta_4\, j_{i,t} + \beta_5\, s_{1,i} + w_{i,t}$$

$$i = 1, \ldots\ldots N \tag{3}$$

Following the methodology used by Goddard, Molyneux, and Wilson (2004a), the pooled model, equation (2) relies on the assumption that cross-sectional variation (between banks) in any independent variable has the same implication for profit variation over time in that variable for an independent bank. Based on the Akaike Information Criterion (AIC) a lag of four is appropriate for the dependent variable *roaptx*. Given that, the data is quarterly, the lag amounts to one year. Equation (3) is the cross-sectional model, which estimates the profitability equation as a relationship between the individual bank mean values of all variables. The computation of

the individual bank means eliminates any variation for an individual bank (or *within bank variation*) over time. Because there are no dynamics in Equation (3), I omit the lagged profit variable (roaptx). The null hypothesis of the Sargan test that the over-identifying restrictions are valid were rejected for the FDIC panel data; therefore, they are not valid. The Arellano-Bond test for zero autocorrelation in first-differenced errors revealed evidence of misspecification for the FDIC panel regressions. As a result, the dataset is not suitable for dynamic panel estimation.

Interviews

The purpose of the interview stage was educational in nature and intended to provide insight from frontline practitioners about the issues concerning community bankers. Creswell (2005, p. 203) states, "In qualitative inquiry, the intent is not to generalize to a population, but to develop an in-depth exploration of a central phenomenon." Therefore, the researcher "purposefully or intentionally selects individuals and sites" (p. 203). When implementing purposeful sampling, the researcher selects people or sites that can best help them understand the central phenomenon (Creswell, 2005). Qualitative research methods such as interviews and observation suffer from limited sample sizes due to limited collection opportunities and time and resource constraints; therefore, it is also reasonable to believe that using the limited observations to infer general propositions can lead to false conclusions.

The inductive approach to scale development requires that a researcher is knowledgeable in practice and lingo of the industry and often involves asking practitioners questions about their organization or some aspect of behavior (Hinkin, 1995). The interviews were semi-structured in that I asked predetermined questions developed from a review of the extant academic literature, government research, the business press, and results of the secondary data analysis. In semi-

structured interviews, the researcher may ask follow-up questions if needed to better understand the response. Semi-structured interviews are relatively open, flexible with the logic being to generate data interactively (Mason, 2004). See Appendix A for the list of interview questions based on the literature review. The subjects were 11 male and 4 female officers, branch managers, board of director members, or loan officers at community banks ranging in age from 24 to 62. I recruited 11 participants through personal contacts and by personally visiting bank branches in rural and metropolitan areas in Texas and Kentucky. I contacted additional participants in metropolitan areas outside of Texas and Kentucky by mailing a letter to the bank president and asking them to contact me for a brief telephone interview, all four that responded were male. The letter to the bank president described the subject of the study and included the interview questions and the informed consent form.

I provided bankers who volunteered to participate with a copy of the informed consent document in person or by mail and the interview questions as an interview guide before the interview. The interviews occurred in person or by telephone. I took notes and, following the guidelines approved by the Institutional Review Board (IRB), did not record the interviews. As soon as possible after the interview, I wrote down additional information that time did not allow during the interview. Although no clearly defined procedures for analysis of interview data exist, it is inductive in form, going from the particular to the general (Creswell, 2005) and there are general guidelines (Dey, 1993; Miles, Huberman, & Saldaña, 2014). I performed a qualitative analysis (Schmidt, 2004) to identify similarities and differences in the responses from participants and coded the data to build descriptions and themes (Creswell, 2005). The themes were easily identifiable due to the surprising similarity of the interviewees' responses.

Online Survey

Previous studies have measured managers' perception of competitive intensity (e.g., Auh & Menguc, 2005; Jaworski & Kohli, 1993; O'Cass and Ngo, 2007; O'Cass, & Weerawardena, 2010; Pecotich, Hattie, and Low; 1999); however, they measured competitive intensity in industrial firms and many of the instrument items, for example, items related to supply chain, are not suited for the banking industry. Drawing from information uncovered in the interviews with banking industry practitioners, I selected appropriate items from the aforementioned competitive intensity instruments and modified them to fit the banking industry practice and terminology. Comments from community bankers in metropolitan areas indicated effective marketing was an issue; therefore, I also selected and modified items measuring marketing capabilities (Weerawardena, 2002).

Based on the academic literature, business press, and government research, areas of concern in the community banking industry include small business lending, the number of mergers and acquisitions taking place, and the dramatic decrease in the number of new bank charters. Extant research also indicates that, large banks are better suited for dealing with hard data like credit history and credit scores, large banks tend to take more of a *cookie cutter* approach to business lending (Berger, Demirgüç-Kunt, Levine, & Haubrich, 2004; Cole, Goldberg & White; 2004). Therefore, to grow it is likely that large nationwide and regional banks would actively seek to attract the most credit-worthy clients and larger established business borrowers away from smaller banks. The approach to developing scale items combined deductive and inductive approaches (Hinkin, 1995). The deductive approach relied on previous survey instruments from the marketing literature, which I adapted to this context, as well as developing individual measurement items based on findings in recent studies on community

banking such as the 2012 FDIC Community Banking Study and Adams and Gramlich (2014).

Based on information uncovered in the interviews, I followed DeVellis (2003), and created scale

items addressing small business lending (SBL), new bank startup (NB), merger and acquisitions

(MA), and cherry picking of clients (CP). I asked content area experts and community bank

practitioners to review the scale items. I also asked three additional community bank

practitioners to explain to me their perception of what each proposed item was attempting to

measure and why it would be relevant. After evaluating this feedback, the initial survey items

consisted of seven items measuring competitive intensity, six items measuring marketing

capabilities, four items measuring small business lending, five items measuring new bank

startups, seven items measuring merger and acquisition, and five items measuring the cherry

picking of large depositors and credit-worthy clients by large banks. See Appendix B for the

items included in the final survey instrument.

Pilot Study

I entered the scale items into the Qualtrix online survey software. There were seven

demographic questions collecting information on the banks' size in terms of total assets, the

number of branches, the state and county they were located in, if there were large nationwide or

regional banks serving their market, and if they participated in Small Business Administration

loan programs and home mortgage lending. I randomly sorted the remaining 34 survey items and

entered them after the demographic questions. All measurement scale items had a sliding scale

tool ranging from 0 to 100 for participants to record the participant's agreement or disagreement.

At the end of the survey I included a comment section for participants to provide feedback if

they desired.

To facilitate access, I created a website, www.communitybankstudy.org. I also reserved the .com and .net extensions and directed them to the .org address. This site contained a hyperlink that took participants to the online survey URL provided by Qualtrix that contained randomly generated numbers and letters. I created a full color one-page handout explaining the study and asking participants to visit the website and take the survey. Using names that I gathered from community bank websites in Texas, I mailed the handout to 120 bank administrators, loan officers, or branch managers. I then personally visited community bank branches in the metropolitan areas of the Rio Grande Valley, Odessa, Midland, and San Antonio, Texas and community banks in rural counties in between those metropolitan areas to ask for participation in the pilot study. Concurrently, a family member visited banks in Kentucky to request participation in the pilot study. In just over one week, 48 persons completed the survey.

To avoid repetition, I performed the same steps in this preliminary analysis of the pilot study data as are explained in the analysis on the data from the nationwide survey in the next section. I provide detailed results in the next section because those results provide the support for the use of these scales in testing the corresponding hypotheses. Following the procedures in Hair, Black, Babin, and Anderson (2010) and Field (2009), I conducted a principal component analysis (PCA) with promax rotation on the items from the competitive intensity (CI) and marketing capabilities (MC) scales. Because real world factors are correlated (Cattell, 1987), I used an oblique rotation method. A review of component loadings and cross-loadings resulted in the elimination of one item from each scale. Reevaluation of the reduced scales identified two components that had eigenvalues over Kaiser's criterion of 1.0. I then performed a confirmatory factor analysis (CFA) on the CI and MC scales. I calculated the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, Cronbach's Alpha, and used squared multiple correlations of the

standardized factor loadings to determine the Average Variance Extracted (AVE). I also

conducted PCA with promax rotation on the items I developed for Small Business Lending

(SBL), Merger and Acquisition (MA), New Bank startup (NB), and Cherry Picking (CP). A

review of component loadings and cross-loadings resulted in the elimination of four items from

the merger and acquisition scale and one item from the cherry picking scale. Reevaluation of the

reduced scales identified four components with eigenvalues over Kaiser's criterion of 1.0. I then

performed a CFA on the SBL, MA, NB, and CP scales and calculated the KMO, Cronbach's

Alpha, and AVE. I then removed the deleted items from the online survey software in

preparation for the nationwide survey.

Nationwide Survey

With the help of family members, we visited community bank websites and collected

email addresses for bank officers, branch managers, and loan officers. We also collected *Contact*

Us email addresses from bank websites that provided them instead of a contact form on the

website. The FDIC panel data contains the website address for all member banks that have

websites. I divided the dataset into rural and metropolitan tables, randomly sorted each, and then

divided each group into three tables. We used two tables from each group to collect email

addresses and collected 1,201 email addresses. From the third table from each group, we created

a mailing list for postal mail generically addressed to the president of the bank. I contracted with

a company specializing in bulk-mail marketing to print a full color envelop with the study

website predominately displayed on the front in University of Texas System orange and a request

for someone at the bank to participate in the study. The envelope contained a letter fully

explaining the survey, including the required IRB information. Initially we mailed envelopes to

255 rural and 255 metropolitan banks beginning on a Friday expecting them to begin arriving the following Monday with the majority to have arrived by Wednesday. The minimum for a bulk-rate mailing is 250; therefore, I provided the firm address data files containing 255 in the event a few of the addresses did not clear the postal service verification system as deliverable addresses. The postal service returned only two envelopes; therefore, the assumption is that the remaining 1,018 envelopes reached the intended bank. I divided the individual email addresses we collected into four email distribution panels and began sending them the Monday that the envelopes began arriving. I created an email distribution panel for the *Contact Us* email list and at the beginning of the text of the email requested that the reader forwarded the email to bank administrators and loan officers. I also emailed the president of the Independent Community Bankers of America, the industry lobbying organization in Washington D.C., with whom I had spoken previously, and emailed banker associations in all 50 states asking them to forward information to community bank members via their member email list and request that the members visit the study website and complete the survey. After seeing the response rate from the initial emails and mailings on Thursday of the first week, we mailed additional envelopes to another 255 rural and 255 metropolitan banks. In the second week, I sent reminder emails to those emailed the previous week. At the beginning of the second week, more metropolitan banks had participated than rural banks. Therefore, I selected 100 additional rural banks, visited websites to obtain the name of the president, and sent individually addressed envelopes and letters requesting them to participate in the survey. In total, 257 participants from 48 states completed surveys, 150 from metropolitan areas and 107 from rural areas. Arguably, metropolitan community bankers are experiencing greater levels of competitive intensity and more motivated to voice their opinions. There were 32 incomplete surveys, the majority of these entered the survey but did not complete any items.

Eight completed surveys had data missing from an item. The online survey was smartphone compatible. Participants who received the email on his or her smartphone could easily touch the hyperlink in the email and go to the survey. During our trials on different models of smartphones, we found that it was rather easy to accidently touch the >> icon to go to the next item without recording a value. This is a likely explanation and the missing data appeared random in nature. In all cases, the participant has responded to the other items in that scale so there did not appear to be any objection to the content of the item. I used the following imputation method to address the missing data. I evaluated the participant's difference from the study mean for each of the other indicators in that scale and averaged them. I then calculated a value that was of equal difference from the mean for the missing item. Before proceeding with the analysis, I transformed the reverse-coded items.

Because there is no way to tell how many people the bank associations contacted about the study, it is impossible to have an accurate estimate of the response rate. Given that I contacted 2,321 individuals directly via email and postal mail, at a maximum, it is approximately 10% but may be 5% or less given that potentially individuals at over 5,000 banks received information about the survey and multiple persons at one bank may have been on the email distribution list. Both email and postal mail directed recipients to the www.communitybankstudy.org website; therefore, it is not possible to determine the response rate of those emailed directly versus those who received an envelope or email from banker associations.

Following the suggestion of Hair, Black, Babin and Anderson (2010), I conducted PCA again with promax rotation on the items from the CI and MC scales again. The KMO = 0.902 is in the outstanding range for sampling adequacy (Field, 2009). KMO exceeded the minimum

level of 0.50 on all individual items. Bartlett's test of sphericity X^2 (55) = 1971.463. p<0.001, indicated that correlations between items were sufficiently large for PCA. Two components had eigenvalues over Kaiser's criterion of 1.0 and in combination explained 71.68% of the variance. I then performed CFA. Using squared multiple correlations of the standardized factor loadings CI = 0.943 AVE and MC = 0.929 AVE. Cronbach's Alpha was α = 0.91 and α = 0.91 respectively.

I also conducted PCA again with promax rotation on the items I developed for SBL, MA, NB, and CP. The KMO = 0.795 is in the acceptable range for sampling adequacy (Field, 2009). KMO exceeded the minimum level of 0.50 on all individual items. Bartlett's test of sphericity X^2(136) = 1515.047. p<0.001, indicated that correlations between items were sufficiently large for PCA. Four components had eigenvalues over Kaiser's criterion of 1.0 and in combination explained 57.54% of the variance. I then performed a CFA. Using squared multiple correlations of the standardized factor loadings SBL = 0.936 AVE, MA = 0.906 AVE, NB = 0.722 AVE, and CP = 0.901 AVE. Cronbach's Alpha was α = 0.677, α = 0.603, α = 0.641, and α = 0.813 respectively. AVE and Cronbach's Alpha are indicators of convergent validity and values greater than AVE = 0.50 and α = 0.60 are acceptable. As an additional measure, I executed a t-test for mean differences between the pilot study and the national study on each of the six scales; there was no significant difference between the means on each of the six scales. The results of these analyses indicate that these six scales are suitable for use in gathering data to test the related hypotheses.

CHAPTER IV

RESULTS

I present results of the analysis of the secondary data obtained from the FDIC first. These

analyses address Hypotheses 1 through 12a. I then present a synopsis of the information revealed

during the interview stage of the process. The interviews provided insight into the practices and

concerns of community bank practitioners and aided in the selection, modification, and

development of the items for the measurement scales used in the survey. No hypotheses testing is

directly associated with data collected in the interviews. Finally, the data collected in the online

survey addresses hypotheses 13 through 18a.

Secondary Data Analysis

The secondary data used in this study consist of the FDIC Failed Bank Report and panel

data from the quarterly Performance and Conditions Ratios reports from the FDIC Statistics on

Depository Institutions (SDI). Both cover January 1, 2000 through December 31, 2014. The SDI

data was *Winsorized* by replacing the outliers with the values reflected at the 1% and 99% levels.

I used Multivariate Analysis of Variance (MANOVA) analysis to compare metropolitan and

rural community banks on the multiple dependent variables associated with bank profitability

because the methodology maximizes the difference across groups and addresses the problem of

inflating the Type I error rate (Hair, Black, Babin, & Anderson, 2010). The analysis compared

community banks operating in metropolitan versus rural counties using the FDIC variables

roaptx, *nimy*, noniiay, *nonixay*, *eeffr*, *ntlnlsr*, *lnatresr*, *nperfv*, *nclnlsr*, and *eqv*, described in

Chapters II and III, as dependent variables. The MANOVA and post-hoc discriminant analysis

are useful in determining if there is a statistically significant difference between the groups on

multiple variables; however, it is not sufficient to test the hypotheses related to the secondary

data analysis in this study. Hypotheses testing uses traditional univariate mean comparison t-

tests.

Bank Failure

Based on information from the FDIC Bank Failure Report, of 538 banks that failed from

January 1, 2000 through December 31, 2014 all met the requirements for classification as a

community bank. Only 88 of the 538 (16.3569%) were not located in a metropolitan area. While

it is true that there are significantly more bank branches of both community and large banks in

metropolitan areas, approximately 49.5% of the community banks operating across this period

were located in rural counties, therefore, 83.6431% of bank failures being in metropolitan areas

is significantly different than one would expect by chance (Binominal, p < 0.000001). This

provides strong support for Hypothesis 1 and for the competition-fragility view that an increase

in bank competition leads to an increase in bank failures.

MANOVA

Using Pillai's Trace, $F(11, 353928) = 1486.0$, $p < 0.000$, based on the dependent

variables selected from the FDIC Performance and Condition Report we can reject the default

MANOVA hypothesis of no difference. Therefore, Hypothesis 2 is not supported and MANOVA

indicated that there was a significant difference between community banks operating in

metropolitan areas and community banks operating in rural counties for all periods analyzed

(Table II). This was the expected result of Hypothesis 2. The periods were 2000-2014, pre-crisis

2000-2006, during the crisis 2007-2009, and post-crisis 2010-2014. The results for alternative

MANOVA test statistics, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root, were also

significant at $p < 0.001$.

Table II. MANOVA Results								
Period	Test Statistic	N Metro	N Rural	Value	F	Hypoth df	Error df	Sig.
2000-2014	Pillai's Trace	178417	175523	0.044	1486.0	11	353928	***
2000-2006	Pillai's Trace	78845	87298	0.047	743.5	11	166131	***
2007-2009	Pillai's Trace	34540	31221	0.068	438.0	11	65749	***
2010-2014	Pillai's Trace	65032	57004	0.064	755.0	11	122024	***
Significance: *** 1% level, ** 5% level, * 10% level								

The post-hoc Linear Discriminant Analysis classified 58.8%, 59.8%, 61.3%, and 60.2%

of the cases into metropolitan or rural areas correctly for the 2000-2014, 2000-2006, 2007-2009,

and 2010-2014 periods respectively. The discriminant function significantly differentiated the

metropolitan and rural community banks in all periods with Wilk's lambda $p < 0.001$. Table III

contains the standardized canonical discriminant function coefficients. These are equivalent to

the standardized betas in regression (Field, 2009) and the variables with high correlations

contribute most to group separation (Bargman, 1970). However, the standardized canonical

discriminant function coefficients are not comparable to the coefficients in the Ordinary Least

Squares (OLS) regression discussed later. The canonical discriminant function coefficients relate

to determining what separated groups on all variables including the dependent variable roaptx in

the OLS regression whereas in the OLS regression all the remaining variables are regressed on

roaptx.

Table III. Standardized Canonical Discriminant Function Coefficients					
Variable	Description	2000-2014	2000-2006	2007-2009	2010-2014
nimy	Net interest margin	-.497	.354	-.431	-.595
noniiay	Noninterest income	.047	-.194	.048	-.298
roaptx	Pretax return on assets	.147	-.559	-.213	.543
roe	Return on equity	-.454	.535	-.296	-.672
eqv	Equity capital to assets	-.074	.148	.012	.031
nperfv	Noncurrent assets plus other real estate owned to assets	.174	.148	.038	.681
nclnlsr	Noncurrent loans to loans	.171	.209	.575	-.242
ntlnlsr	Net charge-offs to loans	.187	-.007	.184	.128
lnatresr	Loss allowance to loans	-.396	.454	-.344	-.072
nonixay	Noninterest expense to average assets	.652	-.510	.283	.960
eeffr	Efficiency ratio	.079	-.399	.348	-.200
	Percent classified correctly	58.70%	60.20%	61.20%	61.70%

With the MANOVA and discriminant analysis providing strong evidence that

metropolitan and rural community banks are significantly different based on the selected

variables, univariate t-test on the mean differences, with Bonferroni correction, are appropriate to

test the hypotheses related to the secondary data. The univariate analysis results in Table IV

provide insight into which variables metropolitan and rural community banks differ on across the

entire period and each sub-period. Only the capital to asset ratio (*eqv*) in the pre-crisis period and

the loan loss allowance (*lnatresr*) during the crisis are not significantly different.

Table IV. Univariate Results		2000-2014			2000 - 2006			2007-02009			2010 - 2014		
FDIC Var	Location	N	Mean		N	Mean		N	Mean		N	Mean	
H3 Net Int Mar	Rural	175523	3.9958		87298	4.1428		31221	3.9652		57004	3.7873	
1-tail M<R	Metro	178417	3.8747	***	78845	4.0677	***	34540	3.7265	***	65032	3.7193	***
NonInt Incm	Rural	175523	.6692		87298	.6947		31221	.6782		57004	.6254	
	Metro	178417	.7210	***	78845	.7753	***	34540	.6557	***	65032	.6898	***
H4 Ptx ROA	Rural	175523	1.3327		87298	1.4363		31221	1.6113		57004	1.0216	
1-tail M<R	Metro	178417	.9487	***	78845	1.2190	***	34540	.8765	***	65032	.6593	***
H5 ROE	Rural	175523	9.6639		87298	11.1461		31221	8.1185		57004	8.2404	
1-tail M<R	Metro	178417	6.7294	***	78845	9.6634	***	34540	3.7611	***	65032	4.7487	***
H6 CAR	Rural	175523	11.0820		87298	11.0681		31221	11.0878		57004	11.1003	
1-tail M<R	Metro	178417	11.1083		78845	11.0384	*	34540	11.4346		65032	11.0198	***
H7 NonCur Asts	Rural	175523	1.1762		87298	.7871		31221	1.3828		57004	1.6590	
1-tail M>R	Metro	178417	1.5333	***	78845	.6418		34540	1.7268	***	65032	2.5115	***
H8 NonCur Lns	Rural	175523	2.9305		87298	1.0886		31221	10.0332		57004	1.8611	
1-tail M>R	Metro	178417	3.6041	***	78845	.8433		34540	11.6666	***	65032	2.6690	***
H9 ChrgOffs	Rural	175523	1.6391		87298	.2033		31221	8.0160		57004	.3453	
1-tail M>R	Metro	178417	2.2696	***	78845	.1715		34540	10.2951	***	65032	.5507	***
H10 LossAlw	Rural	175523	2.4398		87298	1.4580		31221	6.6489		57004	1.6379	
1-tail M>R	Metro	178417	2.5367	***	78845	1.2580		34540	6.8410	*	65032	1.8011	***
H11 NonInt Exp	Rural	175523	2.9418		87298	2.9777		31221	2.9795		57004	2.8662	
1-tail M>R	Metro	178417	3.2120	***	78845	3.2398	***	34540	3.2240	***	65032	3.1719	***
H12 Effcy	Rural	175523	65.9680		87298	64.5658		31221	61.7393		57004	70.4313	
1-tail M<R	Metro	178417	72.9851		78845	70.2408		34540	70.4892		65032	77.6379	
H12a Effcy	Rural	175523	65.9680		87298	64.5658		31221	61.7393		57004	70.4313	
1-tail M>R	Metro	178417	72.9851	***	78845	70.2408	***	34540	70.4892	***	65032	77.6379	***

Significance: *** 1% level, ** 5% level, * 10% level

The *p* values shown are for the one-tailed test appropriate for the related hypothesis

No hypothesis is directly associated with Noninterest Income, it is included for informational purposes only.

Note that a higher FDIC erriciency value indicates lower operational efficiency.

Unless otherwise stated, the test statistics reported in the following text are for the entire 2000-2014 period, Table IV contains the means and significance levels for the sub-periods. Hypotheses 3, 4, and 5 find support across all periods. This indicates that metropolitan banks have significantly lower, 2000-2014 $t(353938) = 43.97$, $p < 0.000$ (one tail M<R), $d = 0.148$, net interest margins (*nimy*), significantly lower, 2000-2014 $t(353938) = 82.20$, $p < 0.000$ (one tail M<R), $d = 0.276$, pretax returns on assets (*roaptx*), and significantly lower, 2000-2014 $t(353938) = 100.67$, $p < 0.000$ (one tail M<R), $d = 0.338$, returns on equity (*roe*). These results aligned with the competition-fragility view that competition leads to lower net interest margins

and lower profits which could precipitate an increase in bank failures. Although metropolitan community banks had significantly higher, $t(353938) = 26.67$, $p < 0.000$ (one tail M>R), $d = 0.258$, levels of noninterest income, except during the 2007-2009 crisis period, it was not sufficient to boost pre-tax return on assets or return on equity above their rural counterparts. As a result, metropolitan banks provide significantly lower, approximately 30% on average, returns to their shareholders. Given that bank failures are significantly higher in metropolitan areas, investors in metropolitan community banks do not appear to be receiving rewards for the increased risk.

According to the competition-fragility view, a bank charter in an area with less competition is more valuable because less competition results in higher profits. Given that, metropolitan areas, on average, have lower levels of bank concentration, which indicates greater competition, a US metropolitan community bank charter would be less valuable according to the competition-fragility view. If metropolitan community banks are riskier investments then the shareholders should put less of their own capital at risk; hence, viewing deposit insurance as a put option. However, for the entire period 2000-2014, the data indicates that investors in metropolitan community banks had significantly, at the $p < 0.05$ level, $t(353938) = 2.07$, $p = 0.019$ (one tail M>R), $d = 0.007$, more of their own money at risk; hence, the one-tailed hypothesis test (M<R) is not significant, $p = 0.9807$. Therefore, there is no support for Hypothesis 6. This would not align with the competition-fragility literature. Nonetheless, an examination of the data pre-crisis, during the crisis, and post-crisis provides valuable insight. Prior to the financial crisis, metropolitan community bank investors maintained a lower, $t(166141) = 1.52$, $p = 0.064$ (one-tail R>M), $d = 0.007$ equity ratio than their rural counterparts.

During the crisis, the equity ratio in metropolitan banks increased significantly, $t(65759)$ = 10.77, $p < 0.000$ (one tail M>R), $d = 0.084$, $p = 0.981$ (one-tail M<R), above the equity ratio of rural banks, likely due to regulatory pressure and the need to increase equity ratios to cover potential loan losses. Banks must cover loan losses out of equity capital and if a bank becomes undercapitalized regulators and the FDIC take over the bank and the bank investors lose all of their investment. The 0.3468 positive difference in the capital to asset ratio maintained by metropolitan community banks during the two-year crisis period was sufficient to offset the 0.0297 negative difference during the six-year pre-crisis period and 0.0805 negative difference during the post-crisis period. As a result, there is no support for Hypothesis 6 for the 2000-2014 period and the 2007-2009 sub-period.

What may be most interesting is that in the 2010-2014 post-crisis period, the equity ratio of metropolitan community banks falls significantly below, $t(122034) = 4.26$, $p < 0.000$ (one tail M<R), $d = 0.024$, that of rural community banks. It is possible that the loan losses absorbed the additional equity injected during the crisis; loan losses are covered out of shareholder equity. Therefore, Hypothesis 6 does find support during the 2010-2014 post-crisis period. Because of the crisis period experience, metropolitan community bank investors may have become more aware of the risk involved and decided to maintain capital to equity ratios near the minimum level required by regulators. In the four-year post crisis period, the behavior of metropolitan community bank investors appears to be realigning with the competition-fragility view.

There is support for Hypotheses 7 through 10 for the entire period 2000-2014; noncurrent assets (*nperfv*), $t(353938) = 57.56$, $p < 0.000$ (one tail M>R), $d = 0.193$, noncurrent loans (*nclnlsr*), $t(353938) = 16.98$, $p < 0.000$ (one tail M>R), $d = 0.057$, net charge-offs (*ntlnlsr*), $t(353938) = 14.79$, $p < 0.000$ (one tail M>R), $d = 0.05$, and loan loss allowance (*lnatresr*),

$t(353938) = 4.13$, $p < 0.000$ (one tail M>R), $d = 0.014$. These variables relate to loan portfolio risk However, in the pre-crisis period from 2000-2006 rural community banks had higher values than metropolitan community banks on all four of these variables. As a result, there is no support for Hypotheses 7 through 10 for the 2000-2006 period. There is support for Hypotheses 7 through 9 during the 2007-2009 and 2010-2014 periods. There is support during the 2010-2014 post-crisis period for Hypothesis 10, which addresses loan loss allowances; however, during the crisis there was no significant difference, at the $p < 0.05$ level, in loan loss allowances so there is no support for Hypothesis 10 for the 2007-2009 period.

The results for Hypotheses 7 through 10 raise an interesting question. In the pre-crisis period, managers and directors at rural community banks provided higher allowances for loan losses and in fact had a higher ratio of non-performing loans, non-current loans, and net charge-offs. This would not align with the position that higher competition in metropolitan areas leads to metropolitan community banks having higher risk loan portfolios. Because loan loss provisions are subject to managerial discretion under FAS 15 and FAS 114 and actual delinquent loans and write-offs are not, it might be the case that pre-crisis metropolitan community banks did not decide to set aside as much because they did not feel that many loans were at risk. However, the rules for reporting delinquent payments and write offs are, or should be, clearly established. What changed in the loan portfolios of metropolitan community banks that caused them to have more delinquent loans and write offs in the seven years since the crisis began than they did in the six years prior to the crisis? Although it is beyond the scope of this study, future research should investigate why rural banks had riskier loan portfolios from 2000 to 2006 but not after. A comparison of loan types may provide valuable insight; however, data limitations in this study do not permit an analysis of loan portfolio allocations.

Hypotheses 11, 12, and 12a involve variables related to noninterest costs (*nonixay*) and efficiency (*eeffr*). It is again important to note that a lower FDIC efficiency number means a more efficient bank (Hays, De Lurgio & Gilbert, 2009). This is counterintuitive for individuals accustomed to dealing with efficiency ratings in other industries. It is not surprising that Hypothesis 11 finds support for 2000-2014, $t(353938) = 76.72$, $p < 0.000$ (one tail M>R), $d = 0.258$, and in all sub-periods. The cost of doing business in metropolitan areas is more expensive than doing business in rural areas because real estate and wage costs are higher in metropolitan area. Hypotheses 12 and 12a are somewhat related to Hypothesis 11. They deal with the question of economies of scale offsetting the higher cost of doing business in metropolitan areas. It is not surprising that on average the community banks in metropolitan areas are much larger in terms of total assets. This allows for the possibility that the economies of scale that larger banks may achieve can offset the higher cost of doing business in metropolitan areas. Hypothesis 12 does not find support in any of the periods, 2000-2014 $t(353938) = 91.41$, $p = 1.000$ (one-tail M<R) $d = 0.307$. This indicates that the economies of scale that larger metropolitan banks may achieve are not sufficient to offset the higher cost of doing business and the result is a higher FDIC efficiency number, which indicates that a bank is less efficient. Hypothesis 12a does find support in all periods. 2000-2014 $t(353938) = 91.41$, $p < 0.000$ (one-tail M>R) $d = 0.307$. This indicates that the lower cost of doing business in rural areas results in a lower FDIC efficiency number which indicates that rural banks are more efficient than their metropolitan counterparts.

Ordinary Least Squares Regressions

This section reports the results of a cross-sectional model estimated using Ordinary Least Squares (OLS) and a pooled cross-sectional time-series model using OLS. These results provide

insight into how these variables contribute to bank profitability as measured by pretax return on assets (*roaptx*). Pre-tax return on assets are the appropriate measure because approximately one-third of community banks are Type-S corporations, which do not get taxed at the corporate level. I include the natural log of the five-year average of total assets as a measure of bank size. I omitted that variable from the MANOVA and discriminant analysis because the largest community banks are in metropolitan areas. Recall that in MANOVA and discriminant analysis all variables, including *roaptx* are dependent variables. The goal was to determine if variables associated with bank profitability were useful in differentiating metropolitan and rural community banks. The inclusion of total assets overshadowed the other variables in the discriminant function. In the OLS regressions, *roaptx* is the dependent variable and the results indicate how the independent variables, including size, contribute to profitability as measured by pre-tax return on assets. This allows us to determine if size is a significant factor in profitability and if so if it contributes positively or negatively to profitability. I omit return on equity (*roe*) from the OLS regressions because it is highly correlated with the dependent variable, pre-tax return on assets.

The tables provide regression results for the entire period 2000-2014 (Table V) as well as the pre-crisis (Table VI), during the crisis (Table VII), and post-crisis (Table VIII) periods. As explained in the methodology section, the data is quarterly and the Akaike Information Criterion (AIC) indicated that a lag of four was appropriate for the dependent variable, *roaptx,* in the time-series model. Although dynamic panel estimates could provide additional insight, the rejection of the null hypothesis of the Sargan test for the FDIC panel data that the over-identifying restrictions are valid indicates that the dataset is not suitable for dynamic panel estimation. In addition, The Arellano-Bond test for zero autocorrelation in first-differenced errors revealed

evidence of misspecification for the FDIC panel regressions. This provided further evidence that

the dataset is not suitable for dynamic panel estimation.

Table V. 2000-2014 OLS Results							
Cross-Sectional Model using OLS				Cross-Sectional Time-Series Model using OLS			
Var	All	Rural	Metro	Var	All	Rural	Metro
				Ptx ROA.l4	0.0236***	0.0068	0.0331***
				std err	(0.0012)	(0.0015)	(0.0018)
Net Int Mar	0.6292***	0.6618***	0.6125***	Net Int Mar	0.8216***	0.7593	0.8368***
std err	(0.0027)	(0.004)	(0.0039)	std err	(0.0041)	(0.0057)	(0.0059)
NonInt Incm	0.8803***	0.8486***	0.8895***	NonInt Incm	1.1035***	1.0112	1.1169***
std err	(0.0038)	(0.0056)	(0.0053)	std err	(0.0056)	(0.0082)	(0.0077)
CAR	0.0069***	0.0054***	0.0078***	CAR	0.0105***	0.0216	0.007***
std err	(0.0004)	(0.0004)	(0.0005)	std err	(0.0007)	(0.001)	(0.0011)
NonCur Asts	-0.145***	-0.1554***	-0.1413***	NonCur Asts	-0.1602***	-0.161	-0.165***
std err	(0.0008)	(0.0012)	(0.0012)	std err	(0.0011)	(0.0015)	(0.0015)
NonCur Lns	0.0184***	0.0295***	0.0145***	NonCur Lns	0.0215***	0.03	0.0186***
std err	(0.0004)	(0.0005)	(0.0006)	std err	(0.0004)	(0.0005)	(0.0006)
ChrgOffs	-0.014***	-0.0086***	-0.0165***	ChrgOffs	-0.0122***	-0.0077	-0.014***
std err	(0.0002)	(0.0002)	(0.0003)	std err	(0.0002)	(0.0002)	(0.0003)
LnLoss Alw	0.0546***	0.047***	0.0513***	LnLoss Alw	0.066***	0.0561	0.063***
std err	(0.0005)	(0.0006)	(0.0008)	std err	(0.0005)	(0.0007)	(0.0008)
NonInt Exp	-0.6617***	-0.6995***	-0.642***	NonInt Exp	-0.8809***	-0.8284	-0.8773***
std err	(0.0035)	(0.0057)	(0.0047)	std err	(0.0049)	(0.0074)	(0.0067)
Effcy	-0.0161***	-0.0147***	-0.0167***	Effcy	-0.0033***	-0.0069	-0.0022***
std err	(0.0001)	(0.0002)	(0.0002)	std err	(0.0002)	(0.0003)	(0.0003)
Ln Assets	-0.0195***	-0.0251***	-0.0111***	Ln Assets	0.0224***	-0.0386	0.0688***
std err	(0.0013)	(0.0017)	(0.0021)	std err	(0.0043)	(0.0059)	(0.0067)
cons	1.3845***	1.3701***	1.3348***	cons	-0.3142***	0.6801	-0.9896***
	(0.0219)	(0.0289)	(0.0344)		(0.0591)	(0.0786)	(0.0919)
Significance: *** 1% level, ** 5% level, * 10% level							

Across all periods, net interest income (*nimy*) and noninterest income (*noniiay*) provide

the largest positive contribution to profitability while noninterest expense (*nonixay*) provides the

largest negative contribution. This is not surprising; however, it is interesting that across all

periods, noninterest income contributes more to profitability than net interest margin for both

rural and metropolitan banks. This aligns with previous research that found that noninterest

income has steadily increased since deregulation (e.g., DeYoung, & Rice, 2004; Stiroh, 2004, 2006). In the 2000-2014 period, all variables are highly significant.

The inclusion of the lagged dependent variable in the time-series model changes the sign for the size variable (lnasset) from negative to positive for both areas combined and for metropolitan but not for rural banks. Across the entire period, 2000-2014, in the time-series model, being larger made a positive contribution to profitability for metropolitan banks while being larger contributed negatively to profitability for rural banks. In the non-time-series model, being larger contributed negatively to profitability for both rural and metropolitan banks.

During the 2000-2006 pre-crisis period (Table VI), loans and leases 90 days past due become nonsignificant in the time-series model. Loan loss allowances also change from positive to negative for both areas combined and metropolitan banks in the time-series model. Larger size correlates positively with profitability for both areas combined and metropolitan areas in both models; however, size correlates negatively with profitability in rural banks in both models. Metropolitan community banks are likely able to grow in a single market while rural banks, absent some local economic boom, are likely to have to grow by branching into other communities. The logistics and cost of managing multiple branches across larger distances may be the cause of size contributing negatively to rural bank profitability. Future research comparing the profitability of rural community banks based on the number of counties that they operate branches in might provide interesting insight.

Table VI. 2000-2006 OLS Results							
Cross-Sectional Model using OLS				Cross-Sectional Time-Series Model using OLS			
Var	All	Rural	Metro	Var	All	Rural	Metro
				Ptx ROA.l4	0.0363***	0.0259***	0.04***
				std err	(0.0015)	(0.0021)	(0.0022)
Net Int Mar	0.439***	0.437***	0.4359***	Net Int Mar	0.4646***	0.4425***	0.4797***
std err	(0.0025)	(0.0035)	(0.0036)	std err	(0.0039)	(0.0054)	(0.0057)
NonInt Incm	0.615***	0.5813***	0.6331***	NonInt Incm	0.6166***	0.5949***	0.6299***
std err	(0.0034)	(0.0048)	(0.0048)	std err	(0.0051)	(0.0073)	(0.0072)
CAR	0.0089***	0.0102***	0.0077***	CAR	0.0182***	0.0229***	0.0163***
std err	(0.0003)	(0.0004)	(0.0005)	std err	(0.0007)	(0.001)	(0.001)
NonCur Asts	-0.0778***	-0.0876***	-0.0672***	NonCur Asts	-0.0789***	-0.0899***	-0.0664***
std err	(0.0025)	(0.0028)	(0.004)	std err	(0.0029)	(0.0036)	(0.0046)
NonCur Lns	0.0173***	0.0231***	0.0134***	NonCur Lns	0.0124***	0.0218***	-0.001***
std err	(0.0016)	(0.0019)	(0.0027)	std err	(0.0018)	(0.0022)	(0.003)
ChrgOffs	-0.1899***	-0.2651***	-0.1154***	ChrgOffs	-0.2481***	-0.2573***	-0.2301***
std err	(0.0018)	(0.002)	(0.003)	std err	(0.0018)	(0.0021)	(0.0031)
LnLoss Alw	0.0197***	-0.0032***	0.0305***	LnLoss Alw	-0.0558***	-0.0488***	-0.0692***
std err	(0.0013)	(0.0014)	(0.0022)	std err	(0.0022)	(0.0027)	(0.0036)
NonInt Exp	-0.3385***	-0.2999***	-0.3618***	NonInt Exp	-0.3187***	-0.2801***	-0.3347***
std err	(0.0033)	(0.0051)	(0.0046)	std err	(0.0048)	(0.0069)	(0.0067)
Effcy	-0.0293***	-0.0311***	-0.0282***	Effcy	-0.0258***	-0.0285***	-0.0238***
std err	(0.0001)	(0.0002)	(0.0002)	std err	(0.0002)	(0.0003)	(0.0003)
Ln Assets	0.0109***	-0.0112***	0.0259***	Ln Assets	0.0274***	-0.0381***	0.0791***
std err	(0.0011)	(0.0014)	(0.0019)	std err	(0.0049)	(0.0073)	(0.0074)
cons	1.9272***	2.2415***	1.7321***	cons	1.3074***	2.1741***	0.5623***
	(0.0194)	(0.025)	(0.0311)		(0.0622)	(0.0879)	(0.0952)
Significance: *** 1% level, ** 5% level, * 10% level							

During the crisis period, 2007-2009 (Table VII), the capital to asset ratio (*eqv*) is not significant for rural banks in the non-time-series model but is significant in the time-series model. Interestingly, loans and leases 90 days past due become not significant for metropolitan banks in the time-series model, but are positive in all other columns in Table VII.

Table VII. 2007-2009 OLS Results							
Cross-Sectional Model using OLS				Cross-Sectional Time-Series Model using OLS			
Var	All	Rural	Metro	Var	All	Rural	Metro
				Ptx ROA.l4	-0.1691***	-0.1249***	-0.1976***
				std err	(0.0045)	(0.0058)	(0.0066)
Net Int Mar	1.0783***	1.101***	1.0546***	Net Int Mar	1.5606***	1.5403***	1.6106***
std err	(0.0093)	(0.0138)	(0.0128)	std err	(0.044)	(0.0647)	(0.0602)
NonInt Incm	1.4531***	1.394***	1.4682***	NonInt Incm	1.7006***	1.9014***	1.5529***
std err	(0.014)	(0.0212)	(0.0188)	std err	(0.0518)	(0.0824)	(0.0669)
CAR	0.0063***	-0.0027	0.0103***	CAR	0.0608***	0.1039***	0.0533***
std err	(0.0014)	(0.0019)	(0.0019)	std err	(0.0098)	(0.0162)	(0.0126)
NonCur Asts	-0.2329***	-0.1943***	-0.2555***	NonCur Asts	-0.0282**	0.0604***	-0.1136***
std err	(0.0031)	(0.0044)	(0.0042)	std err	(0.0092)	(0.0136)	(0.0126)
NonCur Lns	0.0335***	0.0407***	0.0314***	NonCur Lns	0.0541***	0.0564***	0.0537
std err	(0.0007)	(0.001)	(0.0011)	std err	(0.0012)	(0.0017)	(0.0017)
ChrgOffs	-0.0104***	-0.0066***	-0.0119***	ChrgOffs	-0.0071***	-0.0051***	-0.0076***
std err	(0.0003)	(0.0004)	(0.0005)	std err	(0.0005)	(0.0006)	(0.0007)
LnLoss Alw	0.0611***	0.0586***	0.0537***	LnLoss Alw	0.0596***	0.0585***	0.0527***
std err	(0.001)	(0.0013)	(0.0014)	std err	(0.0015)	(0.002)	(0.0021)
NonInt Exp	-1.3401***	-1.4021***	-1.2937***	NonInt Exp	-1.8016***	-2.2012***	-1.611***
std err	(0.0111)	(0.0189)	(0.0143)	std err	(0.0349)	(0.0625)	(0.0437)
Effcy	0.0059***	0.0066***	0.0047***	Effcy	0.0326***	0.0312***	0.0324***
std err	(0.0004)	(0.0008)	(0.0006)	std err	(0.0008)	(0.0014)	(0.0011)
Ln Assets	-0.0811***	-0.075***	-0.0638***	Ln Assets	0.2274	-1.1354***	0.9542***
std err	(0.0053)	(0.0073)	(0.008)	std err	(0.1389)	(0.2247)	(0.1884)
cons	0.4581***	0.4833***	0.3021**	cons	-6.5748***	9.9594***	-15.9486***
	(0.084)	(0.1158)	(0.1271)		(1.7197)	(2.6912)	(2.3884)
Significance: *** 1% level, ** 5% level, * 10% level							

Size is significant and negatively correlated with profitability in all columns of the non-time-series model; however, size is not significant for both areas combined in the time-series model and significant while it is positively correlated for rural banks and significant and negatively correlated for metropolitan banks.

Table VIII. 2010-2014 OLS Results							
Cross-Sectional Model using OLS				Cross-Sectional Time-Series Model using OLS			
Var	All	Rural	Metro	Var	All	Rural	Metro
				Ptx ROA.l4	-0.0242***	-0.0326***	-0.0218***
				std err	(0.0019)	(0.0029)	(0.0027)
Net Int Mar	0.3617***	0.4817***	0.3253***	Net Int Mar	0.3949***	0.3844***	0.3871***
std err	(0.0037)	(0.005)	(0.0054)	std err	(0.0062)	(0.0086)	(0.009)
NonInt Incm	0.5779***	0.6969***	0.5491***	NonInt Incm	0.7377***	0.7208***	0.7393***
std err	(0.005)	(0.0068)	(0.0071)	std err	(0.0068)	(0.0105)	(0.0091)
CAR	0.0163***	0.0106***	0.02***	CAR	0.036***	0.0497***	0.0304***
std err	(0.0005)	(0.0006)	(0.0007)	std err	(0.0013)	(0.0019)	(0.0018)
NonCur Asts	-0.0909***	-0.0589***	-0.0951***	NonCur Asts	-0.0569***	-0.0593***	-0.0565***
std err	(0.0012)	(0.0017)	(0.0017)	std err	(0.0021)	(0.0033)	(0.0028)
NonCur Lns	0.0269***	0.0127***	0.0283***	NonCur Lns	0.0023*	0.0062**	0.0004
std err	(0.001)	(0.0014)	(0.0013)	std err	(0.0014)	(0.0021)	(0.0018)
ChrgOffs	-0.2397***	-0.3573***	-0.2119***	ChrgOffs	-0.2923***	-0.2962***	-0.2898***
std err	(0.0016)	(0.0025)	(0.0022)	std err	(0.0019)	(0.0027)	(0.0026)
LnLoss Alw	0.0071***	-0.0281***	0.0175***	LnLoss Alw	-0.1425***	-0.1202***	-0.1535***
std err	(0.0017)	(0.002)	(0.0026)	std err	(0.0029)	(0.0043)	(0.004)
NonInt Exp	-0.2935***	-0.4747***	-0.2528***	NonInt Exp	-0.441***	-0.4095***	-0.446***
std err	(0.0047)	(0.0073)	(0.0064)	std err	(0.0067)	(0.0104)	(0.009)
Effcy	-0.0247***	-0.0188***	-0.0261***	Effcy	-0.0172***	-0.0186***	-0.0167***
std err	(0.0002)	(0.0003)	(0.0003)	std err	(0.0002)	(0.0004)	(0.0003)
Ln Assets	-0.0136***	-0.0143***	-0.0134***	Ln Assets	-0.0834	-0.1039***	-0.0619***
std err	(0.0016)	(0.0019)	(0.0025)	std err	(0.0126)	(0.0182)	(0.0178)
cons	2.0265***	1.7371***	2.0918***	cons	2.6247***	2.7086***	2.4862***
	(0.028)	(0.0341)	(0.0449)		(0.1638)	(0.2309)	(0.2355)
Significance: *** 1% level, ** 5% level, * 10% level							

In the post-crisis period, 2010-2014 (Table VIII), in the time-series model loans and leases 90 days past due (*nclnlsr*) are not significant for both areas combined and for metropolitan banks while the variable is significant at the $p < 0.05$ level for rural banks. Size is significant and negatively correlated with profitability in all columns in the non-time-series model; however, it is not significant for both areas combined in the time-series model while both rural and metropolitan banks remain significant and negative individually.

Table IX provides the result of the interaction test on each of the independent variables using both regression models. All variables are significant at the $p < 0.05$ level in the non-time-

series model except for size (lnassets) in the 2010-2014 post-crisis period. In the time-series model all variables are significant at the $p < 0.05$ level except for nonperforming assets (*nperfv*) and noninterest expense (nonixay) in the 2000-2002 pre-crisis period, net interest margins (nimy) during the 2007-2009 crisis period, and loans and leases 90 days past due (*ntlnlsr*) during the 2010-2014 post-crisis period.

Table IX. Interaction Effects of Metropolitan versus Rural								
	Cross-Sectional OLS Model				Cross-Sectional Time-Series OLS Model			
Variable	00-14	00-06	07-09	10-14	00-14	00-02	07-09	10-14
Net Int Mar * metro	**	***	***	***	***	***	ns	***
NonInt Incm * metro	***	***	***	***	***	**	**	***
CAR * metro	**	***	***	***	***	***	**	***
NonCur Asts * metro	***	***	***	***	***	***	***	**
NonCur Lns * metro	***	***	***	***	***	***	***	**
ChrgOffs * metro	***	***	***	***	***	***	***	*
LnLoss Alw * metro	***	***	***	***	***	***	***	***
NonInt Exp * metro	***	**	***	***	***	ns	***	**
Effcy * metro	***	**	***	***	***	***	***	**
Ln Assets * metro	***	***	**	ns	***	***	***	***
Significance: *** 1% level, ** 5% level, * 10% level, ns = not significant								

Because the capital to asset ratio (*eqv*) in the non-time-series model was highly significant, $p < 0.001$, in each of the sub-periods but $p = 0.43$ over the entire 2000-2014 period, I created dummy variables for each period and tested each period against the other two. The result was that the 2007-2009 crisis period was significantly different, $p < 0.001$, from the pre-crisis and post-crisis period for capital to assets ratio (eqv); however, the six year pre-crisis period and four year post-crisis period were not significantly different from zero, $F(1.36) = 1.30$, $p > F = 0.254$. As mentioned previously in the discussion on univariate results, during the financial crisis metropolitan community banks increased the capital to asset ratio significantly more their rural community counterparts; however, on average the capital to asset ratio of metropolitan banks in the 2010-2014 post-crisis period has fallen below that of rural banks.

Hypotheses 3 through 12a were tested using univariate t-test for mean differences. However, it is worth noting that while the results in the OLS models support that metropolitan and rural community banks do have significant differences based on the variables that contribute to profitability, the different statistical models have some differences. It is important to note that the hypotheses test the differences in the ratios between metropolitan and rural community banks, including pretax return on assets (*roaptx*) and return on equity (*roe*), while the OLS regressions measure the contribution that each variable makes to the measure of profitability used as the dependent variable, pre-tax return on assets (*roaptx*). Pretax Return on Assets (*roaptx*) is the dependent variable in the OLS models and therefore the metro-rural interaction is not available to compare to the results for Hypothesis 4. Because Return on Equity (*roe*) and Pretax Return on Assets (*roaptx*) are serially correlated, it is not included in the OLS models and therefore unavailable for comparison to the results for Hypothesis 5. Hypothesis 6 addresses capital to asset ratios (*eqv*) and the interaction effect is significant in both OLS models and the *eqv* variable does have a significant, $p < 0.05$, and positive effect on profitability for both metropolitan and rural community banks in both OLS models. However, Hypothesis 6 relates to the portion of equity to assets bank shareholders have and not the contribution that ratio makes to profitability. Hypotheses 7 through 10 relate to loan portfolio risk. Like the univariate results, the ratio of noncurrent assets is not significant for the 2000-2002 period, but significant for all other periods. However, the variables for noncurrent loans a leases (nclnlsr), net charge offs (ntnlsr) and loan loss allowances (lnatresr), related to Hypothesis 8 through 10 respectively, are significant in all periods in the OLS models while there are sub-periods that the t-test for mean differences were not supported. Noninterest expense, tested in Hypothesis 11, was significant in all periods in the univariate t-test, but not significantly different between rural and metropolitan

community banks in the time-series model for the 2000-2002 pre-crisis period. Efficiency, related to Hypotheses 12 and 12a, were significant in all periods in both OLS models as well as the univariate t-test. Again, the results of the univariate t-tests of mean difference and OLS regressions are not directly comparable; however, they are worthy of a brief discussion.

Interviews and Survey

Interviews

The formal interviews occurred prior to developing the survey scales; however, during the visits to solicit participation in the pilot study some bankers shared comments that I include here. Those short interactions were not structured; however, they provided some very candid insight. The responses in the semi-structured interviews were surprisingly similar; therefore, it was not difficult to identify themes. The only noteworthy exception was that the conversations with bankers in Midland and Odessa, Texas involved the difference in business with the price of oil over $100 dollar per barrel versus under $50. However, the comments on competition in the banking industry in general were very similar to those from bankers in other areas. The purpose of the interviews was to follow best practices in scale development to aid in the modification of items on existing scales and to develop items for measurement scales for use in this particular study and not to test hypothesis based on a content analysis of the interviews, The following is a general summarization of the interviews. It is important to note that the generalization of information from the limited sample of interviewees could lead to false conclusions. Qualitative researchers must accept this reality.

Every community banker, rural and metropolitan, repeatedly brought up excessive regulatory compliance burdens as part of the response to individual questions. Bankers

consistently mentioned the Dodd-Frank Act and the Consumer Financial Protection Bureau. Some bankers in metropolitan areas informed me that they had completely exited the home mortgage lending market. One stated that, "They [regulators] are running the small banks out of the home mortgage market because you need a team of compliance specialist and multi-million dollar systems to stay out of trouble." Another said, "Why take the risk of getting fined, let Quicken Loans take that risk." Earlier this year the US Justice Department sued Quicken Loans alleging that the company made hundreds of improper Federal Housing Administration insured loans (Light, 2015). The comments went beyond home mortgage loans. Generally, community bankers feel that in an effort to avoid another financial crisis, that community bankers attribute to the *Wall Street* or *Too Big to Fail* bankers, regulators are creating an environment where small banks cannot survive because regulatory compliance now requires teams of attorneys, accountants, and software that is costly to obtain and support. One person interviewed stated that one of the main reasons behind merging with a larger locally owned bank in a nearby larger rural county was that both needed to invest in automation and training that was better suited for current compliance standards and "the system" could handle hundreds of thousands of loans as easily as it handles thousands. Based on the frequency that regulatory compliance came up in interviews, I searched the academic literature and business press for better insight and found that there appears to be support for the bankers' comments about the increased burden of regulatory compliance.

The concern over the increased regulatory burden on community banks has been the subject of recent research by government and academic researchers. Hoskins and Labonte (2015) at the Congressional Research Service examine the regulatory burden on small banks. They provide insight into financial crisis related regulatory changes and the exemption in place for

small banks. Their report also discusses the possibility of economies of scale in regulatory

compliance and cites a limited number of studies that provide some support for the idea smaller

banks face a relatively higher regulatory burden in terms of cost; however, they suggest that

there is no conclusive empirical evidence. As pointed out in the 2012 FDIC Community Banking

Study, it is difficult to disentangle regulatory compliance cost from general operating costs. Lux

& Greene (2015), from Harvard University's Mossavar-Rahmani Center, examined the state of

community banking and cite additional research indicating that regulatory compliance is driving

consolidation in the sector. Lux and Greene (2015) posit that if the trend continues a significant

number of US counties may have "limited physical access to mainstream banking services" (p.

25). They provide the example of Harding County, New Mexico, which lost its last bank in 2014,

residents now bank by ATM. Another recent study by Peirce, Robinson, & Stratmann (2014),

from the Mercatus Center at George Mason University, includes a detailed survey of

approximately 200 community bankers on the impact of regulatory compliance. Despite the

exemptions for community banks in the financial crisis related regulatory reforms, both studies,

Lux and Greene (2015) and Peirce, Robinson, and Stratmann (2014), provide convincing

arguments that community banks have seen a significant increase in the regulatory compliance

burden. Peirce, Robinson, & Stratmann (2014) argue that even compliance issues that

community banks are supposed to be exempt from are having a substantial impact on them

because prudential regulators standardize reporting and the result is that it affects all banks. The

comments that interviewees made in this study concerning regulatory compliance align well with

the information in the three studies mentioned in this paragraph; therefore, I direct readers there

for a clear understanding of the increased regulatory burden confronting community bankers.

Every person interviewed projected a positive vision for the future of his or her bank and emphasize the importance of relationships with customers. However, when asked in general about the ability of small banks to grow, the consensus was that banking is increasingly becoming an automated industry where a bank needs to reach a certain size to cover the cost of implementation and support. However, no person interviewed voiced an expectation that his or her bank would voluntarily merge with another bank in the near future. One vice-president of a rural bank with over 40 years of experience in the industry summed the issue of technology cost up as follows:

> "*Years ago there were more tellers out there and the lines were longer as people deposited money and cashed checks in person. Today, we only have one or two tellers out there at any given time, but we had to build a new building across the parking lot for all of the people running the software. Most of them went to college and they earn a lot more than we pay our tellers. The difference is that today the customers that work for the government or the other large employers in our community or commute to the city get paid through direct deposit and they can switch banks from one paycheck to another. Those are also some of our best deposit and loan customers and they expect online and now mobile banking. We don't have a choice; we have to offer those services or they will move their accounts.*"

Comments like this were similar in the small banks, under $200 million, in the metropolitan areas also.

Metropolitan community bankers discussed the difficulty of competing against the 24/7 marketing campaigns on television, radio, and billboards from the nationwide and regional

banks. As mentioned previously, one banker likened it to whispering at a rock concert. Although the marketing literature provides some validated scales useful in measuring marketing capabilities, it is really an issue of economy of scale when it comes to community banks in metropolitan areas. The nationwide and regional banks can afford to buy advertising in the national media to the extent that they reach virtually everyone via some medium. Although rural bankers did not bring up the issue in a competitive sense, one rural banker did say, "Now everyone thinks they need to be able to deposit checks with their [explicative deleted] phone just because they saw it on TV!"

Metropolitan community bankers also brought up the difficulty of competing against the large banks on big loans because the big banks have teams of specialist in areas such as Small Business Administration or agricultural guarantee loan programs where the community bank has only one or two persons with that specialized knowledge. In addition, the nationwide and regional banks are spreading the loan portfolio risk across a much more diverse client base. Even rural bankers are apparently experiencing competition on large commercial loans. More than one community banker mentioned that nationwide and regional banks had waived the Farm Service Administration (FSA) loan guarantee requirement on large agricultural loans to well-established clients and that made a significant difference in the cost to the borrower. Having a more geographically diverse agricultural loan portfolio would arguably allow for large banks to take the risk if the client was otherwise credit-worthy. However, as one rural banker stated, "Without insurance a local outbreak of bird flu could result in the default on a million dollar facility that is not good for anything except processing chickens and that is too much risk for our $100 million dollar bank to take."

It was difficult to illicit a clear consensus from community bankers on how much competition from the nationwide and regional banks affects small business lending. This is also apparent in the survey results in that the average was slightly above the middle of the scale, but not significantly different between rural and metropolitan banks. The wording of the scale items for small business lending is such that a higher score indicates a perception that lending to small businesses is becoming increasingly difficult. All the bankers interviewed expressed that small business lending was a core competency and took great pride in the role community banks play in funding small business. At the same time, the bankers with years of experience indicated that they had lost some of the best commercial clients when they grew large enough to draw the attention of the large banks. One banker in a metropolitan area commented that "because the *mega-banks* go after the biggest accounts with rates and services that we cannot match; our toughest completion comes from the other locally owned banks as we fight for what is left." Both metropolitan and rural bankers mentioned in some form that it was increasingly difficult to underwrite a business loan with just a good idea. One might summarize the overall response as agreeing that the overall competitive environment of community banking has had a negative impact on small business lending, *but not at our bank*.

I did not interview anyone that appeared to think that opening a new bank in the community would be a good idea. A couple of people mentioned that it was more complicated to charter a new bank now than in the past, and this was previously noted in the literature review section (e.g., Griggs, 2015; Rutledge, 2014). However, most pointed out that the economic conditions are not very favorable. This aligns with the data, which indicates that bank profits increase when interest rates are higher and that new bank charters correlated positively with economic expansion (Adams & Gramlich, 2014). The consensus appeared to be that existing

banks served the community's needs and the challenge would be to offer something sufficiently different to attract enough customers away from existing banks.

Four community bankers in metropolitan areas brought up credit unions as significant competitive threat and four survey participants that left comments mentioning credit unions. One community banker asked, "How do you compete against a nonprofit?". The National Credit Union Administration (NCUA) regulates credit unions and the FDIC does not insure credit unions; therefore, data credit union deposits and loan activity are not in the FDIC dataset and beyond the scope of this study. However, credit union membership and deposits have been steadily increasing in recent years, in 2015 the NCUA did modify the regulations to permit more Member Business Loans (MBLs), and legislation has been reintroduced in the House of Representatives to increase the amount of business lending credit unions can participate in (CUNA, 2015).

As one might expect, all interviewees expressed confidence that the bank that they worked at could successfully navigate the constantly changing regulatory environment and survive by providing the outstanding personalized service that is the cornerstone of relationship banking. Nonetheless, those interviewed provided no indication that believed the competitive or regulatory environment would become any less hostile for community banks. One comment left by a banker located in a metropolitan area who participated in the survey provides candid insight, "The only reason that we are still in business is lower overhead cost and good customer service to loyal customer who are willing to pay a little extra so we can offer a slightly higher rate on deposits."

Survey Results

Because some of the community bankers in metropolitan areas brought up the issue of competition from credit unions, I included a question in the survey about competition from credit unions. As discussed in the literature review, there have been recent changes that increase the ability of credit unions to make business loans to members; however, the academic and government research does not provide sufficient insight to develop a formal hypothesis. Nonetheless, metropolitan community bankers did view credit unions as a significantly higher competitive threat than rural community bankers did, mean rural = 48.91 mean metro = 75.22, $t(255) = 7.43$, $p < 0.000$ (one-tail M>R) $d = 1.05$. Although it is beyond the scope of this study, a cursory review of the data indicates that the largest percentage of credit union branches are located in metropolitan areas; therefore, it is likely that rural community banks do not encounter much competition from credit unions. Based on a suggestion from a community bank researcher that reviewed the survey items, I also included a question about online business lending. This is a relatively new phenomena started by non-bank lenders and recently Goldman Sachs announced that it would enter online lending to businesses and consumers. Again, metropolitan community bankers viewed online business lending as a greater threat than rural bankers did, $t(255) = 4.31$, $p < 0.000$ (one-tail M>R) $d = 0.640$; however, the difference in the means was much closer, mean rural = 54.72 mean metro = 68.21.

The evaluation of Hypotheses 13 through 18 utilizes a t-test of the difference in the means of the sum of item scores on each individual scale. I tested the standard deviation and variance between metropolitan and rural banks for each of the summated values on each scale. The test revealed that the Competitive Intensity (CI) scale was the only scale where the standard deviation and variance was significantly different between groups. Therefore, the t-test for mean

difference on the CI scale used Satterwaite's adjustment of degrees of freedom. Table X provides the results.

Hypothesis 13 relates to how community bank management team members view the level of competitive intensity and the results indicate support for Hypothesis 13 in that community bankers do perceive that the competitive environment is significantly more intense, $t(174) = 9.77$, $p < 0.000$ (one-tail M>R) $d = 1.31$. Levene's test indicated unequal variances (F = 2.11, $p < 0.000$) so degrees of freedom were adjusted from 255 to 174. Hypothesis 14 examines the perception that large nationwide and regional banks are actively seeking out the biggest depositors and most credit-worthy commercial borrowers currently doing business with locally owned banks. Although the means are significantly different, $t(255) = 7.39$, $p < 0.000$ (one-tail M<R)) $d = 0.93$, between metropolitan bankers and rural bankers and provides support for Hypothesis 14, the mean for metropolitan bankers is lower than expected. In the interviews with metropolitan community bankers, they emphasized the importance of retaining the largest and most established commercial clients and the difficulty in being able to compete with the interest rates and services that the largest banks can offer.

Table X. Scale Scores and t-test Results				
Scale	Max Scale Value	Area	Mean	Std. Err.
H 13. Competitive Intensity 1-tail M>R	600	Rural Metro	273.22 402.67***	11.50 6.59
H 14. Cherry Picking 1-tail M<R	400	Rural Metro	197.27 265.75***	7.61 5.64
H 15. Marketing Capabilities 1-tail M<R	500	Rural Metro	256.25 170.86***	7.75 6.33
H 16. Merger and Acquisition 1-tail M>R	400	Rural Metro	212.72 271.26***	4.35 3.68
H 17. New Bank Startup 1-tail M<R	500	Rural Metro	119.93 153.94	4.77 4.13
H 17a. New Bank Startup 2-tail M=R	400	Rural Metro	119.93 153.54***	4.52 4.13
H 18. Small Business Lending 1-tail M>R	400	Rural Metro	252.14 251.91	4.65 4.04
Significance: *** 1% level, ** 5% level, * 10% level				
H 17a is M=R. H17a is not supported because the difference is significant				

The survey results do not appear as strong as the emphasis in the interviews. This may demonstrate a need to improve the measurement scale or it may be that the limited sample size and geographic scope of the interviews skewed the perception. Nonetheless, the survey results do provide convincing evidence that community bankers in metropolitan areas do perceive that nationwide and regional banks do engage in cherry picking behavior.

It is not surprising that community bankers in metropolitan areas perceive the bank's marketing capabilities, Hypothesis 15, to be lower than the marketing capabilities of the banks they compete against in the area they service. The nationwide and regional banks have large marketing departments and spend billions on advertising. Although that advertising also reaches

customers who live in rural areas, most rural counties do not have a branch of one of the nationwide or regional banks. Rural bankers compete against banks that have relatively the same level of marketing expertise. Therefore there is a significant difference, $t(255) = 8.58$, $p < 0.000$ (one-tail M<R) d = 1.09, in how community bankers in metropolitan and rural counties perceive their banks marketing capabilities as compared to the banks that they compete against and this provides support for Hypothesis 15. However, beyond marketing capabilities, metropolitan community bankers must accept that banking customers possibly perceive a level prestige and security in national bank brands that they do not perceive in smaller locally owned banks.

Arguably, perceptions on merger and acquisition, Hypothesis 16 and new bank startups, Hypothesis 17 and 17a, should correlate in that if one perceives that a community bank can profit and grow organically without the need to merge then the local economic environment should also be able to support a new bank. The results for merger and acquisition, $t(255) = 10.28$, $p < 0.000$ (one-tail M>R) $d = 1.30$, and new bank startups, $t(255) = 5.37$, $p < 0.000$ (two-tail) $d = 0.683$ are significantly different between rural and metropolitan community bankers. Community bankers in metropolitan areas view the likelihood of more community bank mergers higher and this provides support for Hypothesis 16. It is interesting that on average even rural community bankers viewed the likelihood of merger slightly above the 200 midpoint of on the scale. This provides some additional support for the suggestion that regulatory compliance is driving the continuing merger activity (e.g., Lux & Greene, 2015; Peirce, Robinson, & Stratmann, 2014). In their survey, Peirce, Robinson, & Stratmann (2014) approximately 25% of respondents indicated that they were contemplating mergers.

However, despite viewing the likelihood of merger higher, metropolitan community bankers also view the likelihood of a new bank succeeding higher. This seems counter intuitive;

however, it is worth noting that while M&A perceptions were above 200 on the 400 scale,

indicating that respondents perceive more M&A activity in the future, the perception of new

bank success was well below the 250 midpoint on the 500-point scale for new bank startups.

Nonetheless, metropolitan bankers do view the new bank potential somewhat more positive.

Therefore, the results do not support Hypothesis 17, $t(255) = 5.37$, $p = 1.000$ (one-tail M<R) $d =$

0.68. Hypothesis 17a is that there is not significant difference in the perceptions between rural

and metropolitan community bankers in regards to the success of a new bank. Because there is a

significant difference in the score on new bank startups between rural and metropolitan

community bankers $t(255) = 5.37$, $p < 0.000$ (two-tail) $d = 0.68$, there is also no support for

Hypothesis 17a. However, based on the scale mean scores, neither rural nor metropolitan bankers

view the competitive environment favorable to a new bank in the area they serve. It is possible

that community bankers in metropolitan areas see a large pie where even a small piece could

provide sufficient returns to investors whereas rural community bankers see a very small pie and

economic growth potential that is not sufficient to support another competitor.

Finally, both metropolitan and rural community bankers do perceive that small business

lending has become somewhat more difficult. The small business lending scale has a maximum

value of 400. A score above 200 indicates that respondents perceive that it is more difficult to

underwrite loans to small businesses now than in past years. However, the means for rural and

metropolitan bankers are very close at 252 and 258 respectively on the scale of 400 and not

significantly different, $t(255) = 0.93$, $p = 0.170$ (one-tail R>M), $p = 0.352$(two-tail) $d = 0.12$.

Therefore, there is no support for Hypothesis 18 and both metropolitan and rural community

bankers perceive that lending to small businesses has become more difficult. Because rural and

community bankers do not differ significantly in their perceptions on small business lending, this

indicates that the perception of increased difficulty may be more attributable to regulatory compliance than competition from the large nationwide and regional banks. However, we must take some degree of caution when interpreting these results.

Previous studies, based on actual small business lending, indicate that older and larger banks do reduce the level of lending to small businesses. The extent of community bank merger activity, voluntary or because of regulatory and FDIC involvement, is self-evident. As banks merge, they increase in size. This survey measures the perceptions of lending to small businesses from people working in functioning community banks and community banks view small business lending as a core competency. Admitting that it is becoming more difficult to attract and retain the commercial borrowers that are key to your institution's success is tantamount to professing that your institution is doomed to failure. As previously discussed in the interview results, the bankers interviewed did not express that they felt that the situation was so dire where they worked. However, they did indicate that the competition for the most credit-worthy commercial accounts was intense and that both competition and increased regulatory compliance requirements made it both more costly and difficult to lend to very small businesses and to startup businesses with little or no financial history. In addition, in the survey metropolitan bankers did indicate that continued merger activity is likely. Based on previous research that banks start to make fewer small business loans as bank size increases beyond $200 million, mergers will only result in larger banks and if the trend persists this would lead to further rationing of credit to small businesses.

Summary

The results provide convincing evidence that community banks in metropolitan areas operate in a competitive environment that significantly more hostile than the competitive environment that their rural counterparts encounter. The fact that over 83% of bank failures occur in metropolitan areas underlines the challenges that metropolitan community bankers face. Table XI provides a concise summary of the findings based on both the secondary data analysis and the interview and surveys.

Table XI. Summary of Environment by Area and Bank Type	
Rural Areas	Metropolitan Areas
Community Banks	Community Banks
Compete mainly against peers of relatively equal size	Have higher cost of capital compared to publicly traded mega-banks
Rarely compete against mega-banks because only 13% of mega-bank branches are in rural counties	Have lower net interest margins than rural community banks
Compete against Nationwide and non-bank lenders on auto and home mortgage loans	Have higher operating cost not offset by economies of scale
Occasionally encounter nationwide and regional bank competition on large agricultural loans	On average have significantly lower profits than rural banks
Occasionally encounter nationwide and regional bank competition on large commercial loans	On average have riskier loan portfolios base on variables related to loan portfolio risk
Encountering increased regulatory compliance burden despite supposed exemptions	Face nationwide marketing campaigns in all mediums from mega-banks
Perceive the need to attempt to achieve economies of scale in technology and compliance	Most credit-worthy depositors and borrowers often cherry picked by mega-banks
	Individual loan officers often compete against mega-bank teams on specialized loans
	Perceive credit unions as a current and potentially growing threat
	Encountering increased regulatory compliance burden despite supposed exemptions
	Perceive the need to attempt to achieve economies of scale in technology and compliance
Nationwide and Regional Banks	Nationwide and Regional Banks
Only 13% of branches in rural counties usually legacy as in case of Wells Fargo or through acquisition	Dominate the market and have majority of deposits in most metropolitan areas
Compete nationwide in the home mortgage loan segment	Nationwide marketing campaigns drown out community bank advertising
Compete through new car dealers on auto loans	Have lower cost of capital due to access to public debt and equity markets
Compete on large agricultural loans, particularly with well-established farms and ranches	Have reached economies of scale in technology and regulatory compliance
Compete on large commercial loans to large well-established businesses	Have specialized teams to assist local branches on specialized loans
	Can grow through working to attract the most credit-worthy borrowers from locally owned banks
	Compete nationwide in the home mortgage loan segment
	Compete through new car dealers on auto loans

CHAPTER V

CONCLUSIONS

The results of this study provide convincing evidence that community banks in metropolitan areas and community banks in rural areas operate in very different competitive environments. One important contribution of this study is that it underlines the importance of separating rural and metropolitan banks when studying the community banking industry. Grouping all community banks together allows the performance of rural banks to mask the situation of community banks in metropolitan areas. Although community banks are almost equally distributed between rural (49.5%) and metropolitan (50.5%) counties, over 83% of bank failures from 2000-2014 were in metropolitan areas. Based on the FDIC data, community banks in metropolitan areas are on average approximately 30% less profitable and from the start of the financial crisis in 2007 until now have riskier loan portfolios as measured by loans and leases 90 days past due, loan loss allowances, and net write-offs. In the post-crisis period, 2010-2014, shareholders of community banks in metropolitan areas have less of their own money at risk as the capital to asset ratio is significantly lower than the ratio for rural banks. This provides support for the competition-fragility view. Although this does not hold true for the entire period from 2000-2014, during the financial crisis metropolitan banks raised the capital to equity ratio more than rural banks did and that two-year difference causes the average from the entire period to be slightly higher and significant at the $p < 0.05$ level for metropolitan community banks. In the 2000-2006 pre-crisis period, metropolitan banks had significantly lower, at the $p < 0.10$ level,

capital to asset ratios. On average, the capital to asset ratios in metropolitan community banks have been lower than the capital to asset ratios in rural banks for the 2000-2014 period evaluated with the exception of the three year 2007-2009 crisis period.

The results of the interviews and nationwide survey indicate that metropolitan community bankers perceive the competitive environment where they operate as being more intense and more likely that large competitors are actively *cherry picking* the best customers. Metropolitan bankers also indicate that marketing capabilities are a concern. Nationwide and regional banks have sufficient resources to develop complex marketing campaigns that cross a variety of mediums and flood television and radio with advertisements campaigns that reach virtually everyone. Although these campaigns also reach customers in rural areas, very few rural communities have branches of the nationwide and the large regional banks. As a result, rural banking customers are more aware of the community banks near them and the nationwide marketing campaigns do not drown out local bank campaigns in the local media as effectively.

The decline in the number of community banks through mergers and acquisitions and the major drop of new bank charters have drawn the attention of researchers at the FDIC and Federal Reserve in recent years. The dramatic reduction in the number of community banks has been shocking, from almost 18,000 in 1985 to 5,501 in 2015. The interviews and survey responses indicate that community bankers think that the merger activity will continue; metropolitan bankers more so than their rural counterparts. This aligns with a recent survey that where 25% of community banks were reported that they were contemplating a merger (Peirce, Robinson, & Stratmann, 2014). Based on the interviews of 15 community bankers in this study, drivers of mergers include attempting to achieve economies of scale in technology and in regulatory compliance. Overall, this study provides support for Lux and Greene's (2015) argument that

regulatory compliance is having a negative effect on community banks and the result is less

small business lending and increased merger activity. Based on the measurement scale score,

neither rural nor metropolitan community bankers indicated that starting a new bank in the area

they service would be a successful venture. However, metropolitan area community bankers did

rate the likelihood of success slightly higher. This result is interesting given that metropolitan

area community bankers rate the likelihood of merger higher, metropolitan community banks are

less profitable, and 83% of bank failures are in metropolitan areas. Future research should

investigate this issue further. Are metropolitan community bankers not aware of the lower

performance and higher loan portfolio risk as compared to rural community banks? Is it the

result of hubris?

Implications for Community Bankers

The data is clear that community banks in metropolitan areas face many challenges. They

compete directly with banks that have a lower cost of capital due to access to the public debt and

equity markets. The nationwide and regional banks also have their loan portfolio risk dispersed

over a large geographic area and this mitigates economic downturns or phenomena such as

drought and natural disasters that may affect only one area of the nation. Both of these facts

make it difficult for community banks to compete against the nationwide and regional banks for

the most credit-worthy business clients, those with a long business history, outstanding credit

ratings, and proper financial records. Those highly desirable clients fit perfectly into the *cookie*

cutter approach to lending utilized in large banks. Metropolitan community banks may find less

hostile environments if they open branches in the rural counties in the region. There they would

be competing less against nationwide and regional banks and more against banks of the same or

smaller size. Given that rural community banks are on average about 30% more profitable, doing business in rural counties could enhance returns to metropolitan bank shareholders. For rural community bankers the implications are that they should resist the urge to go to the big city. The possibility of growing the bank by having access to larger populations exists, but the data indicates that the competition and operating costs in metropolitan areas results in lower returns to shareholders.

Implications for Entrepreneurs

Aspiring entrepreneurs seeking loans need an awareness of the banking industry. Although it might seem logical that the biggest banks have the most money to lend and therefore would be the place most likely to lend to a new business, the data clearly indicates that this is not the case. Big banks like to make big loans to big, established, businesses. Previous studies provide convincing evidence that the larger a bank gets the relatively fewer small business loans it makes, and that is counting loans up to $1 million as a small business loan. The smaller community banks still provide most of the loans to small businesses despite the fact that today they hold only a small fraction of the nation's deposits. Therefore, new and existing microenterprises should maintain banking relationships with community banks, maybe more than one community bank. It might even be advantageous for entrepreneurs in metropolitan areas to establish relationships with community banks in nearby rural counties given that on average those banks are more profitable and in recent years have less risky loan portfolios.

The importance of entrepreneurs maintaining a good personal credit rating cannot be overstated; however, lending to small businesses is a core activity for community banks and they are interested in serving small business clients. There are even community banks in some

metropolitan areas that promote the bank as being a *business bank* in that they specialize in serving small business needs on both the deposit and lending side. It is also important to understand that banks are businesses. A bank's success depends on managing the loan portfolio risk. Banks that have higher ratios of loans and leases past due, loan loss allowances, and net write-offs will extend fewer new risky loans. Given that lending to new and very small businesses is inherently risky based on the small business failure and closing rate, entrepreneurs should direct loan applications to the community banks with the lowest ratios of loans past due, loan loss allowances, and net write-offs. A review of the publicly available information from the FDIC website, possibly with the assistance of an accountant, can provide this information for all the banks in any city, county, or state in the US.

Implications for Governments and Regulators

The decline in the number of US banks, from 17, 901 to 5,501 over the thirty-year period from 1985 to 2015 and the consolidation of the majority of deposits into just a few nationwide and regional banks is clear evidence that the banking industry in the US has changed. This study is not about the general benefits or detriments of bank consolidation. Rather, this study analyzes the competitive environment of community banking because of the important role they play in providing funds to the smallest of businesses. Nonetheless, based on the interview in this study there are some points worthy of mention. Politicians and business press have mentioned the need to reinstating Glass-Steagall and breaking up the big banks. No community banker stated that commercial banks being able to engage in investment banking caused him or her concern. However, it is true that the repeal of Glass-Steagall did play a role in creating the mega-banks that offer commercial banking, insurance, and investment banking. The part of deregulation that

appears to have the biggest impact on community bankers is the end of restrictions on the

geographic scope of branching. Community bankers, especially in metropolitan areas, did

complain that it was incredibly difficult to compete against the mega-banks because of the

massive marketing campaigns, the lower cost of capital, the expertise in specialized lending such

as agricultural and Small Business Administration lending, and the economies of scale they

achieve in technology and on regulatory compliance. If the mega-banks were broken up in a

fashion similar to the AT&T breakup in the 1980s, it would still leave community banks

competing against enormous regional banks that would retain all of the aforementioned

advantages over small locally owned community banks. The issue is the size of banks that

locally owned community banks compete against, not the number of competitors in a particular

market as US regulators continue to use when evaluating banking competition in local markets.

Unfortunately, other than relieving some of the regulatory compliance burden for all community

banks, there does not appear to be a simple solution to make the competitive environment in

metropolitan areas less hostile for community banks. Therefore, we must look for mechanisms to

insure that microenterprises and nascent entrepreneurs continue to have access to bank financing.

As politicians and government agencies continually point out, it is the smallest of

businesses, the microenterprise entrepreneurs, which employ the most people and contribute

most to job creation. With urban migration being a continuing phenomenon in the US, the

metropolitan areas are where job creation needs to improve. Both academic and government

research convincingly indicates that small community banks provide funding to new businesses

and the smallest of existing businesses. However, as this study demonstrates, the competitive

environments in metropolitan areas are increasingly hostile to community banks. As a result,

over 83% of bank failure occurs in metropolitan areas. Metropolitan community bankers also

perceive that that the merger and acquisition activity will continue as competitive pressures and technology and regulatory compliance costs drive the need to reach certain economies of scale to cover operating costs. Previous research indicates that the larger banks gets, the less credit they extend to small businesses as a proportion of their overall portfolio. As a result, community bank mergers will increase bank size and this will have a negative impact on the bank financing available to microenterprises.

Again, the bankers interviewed and surveyed in this study indicated that competition was not an issue of how many banks were competing in the area, which is how US regulators measure competition in the banking sector. Although competition is viewed as healthy in a capitalistic society because competition should provide more and better products at lower prices, in the case of small local banks competing against the large nationwide and regional banks it results in less credit being extended to new businesses and existing microenterprises. Which, in turn results in less job creation and higher unemployment. Locally owned banks need to lend to the low risk, credit-worthy, established, businesses to offset the riskier loans that they make to the new business startups and the financially opaque microenterprises that contribute significantly to job creation. With the nationwide and regional banks actively working to attract the low risk, credit-worthy, business clients away from community banks, community bankers are less able to lend to the higher risk microenterprises and nascent entrepreneurs.

Based on the input from community bankers, this study also indicated that the number of community banks will continue to decline, especially in the metropolitan areas. The Community Reinvestment Act of 1977 intended to encourage depository institutions to help meet the credit needs of communities in which they operate. However, the evidence from previous research is convincing that large banks, even if they remain community banks, avoid lending to new and

financially opaque microenterprises. As community banks continue to disappear or grow larger through mergers and acquisitions, lending to microenterprises will continue to shrink. The current reporting for the Community Reinvestment Act tracks loans under $100,000, loans $100,001 to $250,000, and loans $250,001 up to $1 million as small business loans. However, those loan clients could be well-established businesses with dozens of employees and great credit ratings. Loans to microenterprises are often only in the tens of thousands of dollars. The issue is not that larger, well-established businesses do not need loans. The issue is that given the importance of the microenterprise to employment and job creation it is important to insure that the smallest of entrepreneurs continue to have access to bank financing. However, we must first have reliable data.

A logical first step would be to modify the reporting by somehow incorporating the number of employees and years commercial loan clients have been in business as well as reporting commercial loans under $25, 000, $25,001 to $50,000, and $50,001 to $100,000. Under the current reporting system, large banks can appear to be reinvesting in the community by making several $99,000 small business loans in the community that have dozens of employees and have been in operation for decades. However, the data indicates that these businesses do not contribute the most to new job creation. Available evidence suggests that large banks do not appear to lend to microenterprises, and based on the perceptions of community bankers, this study indicates that community banks in metropolitan areas will continue to decline. If this holds true, there may be a societal need for regulatory intervention that forces large banks to take on the risk and lend a certain percentage deposits in a given metropolitan area to the smallest businesses in order to enhance job creation.

Understanding the impact of post-crisis regulatory compliance burdens on community banks is beyond the scope of this study; however, the finding in this study do align well with the findings of Lux and Greene (2015) and Peirce, Robinson, and Stratmann (2014). The fact that every community banker interviewed mentioned the increased burden of regulatory compliance indicates that there is a need for better understanding. Although small community banks are supposedly exempt from many of the requirements under Dodd-Frank (Hoskins & Labonte, 2015), bankers interviewed in this study unanimously stated that the regulatory compliance burden had increased because of post-crisis regulatory changes. A recent survey of 200 community bankers across 41 states by Peirce, Robinson, and Stratmann (2014) found that compliance costs and the number of employees working in compliance had risen at community banks since 2010. They also found that small banks are concerned about the Bureau of Consumer Financial Protection and the related new mortgage rules. Similar to the findings in this study, their survey revealed that some banks are rethinking the offering of residential mortgages and that approximately 25% of the banks surveyed were contemplating mergers. Lux and Greene (2015) found that despite community banks weathering the financial crisis better than many mid-sized counterparts did, since the passage of Dodd-Frank community banks have lost market share at nearly double the rate of what it was during the crisis. They conclude that community banks are a critical component of the US Banking sector, noting the role in small business lending, and may be withering due to inappropriately designed regulation. There appears to be a need to for politicians and regulators to understand the increased regulatory impact, likely unintended consequences, on community banks and take action to decrease the burden as quickly as possible.

Suggestions for Future Research

The change in the values of variables associated with loan portfolio risk pre-crisis and post-crisis for metropolitan banks is one area for further research. It is puzzling why rural banks had more risky loan portfolios from 2000-2006 and then suddenly metropolitan banks had the riskier loan portfolios for the next seven years. Especially in light of the findings of DeYoung, Glennon, Nigro, and Spong (2012) which indicate that SBA loans from 1984 to 2001 originated at rural community banks defaulted substantially less often than SBA loans originated at urban banks. The change in these variables after 2007 could be associated with regulatory or accounting changes or it could be that community banks in metropolitan areas simply have more loan portfolio risk because of competition for the most credit-worthy clients.

The 2012 FDIC Community Bank Study did not find that banks identifying as specializing in a particular area such as commercial lending or agricultural lending, appeared to perform better than non-specialized banks. However, that study did not compare metropolitan and rural banks. Nonetheless, it might be fruitful to identify community banks in metropolitan areas that consistently perform above average and see if there are identifiable practices that contribute to that success. During this research, I did come across some small banks in metropolitan areas that appeared to be branding the bank as a *business bank* and the FDIC data indicated above-average performance. However, a cursory review of a sample of the highest performing banks based on pre-tax return on assets from 2010 through 2014 revealed a large variety of banking strategies. Visits to the websites of these above-average performers revealed that the range covered a bank obviously specializing in private banking and wealth management in one of the largest US cities to a bank specializing in the hospitality industry, to a very small bank in a sparsely populated county.

Competition from credit unions is not within the scope of this study; however, during interviews, metropolitan community bankers brought up competition from credit unions and some survey participants mentioned credit unions in the comments section. The same entities do not regulated or insured credit unions and commercial banks; therefore, the data on deposits and loans are not in the same databases. According to CUNA Mutual group (2015), a mutual insurance company serving credit unions, credit union membership has grown steadily in recent years and credit unions now have over 100 million members and credit union balances now exceeding $1 trillion. Although credit unions have been limited in the amount of commercial lending they can participate in, the National Credit Union Administration, the credit union regulator, did approve a proposal to Part 723 that expands credit unions ability to make Member Business Loans (MBLs). Representatives reintroduced The Credit Union Small Business Jobs Creation Act in the US House of Representatives in 2015 to lift the member business-lending cap from 12.25% to 27.5%. Therefore, it does appear that while credit unions continue to be a competitive threat to community banks in the deposit and consumer lending markets they are likely to become a more serious competitive threat in the small business, especially microenterprise, lending market. This presents an interesting area for future research. As one community banker asked, "How do you compete against a nonprofit?".

Future research should investigate if metropolitan bankers are aware of how they underperform their rural counterparts in terms of profit. It was interesting that while metropolitan bankers indicated that merger activity would continue and that the competitive environment in the area is intense they also rated the feasibility of a new bank in the service area higher than their rural counterparts did.

The OLS results provided an indication that size contributed positively to profitability in metropolitan community banks but size contributed negatively to profitability for rural banks. Metropolitan community banks may be able to grow in a single market while rural banks, with the exception of a local economic boom, must grow by branching into other communities. Comparing the profitability of rural community banks based on the number of counties that they operate branches in might provide interesting insight.

Limitations

Like all studies, this one has limitations. This study compares community banks operating in metropolitan and rural counties in the US based on the data available in the Performance and Conditions Ratios reports from the FDIC from 2000 through 2014. Although, there are implications that relate to small business credit availability, this study does not examine the difference in small business credit approval (Dennis, 2011) or the increase of credit availability to small businesses through non-bank institutions (Craig & Hardee, 2006; Rutledge, 2014), which includes online lending. This study included interview data from only 15 community bankers and 257 survey respondents, a small portion of population of over 5,000 community banks. Therefore, it is reasonable to believe that using these limited observations to infer general propositions could lead to false conclusions; qualitative researchers must accept this reality.

This study does not address the potential for the 2012 Jumpstart Our Business Startups Act (The JOBS Act) to provide debt and equity funding from individual small investors to small business startups. That may alleviate some of the reduction of lending to new businesses and microenterprises from community banks. The Security and Exchange Commission has taken

three years to develop regulations and the rules will not come into effect until sometime in 2016. Therefore, it will be several years before we know the actual impact of the legislation. Likewise, this study does not examine the effect of recent changes in credit union regulations that increase business lending. Those changed only went into effect recently and it will take a few years before researchers can measure the effect.

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APPENDIX A

APPENDIX A

INTERVIEW QUESTIONS

1. Have regulatory changes after the recent financial crisis increased your bank's reporting requirements?

　　1a. (If yes) Is this significantly increasing your labor costs and impacting profitability?

2. Do you feel that you compete directly with the large nationwide and regional banks?

　　2a. (If yes) What do you feel your competitive advantage is against them?

3. Do you feel that you compete directly against credit unions?

　　3a. (If yes) What do you feel your competitive advantage is against them?

4. Do you feel that your bank is at risk of losing all or most of the business from any of your larger, well-established, credit-worthy business customers to nationwide or regional banks?

5. Do your larger, well-established, credit-worthy business customers point out financing options they have from nationwide or regional banks or specialized lenders such as CITI or GE Capital when negotiating commercial loans?

6. Do you feel that the financing offers from automotive manufactures' financing divisions takes away business from your most creditworthy customers because you cannot compete with the interest rates?

7. Does your bank participate in the Small Business Administration loan guarantee programs.

　　7a. (If No) Why not?

　　7b. (if Yes) Do you feel that the risk reduction benefit to the bank offsets the administrative cost of working with clients and the Small Business Administration to obtain the guarantees?

8. The Financial Accounting Standards Board (FASB) is proposing a new expected credit loss model that relies on complex modeling techniques. Do you feel that your bank currently has the internal resources to comply with these changes and will compliance add operating overhead that will reduce profitability?

> 8a. Do you think that the implementation of these new credit loss models would result in you providing less credit to new business startups and micro-business clients (under $250K/yr)?

9. Does your bank offer online and mobile banking?

> 9a. (if no to either) Do you plan to offer these services? Why or why not?

> 9b. (if yes) Do you feel these services enhance efficiency beyond the cost to implement and support the technology?

10. What non-traditional banking services does your bank offer?

11. How important are microbusiness clients (under $250K/yr) to your bank now and do you feel that segment will increase or decrease in importance in the future?

> 11a. Would your bank be willing to offer fee generating services such as online accounting tools, online payments, cash management, tax, payroll, or merchant services to help existing microbusiness clients grow and attract new microbusiness clients?

12. What do you see as the greatest opportunities for your bank in the next 10 years?

13: What do you see as the greatest threats for your bank in the next 10 years?

14. What adjustments is your bank making to address these opportunities and threats?

15: What, if any, issues do you feel are impacting community banks like yours that the previous questions have not addressed?

APPENDIX B

APPENDIX B

ONLINE SURVEY ITEMS

Competitive Intensity Scale

CI1 Competition in our service area is cutthroat.

CI2 There are many "promotion wars" in our service area

CI3 Competition on fees is intense in our service area

CI4 Competition on loan interest rates is intense in our service area

C15 Competition on deposit interest rates is intense in our service area

CI6 Appropriate terms used to describe competition in our service area are "intense" and "fierce"

Marketing Capabilities Scale

MC1 Relative to competitors in our service area, the effectiveness of our promotional activities (e.g. advertising) in gaining market share is:

MC2 Compared to competitors in our service area, the quality of our marketing resources is:

MC3 Compared to competitors in our service area, our advertising expenditure is:

MC4 Compared to banks in your service area, to what extent does your bank's marketing capabilities enable it to successfully compete with other banks in your service area?

MC6 Compared to banks in your service area, to what extent does your bank's marketing message reaches potential new clients effectively?

Cherry Picking Scale

CP1 We are constantly at risk of large nationwide and regional banks poaching our most credit-worthy commercial borrowers

CP2 We are constantly at risk of large nationwide and regional banks poaching our large depositors

CP3 Our most credit-worthy borrowers bring offers from competing banks to negotiate lower loan rates.

CP4 Our largest depositors bring offers from competing banks to negotiate higher deposit rates.

New Bank Success Scale

NB1 When interest rates return to historic norms, it would be profitable to start a new bank in our service area.

NB2 The regulatory hurdles of starting a new bank make the startup cost too high to overcome even when interest rates return to historic norms.

NB3 It would be possible for a new bank in our market to attract sufficient clients away from existing banks

NB4 The competitive intensity in our market is such that a small new bank could not survive

NB5 Unmet consumer needs in our service area are significant enough to make a new bank startup successful

Merger and Acquisition Scale

MA1 In the next 5 to 10 years our bank can grow significantly without merging with another bank

MA2 Regulatory compliance costs require economies of scale and will result in small banks merging with larger banks.

MA3 The technology support cost of online and mobile banking require economies of scale and will result in small banks merging with larger banks.

MA4 In the next 5 to 10 years it is likely that our bank will merge with or acquire another bank

Small Business Lending Scale

SB1 As a result of large nationwide and regional banks pursuing the most credit-worthy commercial accounts community banks often have to deny loans to small startup businesses to manage the overall loan portfolio risk.

SB2 Fierce competition for the most credit-worthy commercial borrowers results in less credit being extended to the smallest businesses.

SB3 Post-crisis regulatory oversight makes lending to less financially transparent small businesses difficult.

SB4 Regulatory compliance makes underwriting loans to very small business (e.g. under 100k) too costly.

Additional Questions

CU1 Credit Unions are a serious competitive threat for our bank

OL1 Online lending to small businesses presents a serious threat to community banks

APPENDIX C

APPENDIX C

SURVEY PARTICIPANT DATA

Survery Participant Data	
Total Assets	Number
< $50 Million	14
$50M * $99M	41
$100M - $199M	74
$200M - $299M	37
$300M - $499M	39
$500M - $749M	17
$750M - $999M	19
$1B - $1.9B	12
$2B - $2.9B	2
$3B - $3.9B	0
$4B - $5B	2
>5B	0
Numer of Branches	Number
1	42
2-5	117
6-10	59
11-15	22
15-20	11
>20	6
Large Banks in Area	Number
Yes	157
No	100
SBA Loan Participation	Number
Yes	137
No	120
Home Mortgage Participation	Number
Yes	181
No	29

BIOGRAPHICAL SKETCH

Robert Dean Morrison earned a Bachelor of Science degree with a major in police administration and an Associate of Science degree with a major in emergency medical care from Eastern Kentucky University. He earned three masters degrees from Morehead State University, a Master of Business Administration with specializations in both management and finance, a Master of Science in Industrial Technology, and a Master of Science in Information Systems. He earned a Doctor of Philosophy degree in Technology Management with a specialization in Manufacturing Systems from Indiana State University. Robert and his wife Claudia were among the 26 selected to participate in the 2006 AACSB Inaugural Bridge Program to transition industry executives to careers in business education. He lives at 3806 Bridget St, Edinburg, TX 78539.

Beginning in his teenage years, Robert started several successful entrepreneurial ventures. While pursuing his undergraduate education and after graduation, he worked in law enforcement and emergency medical services. During this time, he also worked in actively managing a construction and sign company owned by his family. He earned a commercial pilot and a flight instructor certificate and operated an aviation business in Kentucky. In the early 1990s, he started a successful technology company serving the apparel industry in the Caribbean Basin. In 2005, he transitioned to a career in higher education. He has held full-time faculty positions at the Southeastern Louisiana-UTH program in Honduras, Brazosport College, the University of Texas Pan American, and University of Texas of the Permian Basin.