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Effect of 2007-2009 Economic Crisis and Dodd-Frank Legislation on the U.S. Banking Industry

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Abstract

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Graduate Degree Bank Operations and Technology, Vanderbilt University, 1998

MBA, Amber University, 1994

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

This correlation research study was used to investigate the impact of the Dodd-Frank legislation on the U.S. bank industry. The economic crisis of 2007-2009 had a global and significant financial impact, some of which still reverberates. In the United States, the reaction was The Dodd-Frank Wall Street Reform and Consumer Protection Act, which took effect July 21, 2010. This act has recently been the subject of academic research and remains debated in congress, with discussion focused on its repeal. The publicly available, secondary data set from banks' quarterly filed regulatory reporting provided the data used in this study. Every FDIC insured bank in the United States was included in the study. The research question for the study examined the unintended consequences of Dodd-Frank legislation as posited by the theories of Bexley (2014) and Barth, Prabha, and Swagel (2012) that Dodd-Frank was a regulatory overreaction and could have a long-term impact on a substantial number of financial institutions. From 2007 through 2013, the number of banks declined by over 1,753 institutions; a 19.82% decline. The structure of the research presumed that banks that relied heavily on consumer fees for depository services would be negatively impacted by rule changes and regulation regarding such fees. There were two research questions. The first focused on the role of the new rules in the decline of the number of banks. The second explored the role of the legislation in the financial performance of banks. Regression results resulted in not being able to reject the null hypotheses. The implication of the study for social change is that policy makers who understand these relationships may construct better regulation to mitigate unfair and deceptive consumer fees for banking services.

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Chapter 1: Introduction to the Study

Introduction and Problem Statement

The economic crisis of 2007-2009 had a global and significant financial impact, some of which still reverberates today. In many countries, legislation and economic programs were enacted with the intent of minimizing the potential for similar future events. In the United States, the Dodd-Frank Wall Street Reform and Consumer Protection Act took effect July 21, 2010. The Dodd-Frank legislation consisted of over 2,300 pages, introduced around 400 new rules, and a created a new regulatory agency, the Consumer Financial Protection Bureau (CFPB).

As of July 2014, only 208 of the 398 regulations had been finalized, and more than 45% of congressional deadlines had been missed (Wallison, 2014, np). The Dodd-Frank legislation is the most significant changes to financial regulation since the Great Depression (Bexley, 2014). The findings of this study show that regulatory overreaction could have long-term impact on a substantial number of financial institutions.

Barth, Prabha, and Swagel (2012) stated that one of the intentions of Dodd-Frank was to solve the problems that required government funding and intervention to prevent the largest banks from failing during the 2007–2009 economic crisis. Rather than solving the "too big to fail" issue, Dodd-Frank legislation institutionalized it (Barth, Prabha, & Swagel, 2012). From 2007 through 2013, the number of banks declined by over 800 institutions, which amounts to a 15% decline (Federal Deposit Insurance Corporation [FDIC], 2015). The Dodd-Frank legislation may have unintended consequences that have contributed to the decline in the number of U.S. banks.

Broughel and Peirce (2013) have noted that, “As is typical of crisis legislation, Dodd-Frank included many provisions crafted in haste and many other provisions drafted before the crisis for which the act provided a convenient legislative vehicle” (p. 2). In their study, Broughel and Peirce investigated whether the Dodd-Frank legislation was an effective response to the 2007–2009 economic crisis. The authors concluded that Dodd-Frank introduced a whole new set of problems for financial institutions while failing to address the stated goals. They concluded that Dodd-Frank layed the groundwork for the next financial crisis and predicted that the number of banks in the U.S. industry will decline.

The U.S. banking industry is notably different than the banking industries of other major countries. In the United States, there are over 9,000 chartered financial institutions, including around 5,600 banks and 4,000 credit unions (Kowalik, Davig, Morris, & Regehr, 2015). In other major developed countries there are just a few, less than a dozen, financial institutions. In the mid-1980s, there were over 20,000 chartered financial institutions (Kowalik et al., 2015). From 2000 to 2010, the largest five financial institutions in the United States grew 108% from 19.4% to 40.1% of U.S. depository accounts (FDIC, 2015). As McCord, Simpson, Prescott, and Sablik (2015) observed, “The financial crisis of 2007–08 was a major shock to the U.S. banking sector. From 2007 through 2013, the number of independent commercial banks shrank by 14 percent—more than 800 institutions” (p. 1).

McCord and Prescott (2014) stated that since the 2007–2009 economic crisis, there have been numerous bank failures, bank bailouts, and bank mergers. One of the metrics they reviewed was the decline in the number of banks. They reported, “At the

end of 2007 there were 6,153 commercial banks in the United States. At the end of 2013, as the direct effects of the crisis were wearing off, the number of banks had dropped 14 percent, reaching 5,317" (p. 23). There were even larger percentage declines in the number of savings institutions and credit unions. In 2007, there were 1,250 savings institutions and 8,268 credit unions. In 2013, there were 936 savings institutions and 6,687 credit unions, drops of 25% and 19%, respectively (McCord & Prescott, 2014; FDIC, 2016; CUNA, 2016).

An intent of Dodd-Frank legislation was to address the "too big to fail" problem. However, Broughel and Peirce (2013) found that the Dodd-Frank legislation institutionalized the problem while providing a competitive advantage for the larger banks that can best afford the compliance costs associated with the rule changes. Dodd-Frank creates a regulatory environment that favors compliance and sophisticated procedures over market discipline and expertise (Broughel & Peirce, 2013). Larger banks headquartered in major metropolitan areas can now best afford the compliance, regulatory, legal, and analytic staff needed to comply with the new regulatory requirements. Many rural and community- to mid-tier-sized financial institutions do not have these resources, which has and will cause negative consequences while providing a disincentive for new bank entrants.

The legislation's most significant unintended consequence established a competitive imbalance in favor of the largest banks and "institutionalized the problem" (Broughel & Peirce, 2013, p. 12). A significant contributing factor to the 2007-2009 economic crisis, if not the primary contributor, was the overheated real estate market fueled by the creation of aggressive mortgages. The 2007-2009 economic crisis began

with a dramatic real estate market decline that included devaluations of over 50% in several different states. The Dodd-Frank legislation's "most striking omission…was its failure even to attempt to reform the broken housing-finance system in the United States" (Broughel & Peirce, 2013, p. 15). The legislation ignored Fannie Mae and Freddie Mac, the government sponsored mortgage buyers and creators of mortgage-backed securities, while many provisions of Dodd-Frank are entirely unrelated to the 2007-2009 economic crisis (Broughel & Peirce, 2013).

Bexley (2014) has claimed that the Dodd-Frank "act brought the most significant changes to financial regulation since the Great Depression" (p. 89). The findings of Bexley's study showed that regulatory overreaction could have long-term impact on a substantial number of financial institutions. As of 2007, "the average bank in the state of Texas spent $169,000 per year on regulation exclusive of bank examinations. . . in 2013 the cost of regulation is approximating $1,000,000 per bank per year cost" (Bexley, 2014, p. 95).

Purpose of the Study

The purpose of this quantitative correlation study was to test for unintended consequences of the Dodd-Frank legislation as posited in the theories of Bexley (2014) and Barth, Prabha, and Swagel (2012). I defined the impact of the Dodd-Frank legislation as the rate of bank failure and the declining financial performance of banks. The declining financial performance of banks may be hindering the number of new entrants. The dependent variable was generally defined as the change in certain key ratios, non-interest income results, and profitability reported in the years after Dodd-

Frank legislation. The controlling and intervening variables were controlled by focusing on specific types of non-interest income and were statistically controlled in the study.

Significance

This quantitative research study has three areas of significance. First my study serves as a practical contribution that fills a gap in academic understanding by focusing specifically on several quantitative key metrics before and after the economic crisis of 2007–2009 and the resulting Dodd-Frank legislation. Second, this study includes impactful data that may prove useful to academics and practitioners in finance and banking, and to those interested in evaluating the Dodd-Frank legislation. Third, my study has implications for social change because bank fees charged to consumers for banking services may disproportionately impact the low-income and other protected classes. Also, a declining number of banks may have in impact on pricing, innovation, and availability of credit and depository services; especially in underserved markets.

In the wake of the recent global financial crisis of 2007-2009, the Dodd-Frank legislation introduced new sweeping changes in rules intended to better protect consumers. In this study, I quantified the impact of Dodd-Frank legislation through correlation of Non-sufficient fund (NSF) fees, a specific component of non-interest income. NSF fees result from banks charging consumers for items presented when the balance is not sufficient to cover those items. The items typically presented to a transactional account, usually referred to as a checking account, include checks, ATM withdrawals, debit card transactions, transfers, and fees. For the past two decades, this source of non-interest income has provided banks a substantial source of income and

profit. Many retail banks focused lines of business and developed products to maximize non-interest income from consumer fees on depository services.

Dodd-Frank was intended to address the too big to fail problem. However, it appears that the legislation may have had the unintended consequence of institutionalizing the problem by increasing non-interest expense while decreasing non-interest income. Non-interest expense increased as a result of regulatory and compliance costs. Non-interest income decreased because of the changes in permitted methods of generating consumer fees related to insufficient funds and overdraft fees.

If one subscribes to the theory that the United States better fosters entrepreneurial and small business start-ups through the availability of credit from thousands of banks, then the early statistics should create concern. From 2007 through 2013, the number of banks declined by over 800 institutions (McCord, et al., 2015). Two-thirds of this reduction can be attributed to a historically low number of new banks. From 2000 through 2008, there were more than 135 new banks formed every year (FDIC, 2016). After Dodd-Frank, from 2011 to 2014 there were four (FDIC, 2016). In 2011 there was three, in 2013 there was one, and there were no new banks formed in 2012 and 2014 (FDIC, 2015).

After the economic crisis of 2007–2009 and the implementation of Dodd-Frank legislation rules, over 800 banks failed and a historically low number of banks are being formed. In this quantitative research study, I investigated if the Dodd-Frank legislation has had the unintended consequence of reducing the number of banks in the U.S. banking industry. I asked, “Has the Dodd-Frank legislation harmed the banking industry,

contributed to the failure of banks, contributed to on-going poor performance of banks, and impacted the number of new bank entrants?"

Background

Researcher

Consistent with the Walden University scholar-practitioner role, I have over 28 years as a banker or bank consultant. From 2002 to 2007, I served as Managing Director of Analysis Services for Sheshunoff Consulting, a bank consulting firm based in Austin, Texas. During a 14-month period, 50% of my time was billed to the American Bankers Association (ABA), an organization that represented banks and provided statistics to the Finance Committee of Congress. During this time, several banks provided data sets so that models could be developed and analytical answers could be provided to the Finance Committee of Congress. Collectively, the ABA, several banks, and Sheshunoff Consulting worked to help shape what would become the Dodd-Frank legislation.

At present, I remain focused on serving banks and credit unions as the Senior Vice President of Financial Institution Solutions at Saggezza, where I am the senior executive responsible for the financial institutions division. Saggezza is headquartered in Chicago, and has over 650 employees worldwide in India, the United Kingdom, and the United States. In this role, I deliver advanced analytical and big-data software solutions and consulting services that enable financial institutions to better manage sales, profit, and risk.

I previously served as adjunct faculty at Texas Woman's University where I taught finance and economics in the MBA Program, and was honored to teach at the Graduate School of Banking at Southern Methodist University. I hold three patents

related to statistical methods in banking, have completed nearly sixty bank core conversions, am a frequent speaker at banking and credit union conventions, and have been published over 40 times in banking publications and the Harvard Business Review.

The Dodd-Frank Legislation, the Federal Reserve, and the CFPB

The economic crisis of 2007-2009 had a global and significant financial impact, some of which still reverberates today. In many countries, legislation and economic programs were enacted with the intent of minimizing similar future events. Prior to the Dodd-Frank Act of 2010, the Federal Reserve created 74 FR 59033 on November 17, 2009, in which it recommended more consumer friendly processing methodologies, maximum daily overdraft service fee limits, and other recommendations. The Federal Reserve issued further details in FR 31665 on June 4, 2010. Consumers were given the right to select whether they would want debit card activity to be authorized by the bank when their account was negative.

The Dodd-Frank legislation created the CFPB. The CFPB extended the rules of Electronic Transaction Overdraft Services Opt In in 12 CFR 1005.17. Consumers were given the "choice to opt into their institution's overdraft protection program and be charged a fee for overdrafts for ATM and one-time debit card transactions" (CFPB, 2013, EFTA 17). These rule changes also addressed pay order processing, daily overdraft service fee maximums, daily negative account fees, and other specific items related to overdraft processing. The intent of the CFPB was clearly to extend a benefit to the consumers and provide relief from banks that sought to maximize overdraft service fees.

In the United States, the Dodd-Frank Wall Street Reform and Consumer Protection Act took effect July 21, 2010. The Dodd-Frank legislation consisted of over

2,300 pages and introduced around 400 new rules. Another result of Dodd-Frank was the creation of the CFPB. The CFPB functions to interpret, fill in gaps, and create rules to essentially enact Dodd-Frank legislation. The CFPB has introduced a number of sweeping reforms based on its interpretation of Dodd-Frank. The CFPB rules are in addition to the new regulations interpreted by existing bank and credit union regulators.

In 2010, testimony given to the Finance Committee of Congress in Washington D.C. revolved around Dodd-Frank being overly burdensome. The banks work to make credit available and price based on risk, but regulators have dramatically expanded both the scope and depth of examinations that review pricing. The CFPB and Dodd-Frank are burdensome not only to financial institutions, but also to regulatory agencies that must interpret the intent of the legislation, and decide how to measure and enforce it. Since the passage of Dodd-Frank, hundreds of banks have failed or consolidated as costs of compliance have increased (Coffee, 2011). The costs of compliance may have the unintended consequence of producing a decline in the number of banks.

Coffee (2011) noted that congressional testimony was not limited to those representing banks. Credit Union representatives stated that the Dodd-Frank legislation has created an "overwhelming number of new compliance burdens, which will take credit unions considerable time, effort, and resources to resolve." (Coffee, 2011, p. 797). Another witness also predicted that consolidations will increase within the credit union institutions just as has been predicted for banks.

The consensus conclusions of the Subcommittee on Financial Institutions and Consumer Credit hearings was that Dodd-Frank has introduced a "crisis of creeping complexity because it is not any one particular regulation but, instead, a large collection

of reforms" (Coffee, 2011, p. 798). In many cases it represents the straw that breaks the camel's back and will stifle the creation of new financial institutions in the future because the cost of compliance, reporting, tracking, measuring, and providing audited results is costly (Coffee, 2011). These costs are prohibitive to any financial institution less than a given asset size: some say $600 Million in assets and others argue closer to $1 Billion in assets. Note that 85% (7,000 of 7,800) of the financial institutions in the United States hold fewer assets than either of these figures (FDIC, 2014). There may be a disproportionate effect on the smaller, community-sized banks.

As of 2014, four years after the passing of Dodd-Frank, the opinions on the impact of the legislation are negative. Costs far outweigh the benefits and one of the primary intents, to solve *the too big to fail problem*, has been completely missed. Wallison (2014) concluded that regulatory agencies have been burdened with implementation and review of many components of the act. Changes from Dodd-Frank have overwhelmed the regulatory system, stifled the financial industry, and impaired economic growth. The legislation has required banks to increase the number of level of compliance and regulatory staff.

Chase Bank added 7,000 compliance human resources in 2013 and planned to hire an additional 3,000 in 2014 (Wallison, 2014). Statistics from the FDIC (2014) show 640 fewer financial institutions in 2014, than in the previous year. The loss of 640 financial institutions is a 4.7% decline from 2013 (Wallison, 2014). Industry analysts expect the shrinkage to continue, particularly among the smallest financial institutions, due to the continually increasing costs related to regulation and compliance.

Hills (2012) said crisis is often met with new legislation and reforms. Dodd-Frank represented the response to the 2007–2009 economic crisis, and as Hills observed, "There are radically differing views as to whether Dodd-Frank took the right approach, and whether it will be successful or even beneficial" (p. 42). Hills focused on *loophole lawyering* that contributed to, or even caused, the financial crisis. As an example, she discussed the Lehman Brothers' Repo 105 transaction. This transaction circumvented the law and is an example of loop hole lawyering.

There are two types of regulation: standards-based and rules-based. Standards-based regulation leave too much room for interpretation and give too many opportunities for lawyers to find loopholes (Hills, 2012). Most of Dodd-Frank introduces standards with poor definitions and even fewer specifics. The interpretation requires that rules be developed. Many of these rules have led to opt-in or opt-out clauses in disclosures in which customers can waive rights granted in Dodd-Frank. Financial institution disclosures were already lengthy and confusing before the new legislation and rules. Hills (2012) investigated limits to *bad lawyering* and the wrong incentives for bankers. The 2007–2009 economic crisis was made worse by lawyers who exploited loopholes. At the same time, bankers will seek to fill market demand. An example of this situation is well represented by the low quality mortgage backed securities. Lawyers changed the risk equation that directs bank action.

Hills (2012) sought to identify how to disincentivize lawyer willingness to aid irresponsible bankers in structuring and selling financial instruments and creating or exploiting loopholes. Lawyers (a) structure transactions and create the necessary disclosures to circumvent legislation, (b) provide legal opinions and interpretations to

protect client transactions as desired by the banks, and (c) help issuers of questionable financial instruments develop strategies to improve financial appearance and protect the issuing institution. Through this process, lawyers give advice as the law requires, but can choose to operate and exploit grey areas that range from aggressive interpretation to deception.

Hills (2012) provided several examples of such practices. The first was JP Morgan Securities structuring of CENts (Capital Efficient Notes) that leveraged a posture that enables these hybrids to qualify for D-basket equity credit from ratings agencies while qualifying for Tier 1 capital treatment for bank holding company issues. Secondly, Lehman was able to conceal $50 billion in debt on the balance sheet by moving cash transactions between multi-national subsidiaries. Lehman could not get an American law firm to give a favorable opinion on their Repo 105s because a specific value of the sale transaction could not be obtained. However, Lehman was able to find a law firm based in the United Kingdom that gave them the opinion they desired based on English law (Hills, 2012). Creative lawyering identifies, or innovates, these opportunities in exchange for legal fees, which were even based on contingent or conditional fees.

Lussier (2011) said the intent of Dodd-Frank was to rein in many bad actors who led to the economic crisis. However, the over 2,300-page legislation created hundreds of new burdens for good actors. Worse, large merchants capitalized on the opportunity to take political action and succeeded in attaching an amendment to limit debit card interchange fees collected by the largest banks (Lussier, 2011, p. 8). The National Association for Credit Unions (NAFCU) stridently opposed the interchange amendment. Ultimately, the amendment only affected institutions above $10 billion in assets, but all

are negatively impacted through a new debit swipe fee limit. NAFCU urged the Federal Reserve to consider the costs incurred when administering card programs (Lussier, 2011). These costs include compensating consumers under Regulation E, for fraud, data breach and data security, system expenses, and support costs.

The Federal Reserve was challenged by the poorly drafted law. The proposed cap on transaction fees could have a devastating impact on credit unions and their 92 million members (Lussier, 2011). Dodd-Frank has been heralded as a consumer protection act, but when legislation removes fees that offset, or partially offset, costs of a service that remains, revenue from other sources must result. The other option would be that banks and credit unions simply accept lower revenues. However, their investors are unlikely to begin accepting a lower return-on-investment.

As of 2011, free checking has almost vanished from the industry while many other fees have been increased, or created, to offset the reduced non-interest income previously sourced from NSF fees. Without free checking, a consumer may "earn" a free account by having a certain number of debit card transactions, paying other fees, or maintaining a minimum monthly balance that offsets the bank's cost of the account. Hayashi (2013) published a study on the recent rule changes and how the industry has responded. Banks have increased ATM fees to non-customers. This increase in fees is meant to increase non-interest income and, this increase in fees may have been a reaction to other sources of consumer fees decreasing. Foreign ATM fees result when an ATM card from one bank is used at an ATM machine of another bank. These fees are added to the amount of cash requested by the consumer and typically range from $2.00 to $3.50 per transaction which is an all-time high (Hayashi, 2013).

FDIC Statistics

The FDIC preserves and promotes public confidence in the U.S. financial system by insuring deposits in banks and thrift institutions for at least $250,000; by identifying, monitoring, and addressing risks to the deposit Insurance funds; and by limiting the effect on the economy and the financial system when a bank or thrift institution fails (FDIC, 2015). Quarterly, financial institutions are required to complete the FFIEC Report 041 Schedule RI–Income Statement. This reporting is filed with the Board of Governors of the Federal Reserve System, the FDIC, and the Office of the Comptroller of the Currency. This reporting is termed a *call report* in the financial institutions industry. Information collected is available to the public through the FDIC's Bank Data and Statistics databases.

Within the call report there are a couple hundred lines of detail. Within the non-interest income section, there is specific reporting within Section 5, *Non-Interest Income*, Line B, *Service Charges on Depository Accounts*, which includes overdraft service fees. In 2003, overdraft service fees were $28 billion (FDIC, 20XX). Overdraft service fees peaked in 2009 at $37 billion (FDIC, 2016). Following the rule changes, there was a decline to $31–$32 billion (FDIC, 2016). When the rule changes were made, the banks responded by increasing the individual fees from an average of $25 per overdraft event in 2009, to just over $30 as of 2013 (FDIC, 2016).

Deposit Account Fees and Non-Sufficient Funds Fees

Prior to the Dodd-Frank legislation, NSF fees were a tremendous source of non-interest income to many retail-focused financial institutions. A number of banks focused on maximizing NSF fee income. NSF events have also resulted in new types of products

and services. Overdraft products are credit products. These credit products result when a consumer creates an overdraft situation in their checking account. A line-of-credit is used to fund the resulting negative balance in the checking account. These credit products require that a consumer qualifies by demonstrating certain characteristics. Lower income consumers may have more difficulty in qualifying for such products.

From the consumer perspective, a rational person would likely not choose to make their account balance be negative. They would not choose to continue to make withdraws that result in an increasing negative balance and incur fees for numerous small dollar transactions. However, consumers are often unaware that their account balances are negative. This led to a situation in which transactions were not refused, but rather continued to be approved. Many times, small dollar debit card purchases would result in fees ranging from $30 to $36 per transaction. The Federal Reserve processing rules resulted in an immediate decline of $5 to $7 billion in overdraft service fees in 2009 (FDIC, 2012).

However, there are many factors at play and it is important for the reader to understand that there are several programs and factors at play with overdraft services. Prior to the rule changes, there were aggressive banks that sought to maximize overdraft services. These banks maximized overdraft service fees by offering a *benefit* to consumers that permitted them to overdraw their checking accounts. Typically, banks extended $300 to $500 for consumer accounts and $800 to $1,000 for business accounts. Other banks utilized more sophisticated algorithms that determined the customers' *ability to repay*, which increased the overdraft limits to $1,500 to $2,000 for consumer accounts and $3,000 to $4,000 for business accounts.

Czyrnik and Gendron (2014) discussed the problem with this *benefit*. Consumers rarely *intend* to overdraw their account and knowingly generate a $25 to $36 per item overdraft service fees. Worse, when the consumer unknowingly overdrew their account, they would continue making small dollar purchases, especially with their debit card, incurring additional per item fees. This issue sometimes led to individual consumers generating hundreds of dollars in overdraft service fees for small dollar purchases at fast food restaurants and other incidental purchases. These situations sometimes became popular news stories that attracted the attention of legislatures and were quickly labeled as *abusive.*

At the same time banks would provide a service to consumers by paying high dollar items first. The rational from the banks was that by paying high dollar items first, they were trying to provide a customer service and cover the more expensive checks such as mortgage payments, rent, and car loan payments. But use of this methodology also uses available funds for fewer transactions and the resulting negative balance is then left to generate numerous small dollar transaction items which resulted in more overdraft service fees for the bank.

Some commercial and wealth banks were largely unaffected by these rule changes. However, the retail-focused banks typically responded in one of two ways. First they would focus efforts on having consumers opt in. If a customer opts in, then the bank may continue to extend an overdraft program and continue to authorize debit card transactions which result in more overdraft items and more fees; basically banks could continue with the status-quo. One may ask why any consumer would agree to opt in (Czyrnik & Gendron, 2014). The basic answer is that despite the efforts of the Federal

Reserve or CFPB, the consumers either have little financial acumen or do not fully understand their new rights.

Secondly, banks may simply choose to return more items presented against a negative balance. If the bank is not being paid a commensurate amount to accept the risk of paying items against an insufficient balance, they will simply return the item to the merchant. This situation may result in lower bank fees to the consumer. But the consumer may pay more fees in total because the merchant that received the returned, unpaid check typically assess their own fees. Returned checks for mortgage payments typically carry a one-percent fee that is likely higher than the bank fee. Worse, returned checks may be given to the district attorney; however, analysis of whether more consumers have had check fraud cases filed against them is beyond the scope of this study.

Theoretical Framework

My goal in this quantitative research was to test the theories of Bexley (2014) and Barth, Prabha, and Swagel (2012). Bexley (2014) stated "that regulatory overreaction (Dodd-Frank legislation) could have long-term impact on a substantial number of financial institutions" (p. 89). Barth et al.'s (2012) quantitative results align Bexley's (2014) conclusions. Barth et al. focused their quantitative analysis on the large, interconnected financial companies (LIFCs), "which Dodd-Frank identifies as banks/bank holding companies with $50 billion or more in assets" (p. 271). Barth, et al.'s findings were limited to these larger banks, and mostly to the 29 banks identified as systemically important financial institutions (G-SIFIs). These two publications advanced academic knowledge about Dodd-Frank, and, in addition to the seminal studies I discuss

below, provided the framework for my study. Readers of my study will receive an added perspective on the impact of Dodd-Frank on the U.S. banking industry. In this quantitative study, I correlated the impact of non-interest income provisions and regulatory rule changes. I designed this research to address a gap in the academic literature and to produce important findings related to the roughly 7,700 banks that are not included in the large, interconnected financial companies. Research on the impact of Dodd-Frank on community-sized to mid-tier banks that is focused on noninterest income services has a direct social impact because the source of income is from consumer fees that may have a disproportionate impact on lower-income or protected classes and the number of banks available impacts the availability of credit and depository services, and pricing.

Research Questions

I designed two research questions to drive this investigation, and used secondary data from the FDIC to calculate three reliance ratios. Each ratio was calculated for data before and after the Dodd-Frank legislation. I used the ratios to measure the banks' reliance on consumer fees. The first reliance ratio was calculated by the percentage of noninterest income from NSF and account maintenance fees divided by total noninterest income. I calculated the second reliance ratio by the percentage of the bank's total noninterest income as a percentage of profit. I identified the top 10% and top one-third, and assigned the top 10% the label of *very high reliance*, and the top one-third *high reliance*. I coded banks with a *very high reliance* ratio, in 2005, 2006, 2011 and 2012, as 1 and those without a very high reliance ratio as 0. In a different field, Banks with a *high reliance* ratio were coded as 1. All other banks were coded as 0. Logistic regression, I

correlated results and compared these coded sets of banks with the remaining population of banks coded as 0. I also compared logistic regression results for banks codes as 1 in different years.

Research Question One

What is the degree to which, measured by correlation, banks with a *very high reliance* or *high reliance* on consumer fees have failed, or been acquired, as compared to other banks?

Ho: Banks with a *very high reliance* ratio or *high reliance* ratio, coded 1, were more likely to have failed by 2012 as compared to those banks codes as 0.

Ha: There is no difference in the failure or acquisition rate of banks coded as 1 as compared to banks coded as 0.

Research Question Two

What is the degree to which, measured by correlation, the change in profits of banks with a *very high reliance* or *high reliance* ratio different from banks that did not rely as heavily on consumer fees?

Ho: Banks with a *very high reliance* ratio or *high reliance* ratio, coded 1, were more likely to have had declining financial performance, as measured by profits in 2005 and 2006 versus 2011 and 2012, as compared to those banks codes as 0.

Ha: There is no difference in the profitability of banks coded as 1 or 0 from 2005 and 2006 as compared to 2011 and 2012.

Operational Definitions

Automated Clearing House (ACH): An electronic means of moving money and money-related information through the Federal Reserve. ACH transactions typically represent employer to employee payroll transfers, utility payments, and recurring medical, insurance, or gym payments.

Checking account: An account in which a consumer or business maintains a balance sufficient to cover transactions. Transactions primarily consist of checks and electronic debits and credits through ACH, ATM, debit card, internet banking, bill payment, or account to account transfers. When transactions exceed the balance in the checking account, an overdraft may result.

Checks: A form of payment from a checking account. Consumers or businesses use checks to pay merchants. Over the past several decades, checks were paper and physically passed moved from receiving bank, through the Federal Reserve, to the issuing bank. For the past 20 years, the physical checks have been scanned and exchanged between banks in an electronic format. Checks converted to an electronic format are exchanged much faster as compared to when the physical paper had to be moved. Both the paper and electronic checks settle directly to the consumer's checking account. The volume of paper checks has declined substantially in recent years and has almost entirely been replaced by electronic checks.

Debit Card: A physical card that functions as an ATM card but also bears the logo of MasterCard or Visa and permits the consumer to make purchases with MasterCard and Visa merchants. When using a debit card, no PIN is necessary for the

consumer but the merchant pays an interchange fee that is around 2%-3%. Debit Card transactions settle via the MasterCard and Visa network.

Overdraft Services: When a checking account balance is insufficient to cover transactions, the bank may either return the transaction or honor the transaction, which results in a negative balance within the checking account.

Overdraft Services Fee: Regardless of whether the transaction was paid or returned by the bank, the bank charges a fee for the manual and decision processing. This fee typically ranges from $30 to $36 per item. because of recent rule changes, most banks limit these fees to 4-6 per day.

Daily Overdraft Services Fee: the bank charges a daily fee for each day the account remains negative. The daily overdraft service fee is, typically, $5 to $10.

Overdraft Line: Some banks offer a loan product that a consumer may qualify for, and pay an annual fee for, that automatically transfer money from the loan to the checking account, to cover the negative balance resulting from transactions that exceed the checking account balance. Overdraft line fees are typically $10 to $18 per day, as opposed to overdraft service fees which are $30 to $36 per item. In addition, an annual fee of $15 to $30 may be charged for the overdraft line whether it is used or not.

Personal Identification Number (PIN): A number selected by the customer that, when it is used in combination with an ATM or debit card, enables customers to withdraw cash from their checking account.

Point of Sale (POS): Transactions that are facilitated by the consumer using a physical device, such as at a retailer, or on-line. POS transactions require the consumer to use their ATM or debit card and their PIN.

Nature of the Study

My research was of a quantitative, repeated measure, nature. Quantitative research is appropriate for the study of bank key metrics expressed in numerical figures and expressed as key ratios. I correlated repeated measures, before and after the Dodd-Frank, through logistic and linear regression. Logistic regression was used for research question 1 and linear regression for research question 2. The use of logistic and linear regression for a statistical analysis of numerical performance before and after a specific event is typical in research of this type (Campbell & Stanley, 1963; Kerlinger & Pedhazur, 1973). I used SPSS to conduct the regression analysis.

The seminal works I used provide further foundation included Campbell and Stanley (1963) and Kerlinger and Pedhazur (1973). Kerlinger and Pedhazur (1973) presented a multiple regression research method framework for behavioral research. Campbell and Stanley (1963) discussed statistical methods for quantitative research. Typical statistical methods include *t*-test, analysis of covariance, chi-squared, Pearson product moment correlation, logistic and linear regression, and Spearman rank-ordered correlation. Logistic regression is designed for measuring the differences in two results or Boolean variables that are set to either 1 or 0. In research question one, the bank either still exists in 2012 or it does not.

For research question two, multiple linear regressions were selected to measure the correlations between different variables related to the financial performance of the bank. These multiple variables include the coding to represent the reliance ratio, the amount of consumer fees on depository accounts, and total noninterest income. The

regression methodology for was framed based on the work of Campbell and Stanley (1963).

Using the two-way ANOVA analysis, I tested each research question to determine if the Dodd-Frank legislation resulted in an overall negative impact. The independent variables were the asset-size, the type of banking institution, and a calculated variable measuring the degree of reliance on NSF income and interchange income as a function of noninterest income and noninterest income to profit.

The dependent variables were the comparable performance of noninterest income and profit on banks categorized by their statistical reliance on noninterest income, before and after the 2007-2009 economic crisis. I used the resulting analysis to identify if categories of banks were impacted differently and as targeted by the Dodd-Frank legislation.

Possible Types and Sources of Data

I used a publicly available secondary data source from the FDIC. Banks are required to complete a quarterly FDIC call report that consists of hundreds of lines of detail. Dodd-Frank created new rules related to NSF fee income and debit card interchange fee income. NSF income and interchange income are separate lines on the call report. Banks were coded based on their *very high reliance* or *high reliance* on these sources of income. These sources of fee income may have a disproportionately negative effect on lower income, and protected-class consumers. I investigated if the Dodd-Frank legislation was effective, if banks failed or were acquired that were most affected, or if banks adapted to or circumvented the intended effects.

My data was quantitative. No data was obtained from any internet sources, no surveys or interviews were collected, and no Likert scales or other types of scaling were performed.

Social Change Implications for this Study

Banks in the U.S. banking industry play an important role in the extension of credit to individuals and small- to medium-sized businesses, and provide critical services to account holders in rural areas. Community banks provide competition to the larger banks, which extends a benefit to society through more service offerings and competitive prices. The vitality of the nation's community banks is important to the overall health of the economy and society. The United States has over 7,500 banks (FDIC, 2015), while most countries have five to twenty.

Entrepreneurs and small businesses in the United States are able to seek debt financing from dozens of institutions. Only in the United States is a start-up or small business able to solicit dozens of institutions. In the United States, there is a government backed Small Business Administration (SBA) that provides start-ups both SBA CDC 504, and additional capital SBA 7(a), loans (SBA, 2015). Banks compete and market to these small businesses that, in turn, provide new jobs and innovation to the marketplace. The number of banks in the United Stated results in competition and forces banks to innovate and provide leading edge services to make operations more efficient and be more appealing to clients.

Like small businesses that provide new job, individual consumers also benefit from the number of banks and competition within the U.S. banking industry. Unrelated to the real estate fueled economic crisis of 2007–2009, the Dodd-Frank legislation led to

rule changes that targeted noninterest income streams at community banks. Dodd-Frank legislation may have the unintended consequence of reducing the number of banks in the United States.

In this study, I sought to correlate the effects of these rule changes. Intuitive logic dictates that banks cannot simply forgo the loss of pre-existing revenue streams. Presumably, banks would have to find a way to replace lost revenue to maintain their return on capital to investors. As a result, free consumer checking accounts have largely been eliminated. Banks have implemented monthly account fees to offset the effected NSF fee revenue. The intent of the CFPB and Federal Reserve initiatives targeting NSF fees were intended to benefit consumers. However, I sought to assess the efficacy of these intentions.

Few industries within the United States have such extensive regulatory standards, measurement practices, and consequences for social change and corporate responsibility. The Community Reinvestment Act (CRA) requires the federal financial institution supervisory agencies, in connection with their examinations of certain depository institutions, to assess the institutions' CRA performance. A financial institution's performance in helping to meet the credit needs of its community is evaluated in the context of information about the institution (capacity, constraints, and business strategies), its community (demographic and economic data, lending, investment, and service opportunities), and its competitors and peers. Upon completion of a CRA examination, an overall CRA rating is assigned using a four-tiered rating system (FFIEC, 2015). These ratings are *outstanding*, *satisfactory*, *needs to improve*, and *substantial noncompliance*.

Banks receiving ratings of less than satisfactory, may not acquire, geographically expand, or deviate from their approved business plan (FFIEC, 2015). Banks have significant incentive to comply with CRA, and the consequences are dire if they do not achieve a satisfactory rating. As Bates and Robb (2014) noted, "The 1977 Community Reinvestment Act (CRA) established a bold agenda requiring financial institutions in the U.S. to serve the credit needs of low- and moderate-income areas, including traditionally excluded minority residential areas" (p. 1702). Bates and Robb studied the effects of CRA and found "that equality in loan access has been attained" (p. 1702). CRA has had a positive effect on loan availability (Bates and Robb, 2014, p. 1703). CRA incents banks to make loans to small businesses, and small businesses located in minority neighborhoods. Banks are also incented to provide individual consumer education, and evaluated on their fairness and lack of discrimination in lending and depository services.

CRA has several measures; the seven key measures are as follows: (a) loans to small businesses, (b) loans to minority-owned businesses, (c) loans in low-income districts, (d) matching loans in areas in which deposits were gathered, (e) investment in mortgage-backed-securities formed from mortgages in low income areas, (f) is educational programs in the bank's community, and (g) community involvement, volunteering, and other participation by bank employees (FFIEC, 2015).

Brescia (2014) investigated the effects of the CRA from its passage in 1977 to 2013. He found the results favorable, and stated that financial institutions are encouraged to help meet the credit needs of, and provide the depository services for, the local communities they serve using consistent, safe, and sound banking practices (Brescia,

2014, p. 1). The CRA was passed by Congress to improve financial institution responsiveness to the needs of low- and moderate-income communities.

CRA was expanded by the Home Mortgage Disclosure Act (HMDA). Together these acts prohibit discriminatory practices based on religion, race, and ethnicity. However, today the tests for discriminatory practices include statistical analysis of the lending decisions to insure consistency in regards to certain metrics such as loan-to-value, and debt-to-income. Banks must demonstrate that customer segments with the same financial metrics and credit score are priced consistently (Brescia, 2014). The CRA examination focuses on three areas: lending, investment, and services. The banks must demonstrate compliance in each of the three areas to receive a satisfactory rating (Brescia, 2014). Transparent and consistent lending practices coupled with proactive community service and education may result in an outstanding rating.

Dodd-Frank legislation further influenced social change and corporate social responsibility (CSR). Dodd-Frank legislation required the Securities Exchange Commission (SEC) to promulgate rules requiring banks to disclose executive compensation packages to shareholders (Jain, Blackford, Dabney, & Small, 2014). The SEC interpreted their instructions under Dodd-Frank to include compensation packages, frequency of the say-on-pay vote, golden parachute arrangements, and CRA ratings (Jain et al., 2014). CRA has a social change component.

Social change results from CSR. CSR is a concept in which organizations consider the interests of society. Corporations take responsibility for the effects of their activities on customers, suppliers, employees, shareholders, and other stakeholders. Corporations should improve the quality of the life of the workforce, their families, the

local community, and society (Lindgreen & Swaen, 2010). CSR is an on-going commitment by businesses to operate ethically and to contribute to economic development.

Lindgreen and Swaen (2010) said corporate social responsibility may be considered as a broader part of stakeholder perspectives on corporate governance which goes beyond profit maximization and transcends into issues pertaining to commitments that firms have to their communities in all areas of their operations (Lindgreen & Swaen, 2010, 2). On the other hand, the authors noted that corporate governance is also the balance between the economic and social goals of a corporation. This balance includes the efficient use of resources, responsibility in the use of power, and relationship and contribution to the local community.

Lindgreen and Swaen (2010) said that even though there is an accepted link between corporate governance and CSR, it is not clearly defined. There are several commentators who consider CSR as a form of external corporate governance. The term CSR has increasingly been intertwined with the concept of corporate governance and the fact that value of a corporation will increase if the corporation adopts and practices CSR (Lindgreen & Swaen, 2010). The authors suggested that the costs associated with implementing CSR programs are easily quantified, but that the correlation with better financial performance is hard to prove.

This external form of corporate governance manifests itself where firms worldwide are taking serious note about the impact of their business operations on society. Several firms have formulated CSR programs designed to balance their operations with the interests and concerns of external stakeholders such as customers,

unions, and local communities (Lindgreen & Swaen, 2010). Corporations are now integrating CSR as part of their core business strategy, thereby acknowledging the pressure of consumer's society, bottom line benefits, and a growing influence of socially responsible investment. Corporate activities effect the external environment. Consequently corporations are expected to be held accountable to society in addition to shareholders. Stakeholders and shareholders have an interest in the corporation's reputation. Many times it is good business for a corporation to be perceived as a good corporate citizen. Consumers prefer to do business with a corporation that supports the local community (Lindgreen & Swaen, 2010), and their expectations are increasingly focused on a corporation's role as good corporate citizen.

Corporate governance relates to the process and procedures set in place to ensure that the corporation operates efficiently, effectively, and maximizes profit in the long run. The governance structure includes internal controls provided by board committees and audit teams. Corporate governance in banking relates to compliance and regulatory excellence, which result in transparency. Corporate governance programs empower a focus on CSR. The infrastructure is already in place. CSR simply places an emphasis on making business decisions in a responsible manner that takes into account stakeholder and societal interests. However, even though CSR can leverage an established corporate governance framework, there is not, necessarily, a direct correlation between corporate governance and CSR.

A reputation as a good corporate citizen and a firm that supports the local community is correlated to increased corporate value. Many researchers have confirmed that the creation of value within the firm and the disclosure of information in an accurate

manner assists with the creation of value for stakeholders. It has been established that corporate social responsibility builds a positive reputation for the corporation within the community and promotes positive self-image and pride for employees. Positive social change and CSR can also improve corporate value (Lindgreen & Swaen, 2010). CSR can also affirm a banks culture and core values.

For banks, it is also an expectation of regulators, as prescribed by the CRA, that they take proactive efforts within their communities. Clearly, communities are better served by having more banks focused on social change efforts. Banks are examined on these efforts and receive a rating. A rating below *satisfactory* (FFIEC, 2015) restricts banks from adding new products, expanding geographically, opening new branch locations, acquiring other financial institutions, and deviating from their filed business plan. In the banking industry, strong corporate governance, CSR, and the promotion of positive social change are not only good business, but also a regulatory expectation.

Summary

In this chapter I have discussed several foundational components, and have presented the problem statement, purpose of the study, research questions, and conceptual framework. Further, I reviewed the theoretical framework, assumptions, and important terms to establish the basis of this quantitative correlation research study.

In the literature review in the next chapter, I expand upon the conceptual foundation. Chapter 2 includes an introduction, five detailed sections and a summary. After the introduction, I review peer-reviewed academic journal articles that discuss background, goals and objectives of Dodd-Frank. The second section includes a review of articles in which the author stated an opinion as to the future success and impact of the

Act. In the third section, articles and research studies of bank merger and acquisition activity is discussed. Bank merger and acquisition may relate to the possible unintended consequence of Dodd-Frank related to the decline in the number of banks. A factor in the declining number of banks is that no new banks are being formed. In the fourth section, bank capital, and risk management topics related to Dodd-Frank are reviewed. The fifth section on implications for social change and the Community Reinvestment Act is followed by a summary of Chapter 2.

In Chapter 3, I present the quantitative methodology of the study. Sections include data collection, different methodological considerations, and the plan for statistical analysis. In Chapter 4 , I present the results and findings of the research based on ANOVA statistical analysis of results before and after Dodd-Frank legislation.

Chapter 5 concludes the research with my interpretations of the findings. In it, I present limitations of the study and make recommendations for future research. Implications for positive social change and the conclusion are the final two sections of the research study.

Chapter 2: Literature Review

Introduction

The purpose of this quantitative correlation study was to test for unintended consequences of the Dodd-Frank legislation. Specifically, I sought to measure whether the Dodd-Frank legislation has resulted in a declining number of banks within the United Stated banking industry, and if the legislation is doing more harm than good. I quantitatively investigated the impact of Dodd-Frank legislation by examining the rate of bank failure and declining financial performance of banks related to account service fees, which have a social implication given that they originate predominately from consumers and small businesses. Account service fees were specifically targeted by Dodd-Frank with an aim to limit certain fees to consumers.

This literature review consists of five sections. The first includes more background on Dodd-Frank legislation including its details, goals, and objectives. The second includes post-implementation analysis of the legislation. The next three focalize bank mergers acquisitions and failures, banking capital structure and risk management, and implications for social change and the Community Reinvestment Act. Peer-reviewed, academic journal articles whose authors discussed the challenges to be addressed, contents, and intent of the legislation provide a foundation for this study.

Dodd-Frank: Details, Goals, and Objectives

Kim and Muldoon (2015) presented a summary of the nine major components of Dodd-Frank. In this study, I focused on a single component, namely, the creation of a new Bureau of Consumer Financial Protection (CFPB) which is empowered to establish and enforce new rules and standards. The CFPB seeks to create standards for banks and

other providers of financial services when dealing with consumers on financial matters (Kim & Muldoon, 2015, p. 96). The CFPB, picking up the initial pronouncement from the Federal Reserve, has created the rules and standards on how banks may charge consumer's for account services. In this quantitative correlation study, I sought to answer research questions regarding this change in rules and potential unintended consequences.

Kim and Muldoon (2015) studied other effects of the Dodd-Frank legislation. They specifically looked at the creation of a new Financial Stability Oversight Council, comprised of regulators, and responsible for overseeing any financial institution or set of market circumstances determined to be likely to result in risk to the overall economy. The Financial Stability Oversight Council can make rules in response to market conditions and may also require systematically important nonbank financial companies and large, "interconnected" bank holding companies to establish resolutions plans. These plans detail how an orderly resolution may be affected in the event of illiquidity or insolvency. Kim and Muldoon further noted that the reallocation of banking oversight responsibility to the Federal Reserve is appropriate when there may be a risk to the financial stability of the United States. Regulators have the authority to impose risk-based capital and liquidity standards for those institutions deemed systematically important. Currently, any bank with assets over $50 billion has been deemed systematically important. At present there are 38 banks in the United States with assets over $50 billion. Banks are prohibited from proprietary trading and investment in and sponsorship of hedge funds and private equity funds, and is required to limit relationships with hedge funds and private equity funds. Nonbank financial institutions supervised by the Fed also face restrictions on proprietary trading and hedge fund and private equity investments. Banks that securitize

loans must retain at least 5% of the credit risk of the created securities on their own balance sheet. Government agencies are instructed to undertake prompt and orderly resolution of failing bank holding companies or other financial institutions. Swap contracts must be settled through a centralized clearing house, thereby providing market-wide information and enhancing transparency.

After the 2007-2009 economic crisis, Dodd-Frank legislation became law in 2010. The CFPB was created from Dodd-Frank. One objective of the CFPB is to create a special office that protects elders against financial abuse and educates them about financial literacy (Humphrey, 2012, p. 101). As a result of the economic crisis, many aging Americans suffered substantial losses in their retirement accounts and home values, and some lost their homes as a result of being placed in a mortgage product that was not positioned for the realities of the economic crisis. The CFPB was given the authority, by Congress through Dodd-Frank, to be the single agency responsible for protecting consumers in their financial transactions and dealings.

Humphrey has noted, "One recent study indicates that Americans older than age 65 lost more than $2.9 billion to financial exploitation and fraud in 2010—a 12 percent increase from the amount lost in 2008" (Humphrey, 2012, p. 102). Humphrey (2012) found that women over the age of 85 fell victim to this type of crime at double the rate of men. The CFPB has a broad range of authority that range from requiring financial service providers to develop goals for programs that would provide financial literacy for the elderly to conducting research regarding best practices and effective tools to deliver products and services free from unfair, deceptive, or abusive practices.

Johnson (2011) observed that in the years preceding the U.S. financial crisis of 2007-2009, finance theorists introduced innovative methods, sophisticated quantitative models, and derivate instruments to measure and mitigate risk exposure, and that risk management expanded significantly. Despite these advancements, a lack of risk management was partially attributed to many institutional failures. Johnson noted that "as losses in financial markets escalated and caused liquidity and solvency crises, commentators sharply criticized directors and executives at large financial institutions for their risk management decisions" (Johnson, 2011, p. 2). The Dodd-Frank legislation was intended to address many risk management oversight issues and was focused even more on issues at complex financial institutions.

Johnson (2011) said that the Dodd-Frank legislation failed in its goals, and that legislation could have better tailored the necessary reforms. He contentended that continued evolution of risk management best practices is actually stifled by the requirements and structure of the legislation. Risk management had already evolved and was continuing to evolve. Johnson further noted that, as a result of the economic crisis, risk management changes should be more simply stated, specific, and limited to the goals of the legislation. Risk management evolution would quickly advance beyond the legislative mandates and focus on reducing the threat of systematic risk.

Johnson's (2011) study provided a good example to draw on as I developed my framework and methodology. After reviewing several components of the Dodd-Frank legislation, Johnson (2011) ultimately had a negative view of Dodd-Frank. Johnson (2011) provided a real-world example of a Chase Bank hedge that went wrong. The resulting losses totaled hundreds of billions of dollars (Johnson, 2011). The math,

statistics, and theory were advanced and the leveraged position continued to be expanded because of repeated success. Ultimately the market worse-case scenario occurred and, while the losses were staggering, they were not proportionally significant to the institution or when compared to the historic gains. The chief investment officer found himself before Congress and this was in spite of hundreds of full-time assigned risk regulatory examiners. In sum, Johnson argued that risk management must be allowed to evolve and expand in methods and scope, and that financial institution should be assessed on the robust governance, competence, and authority of risk management (Johnson, 2011). Often risk managers have decades of experience, are experts in quantitative methods, and their education exceeds that of the board members and regulatory employees. This results in a governance challenge.

Lussier (2011) said the intent of Dodd-Frank was to rein in many bad actors who led to the economic crisis. However, the over 2,300-page legislation creates hundreds of new burdens for good actors, and worse, merchants capitalized on a weakened financial services community by attaching an amendment to limit debit card interchange fees (Lussier, 2011). Lussier further noted, that Dodd-Frank created the Financial Stability Oversight Council (FSOC) as the new systemic risk regulator, with the authority to identify systemically significant institutions. Banks with this designation are subject to additional regulation by the Federal Reserve Board. Should banks with this designation be deemed to be at financial risk, the Federal Reserve is mandated to manage an orderly liquidation (Aditya, 2013). The Dodd-Frank legislation permeated through other regulatory agencies as well.

The NAFCU stridently opposed the interchange amendment. The amendment only affected institutions above $10 billion in assets, but all are negatively impacted through a new debit swipe fee limit. NAFCU urged the Federal Reserve to consider the costs incurred when administering card programs (Lussier, 2011). These costs include compensating consumers under Regulation E, for fraud, data breach and data security, system expenses, and support costs. The Federal Reserve was challenged by the poorly drafted law. The proposed cap on transaction fees could have a devastating impact on credit unions and their 92 million members (Lussier, 2011). Dodd-Frank is heralded as a consumer protection act but when legislation removes fees that offset, or partially offset, costs of a service that remains, revenue from other sources must result. The other option would be that banks and credit unions simply accept lower revenues. However, their investors are unlikely to begin accepting a lower return-on-investment. As a result, free checking has vanished from the industry. Today, a consumer may "earn" a free account with a certain number of debit card transactions or other fees, or maintain a minimum monthly balance that offsets the very real costs of maintaining an account.

Berger, Bouwman, Kick, and Schaeck (2011) said the financial crisis of 2007-2009 resulted in substantial real-estate market declines. Real-estate collateralized loans became distressed. Banks encountered trouble and many banks suffered losses that eroded capital. As a result, regulatory intervention provided capital support to resuscitate many banks. (Berger, et al., 2011)

Berger, et al. (2011) tested hypotheses related to the effects of regulatory intervention and capital support on bank risk taking and liquidity creation. The structure provides a useful example of a quantitative research study. They empirically examine the

effects of regulatory interventions such as restrictions on lending, dividend payouts, restructuring of business activities and capital support. They use a non-crisis period of 2002-2006 as compared to 2007-2009. (Berger, et al., 2011)

Berger, et al. (2011) concluded that banks do not increase risk in lending activity as a result of capital support provided through regulatory intervention. In fact, regulatory interventions and capital support are generally associated with statistically and economically significant reductions in both risk taking and liquidity creation; in the short run. In general, all banks decreased risk taking during such periods. Regulatory initiatives have the intended consequence of decreased risk taking, and the unintended consequence of diminished liquidity creation. (Berger, et al., 2011)

The Berger, et al. (2011) study provided a good example of format, structure, and methodology. Of course the topic is also relevant for my research topic. The study was conducted and published just years ago and considered a time period before and after the economic crisis. This study has contributed to my understanding in the general areas of format, quantitative research, and subject matter content.

Hills (2012) said crisis is often met with new legislation and reforms. Dodd-Frank represents the response to the 2007 – 2009 economic crisis. "There are radically differing views as to whether Dodd-Frank took the right approach, and whether it will be successful or even beneficial" (Hills, 2012, p. 42). Hills (2012) focused on "loop hole lawyering" that contributed, or even caused, the financial crisis. As an example, she discusses the Lehman Brothers' Repo 105 transaction. This transaction circumvented the law and is an example of loop hole lawyering. (Hills, 2012)

Hills (2012) said there are two types of regulation: standards based and rules based. Standards based leave too much room for interpretation and give too many opportunities for lawyers to find loopholes. Most of Dodd-Frank introduces standards with poor definitions and even fewer specifics. The interpretation requires that rules be developed. Many of these rules lead to the opportunity to create opt-in or opt-out clauses in disclosures in which customers can waive rights granted in Dodd-Frank. Of course financial institution disclosures were already lengthy and confusing before the new legislation and rules. (Hills, 2012)

Hills (2012) investigated limits to "bad lawyering" and the wrong incentives for bankers. The 2007 – 2009 economic crisis was made worse by lawyers that exploit loopholes. At the same time, bankers will seek to fill market demand. An example of this situation is well represented by the low quality mortgage backed securities. Lawyers change the risk equation that directs bank action.

Hills (2012) sought to identify how to disincent lawyer willingness to aid irresponsible bankers in structuring and selling financial instruments and creating or exploiting loopholes. Lawyers structure transactions and create the necessary disclosures to circumvent legislation. Lawyers provide legal opinions and interpretations to protect client transactions as desired by the banks. Lawyers help issuers, of questionable financial instruments, with strategies to improve financial appearance and protect the issuing institution. Through this process, lawyers give advice as the law requires but can choose to operate and exploit grey areas that range from aggressive interpretation to deceptive. (Hills, 2012).

Hills (2012) provided several examples. The first was JP Morgan Securities structuring of CENts (Capital Efficient Notes) that leveraged a posture that enables these hybrids to qualify for D-basket equity credit from ratings agencies while qualifying for Tier 1 capital treatment for bank holding company issues. Secondly, Lehman was able to conceal $50 billion in debt on the balance sheet by moving cash transactions between multi-national subsidiaries. Lehman could not get a American law firm to give a favorable opinion on their Repo 105s because a specific value of the sale transaction could not be obtained. However, Lehman was able to find a law firm, based in the UK, that gave them the opinion they desired based on English law. The creative lawyering identifies, or innovates, these opportunities in exchange for legal fees; which were even based on contingent or conditional fees. (Hills, 2012)

Dodd-Frank addresses central clearing counterparties (CCPs) and their role in the 2007 – 2009 economic crisis. Title VII of Dodd-Frank changed the mandatory clearing requirements in the over-the-counter (OTC) derivatives market (Johnson, 2013, p. 185). Johnson (2013) discusses these Dodd-Frank objectives and said the limited number of CCPs that execute clearing obligations was a concentration of systemic risk. Title VII should address this concern and also mandates risk management practices that must be demonstrated and will be reviewed by regulators (Johnson, 2013, p. 186). Finally the article deconstructs the theory of self-regulation versus third party examination. In the case of Title VII, Johnson (2013) argued that ensuring the safety and soundness of CCPs risk management is consistent with the public's best interest and should help mitigate systemic risk concerns (Johnson, 2013, p. 187).

Mitts (2012) focused on the Federal Deposit Insurance Corporation (FDIC) new rules implementing Title II of the Dodd-Frank Act. Title II pertains to penalties and a rules to recoup compensation paid to executives and directors of failed nonbank financial institutions. When the FDIC orders liquidation or receivership, then the FDIC may seek action against the executives and directors. This action is based on a negligence theory of liability but a direct causation between failure and the executive's, or director's, behavior must not be established. There is a presumed liability merely for having held the responsibility of an executive, or director. The executive or director may lose two years of pay regardless of a direct link to actions that caused or contributed to the failure of the institution. (Mitts, 2012)

Mitts (2012) suggested that this will result in executives gravitating to the most stable financial institutions. The FDIC new rules institute a difficulty for more risky institutions to attract good talent. This may result in anticompetitive effects and further promote concentration of talent and further institutionalize the too big to fail problem.

"The premise behind Dodd-Frank's rulemaking was to slim down - and in some cases curtail - banks' participation in risky transactions like bundling residential and commercial mortgages into securities and proprietary trading of distressed debt and other instruments, activities that contributed to the financial crisis" (Segal, 2015, p. 1). The act also has four other components. The first is how a bank is to be placed into receivership should it fail. There are several new laws that establish new capital requirements, consumer protection. The fourth establishes new rules regarding trading; especially over-the-counter derivatives. (Segal, 2015)

Five years since Dodd-Frank legislation became law, many rules are yet to be implemented or even written. Capital and liquidity requirements are still being phased in. Compliance costs have increased and the bigger banks can best absorb these increased costs. Rather than addressing the too big to fail problem, the cost to comply with Dodd-Frank rules has resulted in an economies-of-scale advantage for the largest banks (Segal, 2015). The community based banks have a further disadvantage as they cannot afford to hire the same number and type of individuals. For more rural based banks the problem is even more challenging.

Gruskin (2013) detailed several components of the Dodd-Frank legislation. The legislation is massive. The majority of it is still being defined and this will continue for the next several years. For example, Dodd-Frank gives new, broader reaching power to the FDIC to take control of a financial firm when it alone deems it to be insolvent or poses a systemic risk (Gruskin, 2013). The takeover criteria, however, has yet to be precisely defined.

Even during the formation of Dodd-Frank, distinguished professor of risk engineering Nassim Taleb stated that you cannot model the model error (Gruskin, 2013). Bell curves have tails and as results move further from the center of the bell curve, the error increases. Models have errors. Humans are fallible. No legislation can satisfactorily deal with tail risk, statistically unlikely events, and eventual market corrections (Gruskin, 2013). Dodd-Frank and international efforts, such as Basel III, that aim to make financial systems safer may translate into overconfidence that can only be tested when the next large bank fails or during the next crisis (Gruskin, 2013).

Dodd-Frank: Analysis of the Legislation, 2013 to 2015

The Dodd-Frank Act resulted in extensive changes for the U.S. banking industry. Posner and Weyl (2013) suggest that broad reform should be accompanied by a Benefit-Cost-Analysis (BCA). The trade-off of the regulation is between costs incurred to change business practices and comply versus the benefit of obtaining the intended result. (Posner & Weyl, 2013).

Existing financial regulation has a similar structure. Dodd-Frank expands upon many existing regulations. Dodd-Frank has tighter capital adequacy standards and limits the breadth of activities banks can undertake. Critics argue that some components will slow the circulation of credit and liquidity. The intended benefits focus on avoiding individual bank failures and systemic crises. The costs of bank failures and systemic crisis are high but two questions must be posed. First will Dodd-Frank achieve the goal of reducing the probability of these future events? Second, what is the cost to comply for the banking industry? Unfortunately, a parameter for translating such a reduced probability of a crisis into a dollar value with certainty, call it the cost of a statistical crisis, has not yet been derived (Posner & Weyl, 2013). Posner and Weyl (2013) present a framework to advance BCA for Dodd-Frank. Courts have recently focused on a sound economic basis of regulatory reform. Posner and Weyl (2013) suggest that time-may-tell but suspect that lost revenue, increased costs for both banks and government may not justify the hopeful benefit of avoiding the next market crisis. The authors plan a follow-up study to assess in the years to come and hope their suggested framework may aid with future research. (Posner & Weyl, 2013)

Prager (2013) reviewed the role of misaligned incentives and mismanagement in the 2007-2009 global financial crisis. Prager (2013) said compensation was based on short-term performance while bank performance is based on long-term outcomes. Mortgage funding rewarded production while the mortgages have an average eight-year life. Credit agencies focused on their annual activities but disregarded the future action of their own firms. CEOs were ultimately responsible for the misalignment of compensation. However, CEOs also benefited from the misalignment and, therefore, were not likely to change the compensation methodology. (Prager, 2013)

Prager (2013) said the Dodd-Frank Act of 2010 intended to correct many problems that contributed to the US financial crisis of 2007 – 2009. However, bank examiners had already made changes on several fronts. For example, regulators made changes to loan officer and executive compensation; requiring some portion of incentive compensation to be aligned with the longer term performance of the bank. Also, the role of an Enterprise Risk Manager was created and required for institutions over a certain size. Finally, an examination criterion was expanded. (Prager, 2013)

Prager (2013) argues that Dodd-Frank is of very limited value. Prager (2013) said that the leading cause of failures was mismanagement and / or an ill-fated luck. He cites Goldman Sachs versus Bear Stearns. The timing of examination was a contributor. Had Bear Stearns been examined months later, the market rebound, may have led to a different result. Also, Goldman Sachs had the benefit of seeing the regulatory reaction to a number of positions. He said political pressures may have also contributed to the Bear Stearns situation and lack of a bail-out plan.

Prager (2013) did support the premise that mismanagement contributed to the failure of several financial institutions. He gave an example of Goldman Sachs that is regarded for their Risk Management. The CEO and CFO often attended risk committee meetings. Challenging conversations were recorded in the minutes of the risk committees. However, at Bear Stearns, the Chief Risk Officer ("CRO") was often excused from risk committee meetings whenever, "business" situations were being discussed or when the conversation would become "tense". When the CRO expressed bearish views on mortgage derivatives, they were replaced by a new CRO. Other examples were given where the CROs did not have appropriate authority or, when they would challenge status-quo, their authority was specifically reduced. (Prager, 2013)

In conclusion, this article is fascinating and contributes to my knowledge of the Dodd-Frank and US economic crisis environment of 2007-2009. The author concludes with a pessimistic view of Dodd-Frank. He does not believe that policy and regulation will help avert a future crisis. In fact, the added costs and layers of regulation will stifle creativity and erode profits that result in capital which buffers institution's during economic downturns.

Nwogugu (2015) conducted a multi-disciplinary study with some empirical analysis. Nwogugu (2015) concluded that The Dodd-Frank Act was an inefficient and inadequate response. "Dodd-Frank has increased transaction costs and compliance costs for both government agencies and financial services companies" (Nwogugu, 2015, p. 520). As a response to the global financial crisis, Dodd-Frank failed at stimulating any significant economic growth.

Kim and Muldoon (2015) article consisted of four sections. The first three focused on the causes, major points, and objectives of the legislation. The fourth section was the most interesting and relevant to this research study. The fourth section assesses the effectiveness of the law in preventing future crises.

Kim and Muldoon (2015) discuss two primary shortcomings of the Dodd-Frank legislation. The first is through ad hoc intervention by regulators and the creation of the CFPB, the responsibility for avoiding future crises now falls squarely on the competence and good intentions of the regulators (Kim & Muldoon, 2015, p. 97). The second is that the legislation identifies two groups of financial institutions that receive special attention. These two groups include banks with a minimum of $50 Billion in assets and nonbank financial institutions deemed *systematically important*. This creates a class of banks that have more, and really constant, interaction with regulators. Many safety and soundness tests require examiners to be in the bank year-round. Other compliance and regulatory tests, such as trading activity, result in a team of regulators assigned to that bank. (Kim & Muldoon, 2015)

This special class of banks raises two primary issues. The first is if this will create a relationship between bank and regulator. The second is will a feedback loop that provides an influx of information from the largest banks as opposed to smaller community to mid-tier sized banks be formed and will resulting regulation have a detrimental impact on the 95% plus banks. In fact, the *larger class* of banks not only has more access and influence on governmental regulation but the legislation specifically includes a lever for the government to interact with these banks. President Obama said "The American people will never again be asked to foot the bill for Wall Street's

mistakes. There will be no more taxpayer-funded bailouts. Period." (Kim & Muldoon, 2015, p. 98). Thus a clear goal of the legislation was to address the *too-big to fail problem*; rather the legislation indoctrinates the *too-big to fail problem*. (Kim & Muldoon, 2015)

Kim and Muldoon (2015) make several conclusions. First the Dodd-Frank legislation does a good job and addressing many of the issues regarding *shadow banking*. Hedge funds must now register with the SEC. A lot of the over-the-counter derivatives trading must be performed through exchanges and clearing houses. All systematically important financial institutions will be regulated by the Federal Reserve System. (Kim & Muldoon, 2015)

The negative conclusions can be summarized in the following two points. The Dodd-Frank legislation has placed the responsibility of avoiding a future crisis squarely on the politicians, bureaucrats and regulators. Can we trust these unelected bureaucrats with being able to better assess financial and economic climate, create rules and enforce them in such a manner to avoid a recurrence of the 2007-2009 financial crisis? Secondly, critics point out that of the 385 new regulations, only a small proportion of them have been finalized. There is no end in sight in regards to drafting detailed rules to address the majority of the new regulations and, already, the compliance and regulatory burden is harming the U.S. banking industry. (Kim & Muldoon, 2015)

Czyrnik and Gendron (2014) analyzed stock market valuations of large financial institutions after the passage of the Dodd-Frank Act. Twelve key dates were used to construct the data. "Findings were significant for five of the dates including negative valuation effects associated with events suggesting more certainty of passage of Dodd-

Frank as well as positive valuation effects with other events leading to passage but suggesting provisions less onerous than previously anticipated" (Czyrnik & Gendron, 2014, p. 135). Conclusions were negative. Overall stock valuations declined in anticipation of constraints on the profitability of the largest financial institutions outweighing the positives related to increased systemic stability as intended by the Dodd-Frank Act. Findings on systemically important (SIFI) versus the top four too-big-too-fail globally influencing (GIFI) financial institutions did vary but not significantly to alter the conclusions that the assumed constraints on profit related to the increased compliance and regulatory burden outweigh the benefits of the intended systemic stability. (Czyrnik & Gendron, 2014)

Lu and Whidbee (2013) studied the effects of bank failure based on a number of criteria, using logit regression to investigate shared characteristics that may be explanatory to the bank failures. They found that 417 commercial banks and thrifts failed between 2007 and 2011. In total, these banks summed to $6,721 billion in total assets. While many studies have focused on the cause of bank failures, the authors were interested in studying the effects on bank failures within the specific time frame of 2007 – 2009 because it coincides with several events. These events include the global economic crisis, a number of banks receiving bail out funds from the Government, and the passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

The authors investigated whether different banking models were better suited to survive the recent financial crisis (Lu & Whidbee, 2013, p. 281). Their analysis contributes to the ongoing debate regarding appropriate regulatory reform in the banking

industry. Their conclusions shed light on whether banking-business model changes have an impact on the stability of the banking system.

Similar in structure, and using the same data source from FDIC Statistics from the Reports of Condition and Income (call reports), the authors compiled data on all commercial banks in the U.S. that "were in existence at the end of 2006, that had call reports at the end of both 2005 and 2006, had nonzero loan amounts and nonzero total income" (Lu & Whidbee, 2013, p. 284). They focused on charter type and excluded all banks that changed charter types, merged, or were converted, during the period of 2007 through 2010.

The authors investigated the relationship of bank structure and type of charter as it relates to bank failures. They found no significant direct impact of bank charter type on the likelihood of failure. However, they also investigated the likelihood of failure based on a fragile-index. Fragility was a function of capital, recent increase in loans, financial performance, funding strategy, loan portfolio composition, asset-quality and income structure (Lu & Whidbee, 2013, p. 297). But they did find that "de novo banks and those that experienced rapid loan growth were more likely to fail" (Lu & Whidbee, 2013, p. 282). They did find significance in the relationship of their fragility-index and likelihood of failure. Interestingly, they found no relationship in capital structure and the likelihood of failure.

While the authors did not find significance to conclude one charter-type was more likely to result in bank failure, they did find significance from that de novo institutions were more likely to fail after the economic crisis and passage of Dodd-Frank legislation. "Ironically, the Dodd-Frank Act removes the restrictions on de novo interstate banking.

Thus this deregulation legislation may contribute to a higher likelihood of de novo bank failure" (Lu & Whidbee, 2013, p. 296). Understandably de novo institutions would be more fragile.

The study by Lu and Whidbee (2013) was helpful in several ways. First of all they validated the use of my intended secondary data source from the FDIC and the use of call reports. They also provided a helpful format and stratification of descriptive data to describe the U.S. banking industry. They used logistic regression in a quantitative study and discussed their conclusions. Several of these characteristics contributed to the structure of this quantitative correlation study.

Stanton (2014) said that Dodd-Frank has resulted in unfinished business from the 2007-2009 financial crisis. Financial supervisors can provide feedback to bank management, ask good questions and require good answers, but that there is a gap between most regulators and large bank executives in terms of talent, knowledge, experience and ability. "The whale trades provide a striking case history of how a major bank, with 65 bank examiners on site, can keep a multi-billion-dollar derivatives portfolio off the radar screen of its regulator for [six] years, at least until it begins to lose money" (U.S. Senate 2013, 223–25, p. 217). This became clear when the London Whale trades resulted in a loss of $6 billion and had not even been deemed risky by regulators.

"Edmund Clark, chief executive officer of TD Bank, a bank that successfully navigated the crisis, articulates the goal: there must be 'productive working partnerships between the industry and its regulators, enabling both parties to agree in principle on what needs to be done, and on the least intrusive way in making it happen'" (Stanton, 2014, p. 689). However, we are far from this goal. Dodd-Frank legislation establishes a

number of new rules and regulations but, in the end, the examiners are often recent graduates and even experienced regulators are challenged to understand, much less counsel, executives that lead divisions of the top banks. In this regard, Dodd-Frank falls short.

Smith and Muniz-Fraticelli (2013) concluded that Dodd-Frank legislation has many shortcomings. The U.S. financial system is empowered by innovation. New products and services result from technological advances coupled with a search for more efficient methods. Dodd-Frank rules and regulations inhibit such innovation. Dodd-Frank regulations are too expensive for all involved- taxpayers, banks, and the government. The intended benefits of stability are outweighed by both direct and indirect costs. The negative effects of the direct and indirect costs inhibit the overall ability of the Act to curb financial instability in the future. In fact, these increased costs may decrease the number of banks over time, limit profits making banks less stable as it will be more difficult to raise capital, and present a significant challenge for the smaller and rural community banks. Instead of identifying what is permissible, financial regulation should be limited to the identification of prohibited practices. This is consistent with the IRS practice of prohibiting certain types of abusive tax shelters. Regulation should have a more fundamentalist approach.

Bank Mergers, Acquisitions, and Failures

"The financial crisis of 2007 – 2009 was a major shock to the U.S. banking sector" (McCord, Simpson, Prescott, & Sablik, 2015, p. 1). From 2007 to 2013 the number of banks in the U.S. suffered a reduction of over 800 institutions; a 14 percent decline. Most of this decline was in the dwindling number of smaller banks. While some

of this decline was caused by failure, most of it was driven by an unprecedented collapse in new bank entry (McCord, et al., 2015). If this change persists, it will have a large impact on the composition of the banking sector as well as the flow of credit in the economy (McCord, et al., 2015). The number of new banks entering the market from 1990 to 2007 was around 100 per year. Conversely, there have been three banks per year since 2010.

McCord, et al. (2015) said from 2007 through 2013, the most concentrated reduction in the number of banks falls within the segment with less than $50 million in assets. The number of these sized banks was reduced by 41 percent. Some of these banks failed, others were acquired, but the main cause of the reduction was the lack of new bank entrants into the market. In 2012 there were zero new banks formed. In 2013 there was a single new bank formed.

This reduction in the number of new banks is unprecedented over the past 50 years. The effects on the U.S. economy may be significant as smaller banks typically focus on serving consumers and small businesses. Newly formed banks focus on specific segments of the market where an opportunity exists. The reduction of banks of this size may adversely affect the availability of credit to these different sectors of the economy.

Historically, from 1960 to 1980 there were between 12,000 and 13,000 banks in the United States (McCord, et al., 2015). The Riegle-Neal Interstate Banking and Branching Efficiency Act was passed in 1994. "By 2000, the number of independent banks in the U.S. had fallen to less than 7,000" (McCord, et al., 2015, p. 2). This Act removed restrictions to branch banking and permitted banks to operate in different states without requiring a charter and corporate office in each state. There are three primary

ways for a bank to enter the market. "From 2011 through 2013, there were only four new banks formed total, compared to a yearly average of more than 100 from 2002 through 2008" (McCord, et al., 2015, p. 12). The first is that a credit union or savings bank changes their charter and becomes a bank. The second is that a bank, formerly under a bank holding company, spins-off and becomes an independent bank. The third is a new bank formation.

McCord, et al. (2015) analyzed the decline in the number of banks. The authors determined that had the average number of new banks been formed, then the actual decline would have been only 269; as compared to the actual number 836. The 836 bank decline represents a 14% decline in the total number of banks in the U.S. Two-thirds of the decline can be attributed to the near zero number of new banks formed during the 2007 to 2013 timeframe. The declining number of banks in the U.S. will have long-term effects.

While interest rates have been low since the 2007-2009 economic crisis, the net interest margin, or spread between the cost of deposits and revenue from loans, can be compared with several other timeframes. During similar timeframes the number of new bank entrants remained consistent. These findings were based on the 1981-1982 and 2001 recessions. After these recessionary periods, the number of new banks actually increased: this has not been the case since 2007-2009.

The authors expressed some opinions and ratios as to why new bank formation continues at historically low rates. The first is that the median compliance staff and audit costs have doubled as a result of the Dodd-Frank legislation. This result was based on survey results as the ratio of noninterest expenses to assets for banks with less than $1

billion in assets did not change significantly from 2007 through 2013 (McCord, et al., 2015). However, the FDIC call report, within the noninterest expense section, does not identify regulatory and compliance costs from other noninterest expenses (McCord, et al., 2015). Bank management may be reducing other expenses to fund increased costs for regulatory, compliance, and audit costs (McCord, et al., 2015). Secondly, newly formed banks are now subjected to more regulatory and audit burdens for five years versus the previous three. Thirdly, law firms that specialize in new bank formations report significantly increased time and costs since 2010. Fourthly two sources of noninterest income have been targeted by Federal Reserve and CFPB action and were researched within this dissertation. The authors conclude that they believe a driving force behind fewer bank entrants is the increased regulatory, compliance and audit costs and that if this trend continues the U.S. banking industry, banking services and the availability of credit will certainly be different (McCord, et al., 2015).

The number of banks in the United States has declined from 14,500 in the mid-1980s to 5,600 in 2015 (Kowalik, Davig, Morris, & Regehr, 2015). The authors analyzed "the financial characteristics of banks with assets of $1 billion or less that were acquired by an unaffiliated bank in voluntary merger from 2011 to 2014" (Kowalik, et al., 2015, p. 31). The decline in the number of banks results from either failure or merger and acquisition activity.

Banks agree to voluntary mergers for a number of reasons. "Bank mergers can result in more efficient banks and sounder banking system and thus benefit the economy, as long as banking markets remain competitive and communities' access to banking services and credit is not diminished" (Kowalik, et al., 2015, p. 32). The primary reasons

bank agree to voluntary mergers is to achieve greater economies of scale, and diversification by expanding lines of business or geographies.

In the years following the 2007-2009 economic crisis and the passage of the Dodd-Frank legislation, the number of bank mergers and failures spiked (Kowalik, et al., 2015). The effects of the economic crisis took some time to impact the performance of banks and contribute to the number of banks exiting the industry through merger or failure. Starting in 2009, the number of banks that were acquired or failed tallied almost 1,700; or twenty-five percent. In similar economic crisis periods in the 1980s and 1990s, failures exceeded mergers. However, in the years following the 2007-2009 crisis, failures spiked similar to the crisis periods of 1980s and 1990s but never exceeded mergers. The amount of merger and acquisition activity is unusual. The authors found that the banks acquired were less profitable than usual and that the acquired bank statistics were worse than their peers (Kowalik, et al., 2015). The authors analyzed a number of financial factors in the acquired banks including capital supervisory examination ratings, problem loans and assets. These factors are the key components of bank profitability and stability.

While the price of banks declined sharply, bank merger and acquisition activity increased dramatically. These conditions are unusual and while the authors did not theorize as to causation, it is logical that many banks may have merged to avoid failing. Consider that this spike in merger and acquisition activity coincided with the 2007-2009 economic crisis and the Dodd-Frank legislation that increased compliance costs and decreased revenue from a number of sources.

Gruskin (2013) said that Dodd-Frank changes one aspect of bank merger and acquisitions. "It provides that 'no taxpayer funds shall be used to prevent the liquidation of any financial company'; 'taxpayers shall bear no losses from the exercise of any authority under this title'; 'creditors and shareholders must bear all losses in connection with the liquidation of a covered financial company'; and that the FDIC shall not take an equity interest in any covered financial company" (Gruskin, 2013, p. 31). The legislation prevents the use of taxpayer funds to pay for the receivership process.

Should a firm fail despite the government's intervention, the federal government can now recoup any taxpayer loss by levying fines on the surviving financial institutions or acquirer of assets (Gruskin, 2013, p. 31). The legislation states "funds expended in the liquidation of a financial company under this title shall be recovered from the disposition of assets of such financial company" (Dodd-Frank Act, 2010). With the Dodd-Frank legislation, there is a taxpayer payback provision.

Adams and Jacob (2014) researched the relationship of regulatory burden and the number of new de novo banks. "From 1990 to 2008, over 2,000 new banks were formed, more than 100 per year. From 2009 to 2013 only 7 new banks were formed, fewer than 2 per year." (Adams & Jacob, 2014, p. 2) They conclude that the weak economy and low interest rate environment is likely to blame for the record low number of new bank entrants. They do agree that new regulations and regulatory pressures contributed but they suggest it was a minority reason; around 20% - 25%.

Adams and Jacob (2014) research contains many interesting statistics but their conclusion seems to originate from opinion rather than from a statistical or quantitative result. Being Federal Reserve analysts they also have a clear bias to not entirely blame

new legislation for the historically low number of new bank formations. It will be interesting to see if this trend changes with the continuing improved economy and, if so, their majority reason for the decline would be rendered moot leaving only the premise of new legislation and regulatory pressures.

During the economic crisis of 2007-2009, a number of banks failed. Cole and White (2012) quantitatively analyze factors that may have contributed to, or been predictive of the failures and differences between large bank versus small bank failures. The conclusions are that small banks and large banks fail for different reasons. (Cole & White, 2012)

Large banks failed primarily because of investments in single-family residential mortgages. Too much was invested assuming that housing prices would remain stable or continue to rise. Underwriting standards became poor and massive losses resulted from subprime and other adjustable rate single-family mortgages. (Cole & White, 2012)

Cole and White (2012) used a multi-variable logit regression model for five years 2004-2008. They sought to estimate how well various year-end metrics would predict bank failures in 2009-2010. The result was that the CAMELS rating for 2008 was the most predictive but that forecasting power diminished for the previous years. In the earlier years, the amount of real estate construction and development loans, commercial mortgages, and multi-family mortgages had a better predictive value. Smaller banks suffered most from losses on construction and development loans and commercial real estate rather than from single-family mortgage defaults. (Cole & White, 2012)

Kyle (2012) said bank capital may not predict failure accurately. In many cases, bank capital volatility is a better measure on the probability of bank failure. This is

because of the different amounts of bank capital. Over the long term, banks may cease paying dividends, consume retained earnings, contract lending activities to increase cash and absorb losses in the short-term. Volatility of capital is a function of the inherent risk contained with assets. Overall, banks that had a higher percentage of commercial real estate loans suffered the most. (Kyle, 2012)

The findings of Kyle (2012) and Cole and White (2012) justify a different amount of regulation for larger banks. Large banks change their business model more easily to take advantage of market opportunities. Smaller banks tend to be more consistent in their lines of business. Smaller banks failed in the 2009 – 2010 periods for consistent reasons as compared to previous periods. The larger banks failed because of a change in their asset mix that resulted in larger losses when the real estate market crashed in single family and commercial real estate asset values declined substantially. Capital and loan loss provisions were not sufficient to absorb the losses from the real estate market decline. "The lesson is clear: Heightened supervision of large financial institutions requires vigilance in looking for new risky business lines which pose systemic risks to the economy" (Kyle, 2012, p. 34).

Bank Capital Structure and Risk Management

Harding, Liang, and Ross (2011) studied the impact of capital requirements, deposit insurance and franchise value on a bank's capital structure. Banks are unique because they can raise governmentally insured debt through FDIC insurance. However, this status is not free of costs. Banks pay FDIC insurance and are subject to a high degree of regulation and supervision. Banks can also be placed in receivership by the FDIC.

Moral hazard theory studies on bank capital structure predicted that banks would choose extremely high degrees of capital leverage. The FDIC insurance cost does not adapt to increasing amounts of leverage. However, this is not the case. In other studies, it was predicted that banks would operate where capital ratios were equal to the regulated minimum. Again, this is not the case. (Harding, Liang, & Ross, 2011)

Banks that operate with levels deemed to be "well-capitalized" are wealth-increasing because regulatory costs are typically lower. Banks that operate at or below the regulatory minimum through capital distributions increase the owners' wealth; but at the detriment to the bank. Banks that operate below regulatory minimums for a period of time are often deemed insolvent and all shareholder value is eliminated through the banks being placed in FDIC receivership. (Harding, et al, 2011)

The authors find that properly regulated banks voluntarily choose to maintain capital in excess of the minimum required. Banks make this decision because capital position and ratios are important to firm franchise value and regulatory relations. A strong capital position makes it easier to expand, to open new banking centers, and make acquisitions. Also, a strong capital position avoids being placed in receivership with destroys franchise value.

Saha and Malkiel (2012) said a problem that often arises in applied finance is one where decision-makers need to choose a value for some parameter that will affect the cash flows between two parties involved in the operation of an illiquid asset. The values of cash flows depend on a number of unobservable parameters. Calculating a value of an illiquid asset is no simple task. The estimated valuation often results in disputes and an estimated range of value. Methods of reviewed include present value, annual worth,

future worth, internal rate of return, payback period, and benefit to cost ratio (Saha & Malkiel, 2012).

Illiquid asset valuation requires a mathematical model that predicts future revenue stream based on market value and economic conditions and trends. The authors propose a formula: V = F (x, y, z) where V is the predicted market value of the cash flow stream, x is the policy parameter, y is a collection of observable exogenous parameters, z is a collection of unobservable exogenous parameters, and their mathematical relationship is encapsulated in the function F. An example is given for a piece of rentable property. The variable x is the annual rental on the asset being leased; y is the length of the lease, frequency of the rent payments and discounts or premiums to the lease; z estimates changes to the future value of the asset such as the appreciating piece of land or depreciating building (Saha & Malkiel, 2012).

In practice, each of the variables must be estimated. Theoretical models exist and propose different approaches. Each model has assumptions, estimations, adjustments, and the opportunity to apply a discount or premium. Opinions about financial markets and illiquidity problems have an effect on valuation (Saha & Malkiel, 2012). Many unobservable parameters exist and information on historical performance, trends and future estimations or projections play a role.

Real world challenges include long-lived assets with no established basis because of endowment or gifting. Many leases have different conditions in which expenses can be gross or net to the tenant making comparison of two different revenue streams on similar properties difficult. Location of asset, especially in different markets or countries, and different geopolitical risk environments may dictate substantial adjustments in value.

These many different estimation parameters will result in different, and potentially wildly different, estimations. While many theories and models exist, the agent's interpretation and estimation is the largest variable in the valuation of an asset or company (Saha & Malkiel, 2012).

Camara, Lepetit, and Tarazi (2013) utilized the three-factor model of Fama-French (1993) and studied the changes in different components of regulatory bank capital and risk. Camara, et al. (2013) tested a method to estimate the cost of equity capital using the option pricing model. Traditional methods estimate the cost of equity capital based on historical data. The traditional methods utilize a look-back methodology. The authors built a model that is predictive, or forward-looking, by using the prices of stocks and stock options.

Cost of equity capital is an important task in financial management. Cost of equity capital is a measure that influences projects, goals, and research and development. Cost of equity capital has a significant impact on a firm's value. The most prevalent method to calculate the cost of equity capital is the capital asset pricing model (CAPM) (Camara, et al., 2013).

The forward-looking methods is meant to estimate the cost of equity capital. The option pricing formula is derived in an equilibrium representative agent economy based on the expected return of the underlying asset. The option formula is analytically tractable and can be easily applied to estimate the cost of equity capital of an individual bank (Camara, et al., 2013).

The research reveals a model that yields an equity risk premium close to the market equity risk premium; consistent with that reported by Fama-French (1993). But

four other results of the research advance the academic body of knowledge. First, the option-implied cost of equity capital estimates that resulting from the proposed model are more reasonable and stable than the Fama-French (1993) model. The mean and volatility estimates were both superior than those measured by Fama-French (1993). Second, the equity risk premiums of the market and industry portfolios calculated were consistent with existing literature. Third, the risk return relationship is made stronger through the option-implied cost of equity capital method as compared to the Fama-French (1993) model. Fourth, Camera, et al. (2012) said the cost of equity capital aligns and investor sentiments are reflected by the VIX index.

The financial crisis of 2007-2009 revealed the extent to which the U.S. financial system is exposed to the risk of a system-wide failure from insufficient liquidity. Financial regulators and legislatures, from economies around the world, responded with a new rules and legislation. Internationally uniform bank liquidity standards augment the existing Basel Capital Accord. The additional standards are termed Basel III. The major component of these standards is the liquidity coverage ratio requirement (Hartlage, 2012).

Tuch (2014) argued that large financial institutions present a significant challenge to regulators. Their conglomeration, lines of business, geographically locations, and breadth of operations are difficult to regulate. The example of J.P. Morgan Chase advising Verizon on an acquisition is given as an example. Around the time the investment banking consultants became an advisor to Verizon on a potential acquisition, the trading group began to take a position in the company that was later acquired. J.P. Morgan advised Verizon to make the acquisition and helped structure the deal. The

trading group position resulted in large gains for the bank. The *Wall Street Journal* broke the story that was investigated by examiners and the SEC. The findings revealed that no non-public-information was shared between the acquisition advisors and the trading groups. In the end, it was simply deemed to be a very profitable coincidence (Tuch, 2014).

A foundational component of Dodd-Frank is termed the Volcker Rule that bans certain financial institutions from engaging in proprietary trading based on potential influence from information. Even with such an occurrence, the size and scope of J.P. Morgan Chase buffered any enforcement action or any negative consequences. The Volcker Rule intended to promote financial stability of banks and prohibit trading when non-public-information may be available. Elements of the rule would also combat incentives that resulted in positions that resulted in losses during the economic crisis of 2007-2009. In conclusion, either the regulation is ineffective, or the size and scope of the larger financial institutions result in ineffective regulation (Tuch, 2014).

Hong and Wu (2014) performed an empirical study on a number of financial metrics to research the relationship between liquidity risk and bank failures in 2009-2010. A central premise in the study was that systemic liquidity risk was an important contributor to bank failures during that time. They calculated a Basel III liquidity risk measurement for U.S. commercial banks using FDIC call report data from 2001-2011. The resulting metric was termed a Basel III liquidity coverage ratio (LCR) and a net stable funding ratio (NSFR). The research conclusions were that while both NSFR and LCR have a limited effect on bank failures, systemic liquidity risk is a major contributor

to bank failures. The authors suggest that U.S. commercial banks should have an effective framework to manage liquidity risk (Hong & Wu, 2014).

The Basel Committee for Banking Supervision is comprised by a college of central bankers and other financial regulators from the United States and other advanced economies. The Basel committee proposed new liquidity requirements mean to promote stability within the banking industry. The liquidity coverage ratio requirement is a minimum threshold for short-term liquidity. The liquidity coverage ratio threshold is meant to strengthen bank liquidity and position banks to withstand a crisis situation. Comments are being considered until mid-2016 and the new standards will go into effect January 1, 2018 (Hartlage, 2012).

The author investigates whether the liquidity coverage ratio requirement undermines the goal of effective liquidity regulation and, instead, contributes to systemic risk. The liquidity coverage ratio will curb the risky funding strategies that resulted in some of the most egregious regulatory failures. However, the liquidity coverage ratio's highly disparate treatment of retail and wholesale funding may instead undermine financial stability by increasing competition for the types of funding preferred under the new standards.

The article presented an overview of the modern portfolio theory (MPT) and its limitations in the context of the recent financial crisis. Recommendations are made as to how investors should set financial goals and plans. MPT states that investment risk could be reduced and diversified within a portfolio that combines investments with different historical performance (Resnick, 2012).

During the past two decades, every conceivable desired rate of return became identified with a portfolio allocated among equity and fixed asset income classes. The 2007-2009 financial crisis exposed the volatility of MPT. Even diversified portfolios experienced substantial losses. Losses touched equities as well as fixed-income securities. MPT has faced additional investment challenges such as high inflation rates and capital losses due to high interest rates (Resnick, 2012).

Major limitations of MPT relate to assumptions, that after the 2007-2009 financial crisis, can be questioned: 1) are investment returns normally distributed? 2) is the correlation between asset classes fixed or changing over time? 3) do investors have access to the same information overtime? 4) is there a perfect trade-off between risk and return. That is, do riskier asset classes have a higher rate of return? Also MPT gave no consideration of the tax effect on investments.

Despite these limitations, MPT was fine until the 2008 credit crisis when all asset classes become correlated (Resnick, 2012).

Investors should delay investing until they have a full personal financial plan. Investors should be cautious and not rely on past performance only. Resnik (2012) said investors should consider diversifying investment techniques like dollar cost averaging and rotator accounts. Investors should avoid investments in individual assets and invest in mutual fund portfolios, and use index tracking investments such as exchange-traded funds (ETF). They should also consider new vehicles such as cash value in permanent life insurance. The author concludes with Warren Buffet's statement that the investor should focus on what is important today and not the return of investment but rather the return on one's investment (Resnick, 2012). Investors should be cautious about asset

class pricing especially with new products and equities offered by investment analysts. They should consider investment fees, withdrawal, and liquidity restrictions.

Acharya and Richardson (2012) applaud Dodd-Frank for attempting to place walls in the form of financial regulation. However, they said that Dodd-Frank fails to change anything in regards to Fannie-Mae and Freddie-Mac which ignores a significant contribution in the failure of the mortgage industry; which contributed significantly to the 2007-2009 economic crisis. (Acharya & Richardson, 2012). They conclude that the overhaul of the financial sector does not fully address private incentives of individual institutions to put the system at risk and leaves a great deal of uncertainty as to how we will resolve future crises. They ask a simple question, had Dodd-Frank been in place for years before the 2007-2009 economic crisis, would it have prevented the economic crisis. Their answer is no (Acharya & Richardson, 2012).

Akhigbe, Martin, and Whyte (2015) presented evidence of a positive effect of Dodd-Frank legislation. Their research concluded that discretionary risk taking by financial institutions has declined since the passage of the legislation. The largest financial institutions had the greatest reduction in risk. This is consistent with the stated goals of the legislation regarding the reduction of systematic risk and addressing the *too-big-too-fail problem*. The banks that were the most risky prior to Dodd-Frank experienced the greatest reduction in risk as measured by quantitative measures used in the research. Furthermore, banks that increased capital ratios and reduced the level of non-performing loans showed the greatest reduction in risk. Overall, the results of the research point to the efficacy of Dodd-Frank in reducing risk in the U.S. banking industry (Akhigbe, Martin, & Whyte, 2015).

Krainer (2012) compares and contrasts two approaches to attaining financial stability in the future. "The first approach is to attempt to establish a council of wise men and women supported by an army of highly skilled professional financial economists to formulate and implement regulations designed to prevent future financial crises that wreak havoc on the economy and require financial support from taxpayers" (Krainer, 2012, p. 121). The second approach is to design a taxing system that penalizes and rewards financial institutions on the basis of their contribution to the management of systemic risk. Extraordinary losses would result in a further tax while innovative methods to manage and mitigate risk would result in a reward. The industry should be incented to innovate risk management. The U.S. banking industry provides and contains the two primary ingredients to necessary to achieve this goal: the experienced executives and practitioners and the environment. The Dodd-Frank Act is a representation of the first approach.

"The law is more a tool for inflicting punishments and penalties for prohibited conduct than a device for communication of ethics and responsibility" (Shapiro, 2012, p. 17). There are already many laws that sufficiently address wrongful actions and fraudulent misrepresentation including the Securities Act, the Exchange Act, existing bank regulation and class action. "The Act is an overblown attempt at creating prophylactic measures imposed by lawmakers and regulators directly and indirectly to plan, direct, control, and influence risk taking in proprietary-sector organizations that thrive on successfully managing risk" (Shapiro, 2012, p. 18). What Dodd-Frank misses on, is the very goal it was to achieve: redressing proven deficiencies in the market.

The premise of Dodd-Frank is flawed (Prasch, 2012, p. 549). The three premises are that governmental oversight can better instruct, or even understand, processes and methods implemented and used by seasoned bankers, regulated through the mechanisms of what can collectively be termed Wall Street, and that any regulation can temper, much less prevent, market instability and correction (Prasch, 2012, p. 549). "By inference, any effort to devise or impose better rules for the modern financial system would be an exercise of folly or stunning hubris" (Prasch, 2012, p. 550). Risks exist in any business. Within banking risk management is integrated, finely-honed, intricate, and the invaluable source of job creation.

Implications for Social Change and the Community Reinvestment Act

"The 1977 Community Reinvestment Act (CRA) established a bold agenda requiring financial institutions in the U.S. to serve the credit needs of low- and moderate-income areas, including traditionally excluded minority residential areas" (Bates & Robb, 2014, p. 1702). Bates and Robb (2014) studied the effects of CRA and found "that equality in loan access has been attained" (Bates & Robb, 2014, 1702). CRA has had a positive effect on loan availability (Bates and Robb, 2014, p. 1703). CRA incents banks to make loans to small businesses, and small businesses located in minority neighborhoods. Banks are also incented to provide individual consumer education and evaluated on their fair, lack of discrimination, lending and depository services.

Brescia (2014) investigated the effects of the Community Reinvestment Act (CRA) since passage in 1977 to 2013. He found the results favorable. Through CRA, banks are encouraged to help meet the credit needs of their local communities. These needs must be met with consistent, safe, and sound banking practices. The CRA was

passed to encourage banks to better serve the needs of low- and moderate-income communities.

CRA was expanded by the Home Mortgage Disclosure Act (HMDA). Together these acts prohibit discriminatory practices based on religion, race, and ethnicity. However, today the tests for discriminatory practices include statistical analysis of the lending decisions to insure consistency in regards to certain metrics such as loan-to-value, and debt-to-income. Banks must demonstrate that customer segments with the same financial metrics and credit score are priced consistently (Brescia, 2014). The CRA examination focuses on three areas: lending, investment, and services. The banks must demonstrate compliance in each of the three areas to receive a satisfactory rating. Transparent and consistent lending practices, coupled with proactive community service and education may result in an outstanding rating.

Brescia (2014) analyzed the activities of banks, both before and after CRA exams, to determine whether periodic CRA examinations tended to lead to more risky lending; to lower and moderate income communities. The National Bureau of Economic Research conducted a study and reviewed bank lending patterns from 1999-2009. They concluded that CRA did cause banks to make riskier loans during this time period, especially from 2004-2006. They also concluded that CRA had a role in the 2007-2009 economic crisis.

Brescia (2014) disagrees with the findings of the National Bureau of Economic Research; particularly in the link between CRA and the contribution of sub-prime mortgages to the economic crisis of 2007-2009. "The CRA covers only depository institutions and at least ninety-four percent of all subprime lending during the height of the subprime mortgage market was beyond the scope of the CRA" (Brescia, 2014, p. 2-

3). Prior to the economic crisis of 2007 – 2009, home prices had soared. Some sub-prime features permitted 95% - 105% mortgages based on the appraised value. "In 2005, roughly half of conventional home purchase loans made to black families and Latino families had sub-prime features, while just 17.2% of conventional mortgages to non-Hispanic whites had such features" (Brescia, 2014, p. 11). The economic crisis of 2007 – 2009 included precipitous declines in real estate value, as much as 50% - 60% in some markets. As a result bank foreclosures displaced a large percentage of low and moderate income residents. Brescia (2014) said foreclosures on African-American and Latino communities indicate disproportionate losses within these communities. The full impact of losses far exceeded early predictions. Homeowner equity in the Unites States declined $9.1 trillion.

CRA is an important component of community reinvestment and has implications for social change. CRA is a regulatory mandated *corporate social responsibility*. Research from the Federal Reserve Bank revealed that only six percent of *higher-priced loans* were subject to CRA. Also, CRA does not cover loans outside a banks designated CRA lending area. Brescia (2014) disagrees with the findings of the National Bureau of Economic Research and concludes that "CRA played no appreciable role in causing the financial crisis" (Brescia, 2014, p. 38). "Although the CRA did not cause the crisis, it did fail to prevent the very harms it was designed to prevent from befalling the very communities it was – and still is – supposed to protect" (Brescia, 2014, p. 4). CRA is ineffective in terms of limiting losses to banks and limiting exposure to low- to moderate-income communities during an economic crisis.

Dodd-Frank legislation further influenced social change and Corporate Social Responsibility (CSR). Dodd-Frank legislation required the Securities Exchange Commission (SEC) to promulgate rules requiring banks to disclose executive compensation packages to shareholders (Jain, Blackford, Dabney, & Small, 2014). The SEC interpreted their instructions under Dodd-Frank to include compensation packages, frequency of the say-on-pay vote, golden parachute arrangements, and CRA ratings (Jain, et al., 2014).

Social change results from CSR. CSR is a concept in which organizations consider the interests of society. Corporations take responsibility for the effects of their activities on customers, suppliers, employees, shareholders and other stakeholders. CSR is an on-going commitment by businesses to operate ethically and to contribute to economic development. Corporations should improve the quality of the life of the workforce, their families, the local community, and society (Lindgreen & Swaen, 2010).

Lindgreen and Swaen (2010) said corporate social responsibility "may be considered as a broader part of stakeholder perspectives on Corporate Governance which goes beyond profit maximization and transcends into issues pertaining to commitments that firms have to their communities in all areas of their operations" (Lindgreen & Swaen, 2010, 2). On the other hand, the authors said corporate governance is also the balance between economic and social goals of a corporation. This balance includes the efficient use of resources, responsibility in the use of power, and relationship and contribution to the local community (Lindgreen & Swaen, 2010).

Lindgreen and Swaen (2010) said even though there is an accepted link between Corporate Governance and CSR, it is not clearly defined. There are several commentators

who consider CSR as a form of external corporate governance. The term CSR has increasingly been intertwined with the concept of Corporate Governance and the fact that value of corporation will increase if the corporation adopts and practices CSR. The author suggests that the costs associated with implementing CSR programs are easily quantified but that the correlation with better financial performance is hard to prove (Lindgreen & Swaen, 2010).

This external form of corporate governance referred to above manifests itself where firms worldwide are taking serious note about the impact of their business operations on society. Several firms have formulated CSR programs designed to balance their operations with the interests and concerns of external stakeholders such as customers, unions, and local communities. Corporations are now integrating CSR as part of their core business strategy thereby acknowledging the pressure of consumer's society, bottom line benefits and a growing influence of social responsible investment (Lindgreen & Swaen, 2010).

Corporate activities effect the external environment. Consequently corporations are expected to be held accountable to society in addition to shareholders. Expectations are increasingly focused on a corporation's role as "good corporate citizen". Stakeholders and shareholders have an interest in the corporation's reputation. Many times it is good business for a corporation to be perceived as a good corporate citizen. Consumers prefer to do business with a corporation that supports the local community (Lindgreen & Swaen, 2010).

Lindgreen and Swaen (2010) said corporate governance relates to the process and procedures set in place to ensure that the corporation operates efficiently, effectively, and

maximizes profit in the long run. The governance structure includes internal controls provided by board committees, and audit teams. Corporate governance in banking relates to compliance and regulatory excellence. Such items result in transparency. Corporate governance programs empower a focus on CSR. The infrastructure is already in place. CSR simply places an emphasis on making business decisions in a responsible manner and where the impact of such decisions on stakeholder and societal interests are regarded. However, even though CSR can leverage an established corporate governance framework, there is not, necessarily, a direct correlation between corporate governance and CSR.

A reputation as a good corporate citizen and a firm that supports the local community is correlated to increased corporate value. Many researchers have confirmed that the creation of value within the firm, and disclosing information in an accurate manner, assists with the creation of value for stakeholders. It has been established that corporate social responsibility builds a positive reputation for the corporation within the community and promotes positive self-image and pride for employees. CSR can also affirm a banks culture and core values. Positive social change and CSR can also improve corporate value.

The Fok (2013) article is the last in the series of four articles adapted from the author's doctoral research. The article is consistent with Walden University's culture as it focuses on social change in the form of a review of social responsibility as practiced by financial institutions. The author sets out a quantitative methodology to enable a general statement to be made for the existence and the properties of the Common Good (CG) originated from the Holy Scriptures by using a global sample of banks in a time horizon

of three years from 2006-2009. This research will confirm the state of the Common Good as veiled partially that the Adam Smith's Self-Interest Paradigm is unable to supplant it even after two centuries of capitalism. The Separation Thesis is demonstrated to exist as an alternate proof of the existence of the Common Good. The counterfeit conscience is common in usage. The Obiecto electo (the act) of the Common Good i.e. corporate philanthropy has a definite statistical correlation with the Corporate Financial Performance (CFP) by Analysis of Variances (ANOVA) and Granger's causality of Fama French Adjusted Stock Returns. This provides empirical results to affirm both the nature of the Common Good and the condemnation from Pope John Paul II against those false philosophies.

The problem was clearly articulated and the structure of the analysis focused on providing evidence to support the problem being addressed. There were several research questions listed, four, and each had a clearly stated null and alternative hypothesis. The author stated that he would use SPSS for the statistical analysis. The theoretical concept was clearly stated, the section labels included the introduction, statement of the research question and the hypothesis were presented in an academic format.

"H1: The Self-Interest Paradigm cannot completely supplant the CG practiced in firms.

The H1-0 Null Hypothesis is the complete veiling (non-practice) of CG.

The sample can be generalized to the population. Differing accounting standards may prove to be an issue." (Fok, 2013, p. 4) H1 asks how many firms within a random sample are currently practicing CP within CG.

The literature presented included several works and all seemed relevant to the overall study. Articles quoted, in terms of theory, spanned from 1991 to 2009. So not all articles were within the past five years but for the foundation in theory I believe it is acceptable to span a longer timeframe. The author presented a clear and non-biased approach to his topic.

The methods and research design were clearly stated and data sampling, data analysis and a discussion of the population was presented. The sample focused on the single industry of banking but included banks from many different countries. The study focused on banks that mentioned Corporate Philanthropy ("CP") in their public filings; 10k in U.S. and IASB in the U.K. The sample was then further reduced to a sample of banks that had publicly available information and key metrics from 1993 to 2009. The number of banks that met this criterion was 1,750. From the 1,750, 197 were selected randomly for the study. The samples represented 11.2% of the population. The population and sample were then each further reduced because of unusual shocks, because the company did not include detailed financial statements and because there was no stated market capitalization. In the end the population was 1,598 and 179.

The quantitative methods were discussed and seemed appropriate to the study while providing a good example in both format and content for this student. The sample size seems fine to the population but it is not clear as to why 197 were selected as a sample of the overall population. It was not clear if the population of 1,750 banks were entirely within the U.K. or if some were within the U.S. Also the author discussed the CP as contributions to different charities and several different religions yet I would have like to understand the distribution to each religion group.

The author is clearly Catholic but did not speak to any potential bias within the study. Also, because there were many countries included in the study, many countries had a very small sample of 1 or 2. There was no discussion on how results may vary when a country only has 1 or 2 banks within the sample. There was no statement indicating any IRB approval but the data was publicly traded bank data so participant rights should not be of concern. Given the data set and information provided, the data could be verified and the research could be recreated by others seeking to investigate the results.

Overall my impression of the study was that this format provided an excellent example of both form and content. The introduction, theoretical framework, literature review, statement of purpose, research questions, hypothesis and discussion of the methods of statistical analysis and findings were clearly presented. Another question relates to the effects on outlying data or countries with a small population and how they may individually compare to the sample statistics. While there were several issues raised, the analysis of what could be done differently provides guidance for this quantitative correlation research study.

Pope and Lee (2013) posed the question of whether Dodd-Frank financial bounties and anonymous reporting channels will have a positive impact on more ethical behavior in banks. Pope and Lee (2013) believe that this component of the Dodd-Frank legislation will have a positive impact and ask if this model could be expanded to other companies and industries. The impact may result in positive social change.

Within the Dodd-Frank legislation, a financial bounty is paid to whistle-blowers. Pope and Lee (2013) posit whether individuals, given more opportunity to receive financial bounties by reporting bad intentions and questionable acts, would improve

corporate social responsibility (Pope & Lee, 2013, p. 597). Would the opportunity to earn financial bounties prompt more reports of unethical behavior? (Pope & Lee, 2013, p. 597) While SOX requires companies to provide employees with an anonymous reporting channel option, the Dodd-Frank legislation provides a mechanism to reward the anonymous whistle-blower (Pope & Lee, 2013, p. 597). These findings may help corporate management, government regulators, policy makers and accounting researchers and help determine if financial bounties in the private sector could encourage whistle-blowing.

Kim (2014) compared the whistleblower and financial reward structures of section 922(a) of the Dodd-Frank Act to the Korean Article 435 of the Financial Investment Services and Capital Markets Act. "Both seek to encourage whistleblowing by providing for financial rewards and protection for whistleblowers" (Kim, 2014, 317). Kim (2014) compared the results of both programs several years after they had been in place. Conclusions were that whistleblowing has been more effective under the Dodd-Frank Act as compared to the Capital Markets Act. The SEC has reported high-quality tips and has resulted in successful enforcement actions and a substantial amount of financial rewards have been paid. Kim (2014) makes several recommendations as to how the Korean Capital Markets Act can be changed to leverage components of the Dodd-Frank Act and improve the social impact realized by the whistleblower initiative and rewards programs that incent more ethical behavior and provide corrective action through incentives to insiders that report such behavior.

Government remains the primary entity focused on social change, but a growing number of corporations are being increasingly held accountable. Unfortunately this

accountability is still increasingly exercised through the court of public opinion, more than the court of law. Corporate legal accountability for human rights abuse has not been moving in the right direction. The court of public opinion for companies is intimately linked to a company's social license to operate. Many corporations realize the benefit of providing quality jobs, taking an active role in their community, and consistently delivering quality products and services. Increasingly, corporations are being measured on their active contribution to social change and the communities they serve.

Summary

The foundation of this quantitative correlation study is provided by this literature review. The first section provides the background on the Dodd-Frank legislation details, goals, and objectives. The second presents post-implementation analysis of the legislation. The academic literature to date paints a gloomy assessment of the legislation. Only a minority of the legislation has been enacted and already the compliance and regulatory costs are high. There are many systemic risks and problems with rules implemented; particularly related to the largest banks being elevated into a separate class. The resultant of many individual issues is that there have been virtually no new denovo banks formed since Dodd-Frank legislation was enacted in 2010. In prior decades, the U.S. banking industry witnessed nearly 100 new bank formations each year. In the five years since, there have been only a handful total.

The third section points to a continuing trend of mergers and acquisitions. Mergers and acquisition, especially while there are no new bank formations, has resulted in a reduction in the number of banks by nearly 20%. The fourth section reviews banking

financial results and a thematic discussion on the impact of Dodd-Frank. The fifth section discusses implications for social change and the community reinvestment act.

This quantitative correlation study focuses on the consumer and social change impact of the Dodd-Frank legislation. This is accomplished by focusing on account service fees before and after the Dodd-Frank legislation enactment in 2010. Prior to 2007, banks charged specific customers for NSF activity while providing free checking accounts. When NSF fees were deemed *too high*, first the Federal Reserve, and then through provisions within Dodd-Frank and subsequently further detailed by the Consumers Financial Protection Bureau (CFPB), which was created by the Dodd-Frank legislation, banks responded by ending the free checking account era and have begun a trend to assess all accounts with a monthly maintenance fee.

Dodd-Frank had several goals and objectives. Eight were listed in the literature review introduction. Three have been discussed within the goals and objectives section. These three were Title VII that changed the rules for trading, the creation of SIFI and GIFI classes of financial institution that receive enhanced examinations, and the creation of the CFPB. The CFPB has several responsibilities. My research focuses on the CFPB expansion of the Federal Reserve (2009) rule changes for the processing and charging of non-sufficient funds (NSF) or over-draft items presented to a bank depository account. It is the impact of this third initiative and potential unintended consequence that this correlation research study seeks to measure. The research questions were posed in section one, the quantitative correlation research methodology is presented in chapter three and the results are discussed in chapter four.

This study seeks to three primary research questions. First did banks that relied heavily on such fees, in 2005 and 2006, fail or vanish from the data set because of being acquired, at a higher percentage than other banks? Secondly, did banks that rely more heavily on such consumer paid fees change their business model as intended by Dodd-Frank or did they simply spread the fees from the NSF customers to all consumers through monthly maintenance fees or simply work-around the legislation via lawyering and *consumer opt-in*? Thirdly, did banks most affected by the legislation simply suffer declined profits which continue to languish through 2012 to 2014?

The literature review exposes certain gaps in the existing academic research regarding an analysis of consumer account fees and the impact of Dodd-Frank on community to mid-tier sized banks. The existing literature focuses, primarily, on one of four common components of Dodd-Frank legislation. The first is an analysis of derivative and trading activity and rule changes. The second topic centers on loan officer and executive compensation. The third expounds on different aspects, the status, and progress of individual components of the act. The fourth analyzes the impact on the largest banks and financial service providers identified as being either *significant influencers* or *globally influencing*; SIFIs and GIFIs.

In contrast, this quantitative correlation study focuses on all banks, regardless of asset size. The research questions have a social impact component as they focus on billions of dollars in consumer generated account fees. The hypotheses tests if Dodd-Frank has had the intended effect or if the U.S. banking industry has been harmed by unintended consequences.

Chapter 3 outlines the design and research methodologies used to build the quantitative correlation study. Chapter 4 highlights the results of the proposed research, while Chapter 5 provides conclusions, summarizing discussion, findings of the research questions, recommendations for future study and organizational practice, and research implications for social change.

Chapter 3: Research Methodology

Introduction

The economic crisis of 2007-2009 had a global and significant financial impact; some of which still reverberates today. In many countries, legislation and economic programs were enacted with the intent of minimizing the potential for similar events in the future. In the United States, the Dodd-Frank Wall Street Reform and Consumer Protection Act took effect July 21, 2010. The Dodd-Frank legislation consisted of over 2,300 pages, introduced around 400 new rules, and a created a new regulatory agency, the CFPB. As of July 2014, only 208 of the 398 regulations have been finalized, and more than 45% of congressional deadlines have been missed (Wallison, 2014). Bexley (2014) said the Dodd-Frank act brought the most significant changes to financial regulation since the Great Depression. The findings of his study showed that regulatory overreaction could have long-term impact on a substantial number of financial institutions (Bexley, 2014).

The purpose of this quantitative correlation study was to test for unintended consequences of the Dodd-Frank legislation as posited in the theories of Bexley (2014) and Barth, Prabha, and Swagel (2012). The impact of Dodd-Frank was defined as the rate of bank failure and declining financial performance of banks. The declining financial performance of banks may be hindering the number of new entrants. The dependent variable was generally defined as the change in certain key ratios, noninterest income results, and profitability reported in the years after Dodd-Frank legislation. The controlling and intervening variable were controlled by focusing on specific types of noninterest income and was statistically controlled in the study.

In the wake of the recent global financial crisis of 2007-2009, Dodd-Frank legislation introduced new sweeping changes in rules to better protect consumers. In this quantitative study, I quantified the impact of Dodd-Frank legislation through correlation of a specific component of noninterest income, NSF fees. NSF fees result from banks charging consumers for items presented when the balance is not sufficient to cover the items presented. The items typically presented to a transactional account, usually referred to as a checking account, include checks, ATM withdrawals, debit card transactions, transfers, and fees. For the past two decades, this source of noninterest income provided banks a substantial source of income and profit. Many retail banks focused lines of business on maximizing these sources of noninterest income.

Dodd-Frank Legislation was intended to address the too-big to fail problem. However, it appears that the Dodd-Frank Legislation may have had the unintended consequence of institutionalizing the problem by increasing regulatory costs and removing the NSF fee. If one subscribes to the theory that the United States better fosters entrepreneurial and small business start-ups through the availability of credit from thousands of banks, then the early statistics should create concern. From 2007 through 2013 the number of banks declined by over 800 institutions (McCord et al., 2015). Two-thirds of this reduction can be attributed to a historically low number of new banks being formed. From 2002 through 2008 there were more than 100 new banks formed every year (FDIC, 2015). After the Dodd-Frank legislation, from 2010 to 2013 there were four (FDIC, 2015). In 2012 there were zero, and in 2013 there was only one (FDIC, 2015).

After the economic crisis of 2007–2009 and the implementation of Dodd-Frank legislation rules, over 800 banks failed and a historically low number of banks are being

formed. In this quantitative research study, I investigated if the Dodd-Frank legislation has had the unintended consequence of reducing the number of banks in the U.S. banking industry. I asked, "Has the Dodd-Frank legislation harmed the banking industry, contributed to the failure of banks, contributed to on-going poor performance of banks, and impacted the number of new bank entrants?"

My goal in this quantitative correlation study was to examine the potential relationships between Dodd-Frank legislation and the noninterest income of U.S. banks in order to identify potential unintended consequences. I measured financial performance statistics on fees from depository accounts from before (2005 and 2006) and after (2012 and 2013) the passage of Dodd-Frank. In this chapter, I present the research problem, the research design and rationale, the research questions and related hypotheses, the sample data, the study methodology, and the selected approach. The discussion also includes sections addressing data collection, the data analysis plan, threats to validity, and ethical considerations of the research. Chapter 3 concludes with a summary of my rationale for using a quantitative ANOVA design to address the research problem, and an explanation of the procedures I used to support or reject the null hypothesis.

Research Design

I structured the quantitative correlation research design to provide further explanation of the impacts of Dodd-Frank legislation on banks in the United States. Specifically, I used Campbell and Stanley's (1963) equivalent time-sample design. This design can be seen as a form of the time-series experiment with the repeated introduction of the experimental variable (Campbell & Stanley, 1963, p. 43). It is ideal for this

correlation research study, and I used SPSS to perform the statistical data analysis on key figures for quarters before and after the Dodd-Frank legislation.

In quantitative research, typical statistical methods include *t* test, ANOVA, analysis of covariance, chi-squared, Pearson product moment correlation, multiple regression, and Spearman rank-ordered correlation. The strengths of the ANOVA statistical method is when the question pertains to comparing one group to another. ANOVA may be used when there is one independent variable. A two-way ANOVA analysis is used when there is more than one. (Campbell & Stanley, 1963)

The statistical methods were used to test the study hypotheses to determine if the legislation resulted in an overall negative impact. The independent variables were the asset-size, the type of banking institution, and a calculated variable measuring the degree of reliance on NSF income as a function of noninterest income and noninterest income to profit. The dependent variables were the comparable performance of noninterest income and profit on the banks that would have been most impacted by Dodd-Frank. I used the resulting analysis to show if these banks diversified and changed focus away from their reliance on NSF income or if they utilized a "loophole" that permits the bank to obtain an "opt-out" from the customer which allows the bank to continue the practices targeted by Dodd-Frank.

I statistically analyzed the noninterest income, total income, and profit effects before and after the economic crisis of 2007-2009 and the implementation of the Dodd-Frank legislation. I sought to identify if Dodd-Frank had any impact, had the intended impact, and if it had a positive or negative effect. I compared statistics within several ranges of banks for the years before and the years after the 2007–2009 timeframe.

Quantitative Methods

Correlation

Correlation measures the relationship of variables. The direction can be either positive or negative. With a positive correlation, when one variable moves up the other moves up. With a negative correction, when one variable goes down the other goes up; that is, they move in opposite directions. The form of the relationship can be linear, curve, or curve-linear. Finally the strength of the relationship is measured from -1.0 to 0 to +1.0. If the variables have no correlation, the result would be 0. If they have very little relationship, the result would be closer to 0. A strong positive relationship puts the result closer to 1, and a strong negative relationship puts it closer to -1 (Morrow, J.A. n.d.).

Pearson correlation is a specific type of correlation that measures the linear relationship between variables. A requirement of Pearson correlation is that variables must be continuous. Examples of the practical application of Pearson correlation would be questions such as: "Is there a relationship between alcohol use and missing class?" or "Is there a relationship between spirituality and abstinence?" In these questions, both variables are dependent variables (Morrow, J.A. n.d.).

The edict "correlation does not imply causation" teaches us that correlation measures the relationship between two variables but does not explain why there is a relationship between the variables. A correlation cannot be used as proof of a cause and effect type relationship. An example of a question that could be addressed is: "Does a person smoke more when drinking?" Overall, correlations indicate relative strength or impact of a particular variable. The correlations of specifics segments of data can be

compared to reveal the different impact of variables within the segments (Morrow, J.A., n.d.).

Regression

Regression is a statistical technique for finding the best fitting line. The best line then represents the best equation to explain the relationship between the variables. The goal is to derive the best predictive formula, given the results of the combined variables. The regression line shows the relationship between the two variables. For example, given a regression formula the change in one variable, the change in the other variable could be predicted. The regression formula is $Y = bX + a$, where Y is the predicted value, b is the slope of the regression line, X is the known variable, and a is the Y-intercept where the regression formula crosses the Y-axis when X equals zero (Morrow, J.A. n.d.).

Simple and Multiple Linear Regression

Linear regression will produce a model that is an approximation of the true relationship between the independent and dependent variable. Simple or multiple linear regressions are intended for data that has a linear relationship. When complex data exists, such as wave results, other methods of regression would be more appropriate; such as piecewise regression. With simple linear regression the independent variable, customarily x, is the predictor or regressor variable and the dependent variable, y, is the response variable (Montgomery, Peck & Vining, 2015). Simple linear regression varies from multiple linear regression by the number of independent variables. With simple linear regression there is one while with multiple linear regression there are more than one. With simple and multiple regression, the resulting model shows the best fit of the equation and it is important to understand the slope of the curve, the intercept, population

variance, coefficient of determination r^2 and correlation coefficient r (Montgomery, et al., 2015). The formula for simple linear regression is: $y = B_o + B_1x + e$.

Binary Logistic Regression

Data may be arranged into a logical question, in which the response is a yes or no, or a true or false. Such answers can be denoted with X = 0 or X = 1. In the case of this research study, X = 1 when a bank existed in 2005 but does not exist in 2012. X = 1 represents that the bank is no longer present in the data set and has either failed or been acquired. When the bank existed in 2005 and remains in the data set in 2012, X = 0.

Binary logistic regression is used to measure the relationship between independent variables on the dependent variable when the dependent variable is either X = 0 or X = 1. The question posed is do the independent variables predict an event happening or being true. The formula binary logistic regression is $\text{Prob}\{Y = 1|X\} = [1 + \exp(-XB)]^{-1}$ where X*B* stands for $B_0 + B_1X_1 + B_2X_2 + \ldots$ (Harrell, 2015). The regression parameters B are estimated by the method of maximum likelihood function $P = [1 + \exp(-x)]^{-1}$ which is a logistic function (Harrell, 2015). Binary logistic regression yields a result bound by 0 and 1 and the relative strength of the predictive model is measured by how close the result is to 1.

Chi-Square

Chi-square and nonparametric tests. Chi-square is a type of nonparametric test used to "evaluate whether the difference between observed frequencies and expected frequencies under a set of theoretical assumptions is statistically significant" (Frankfort-Nachmias & Nachmias, 2008, p. 448). Chi-square test is often applied to problems that have not met the parametric test such as the Pearson correlation we have studied in

previous weeks (Morrow, J.A. n.d.). The chi-square test is not as sensitive as the parametric tests and is well-suited for nominal and ordinal data. However, being not as sensitive also means that they are not as powerful: if given the option one would always choose a parametric test. There are two requirements for the use of Chi-square test. The first is that observations must be independent. The second is that frequencies in each cell must be greater than five (Morrow, J.A. n.d.).

Random Forests

Random forests is a statistical method easily used in R. Random forests are a combination of tree predictors such that each tree depends on the values of a random vector sampled independently and with the same distribution for all trees in the forest. The generalization error of a forest of tree classifiers depends on the strength of the individual trees in the forest and the correlation between them (Brieman, 2001). The generalization error for forests converges to a limit as the number of trees in the forest becomes large.

ANOVA

Demonstrating more depth and expanding into more sophisticated statistical methods that were considered as part of the research design, discussions turn to chi-square and nonparametric tests, ANOVA analysis, and Random Forest. ANOVA analysis is the most likely quantitative statistical method for this study. There are several types of Analysis of Variance ("ANOVA") and were considered. However, there is also a statistical method termed random forest that was considered. However, in the end, learning how to use this method, arranging the data, learning the plug-in, and then

interpreting my results using this more advanced methodology would have required too much effort and SPSS was deemed more appropriate for the dissertation.

Regarding the research design univariate analysis-of-variance (ANOVA), the researcher would agree that the ANOVA application fits with the experimental, quasi-experimental and field studies. According to Green and Salkind (2011), one-way ANOVA assumes that "dependent variables are normally distributed for each of the populations; the variances of the dependent variables are the same for all populations" (Green & Salkind, 2011, p.184). Additionally, "the cases represent random samples from the population and the scores on the test variables are independent of each other" (Green & Salkind, 2011, p.184). ANOVA has a positive strength as it can be used in testing differences among several means for significance without increasing the type 1 error rate. On the other hand, it is very weak on the grounds that randomized design neglects local control and it is also not suitable for field experiment.

Research Rationale

There are two rationales for selecting this topic. First I have worked in the banking industry for twenty eight years and was fortunate to have worked for a leading consulting firm during the congressional finance committee review of banking practices that resulted in the Dodd-Frank legislation. Working as part of a team that represented the American Banking Association for the purposes of gathering statistics and attempting to educate the congressional finance committee to combat their intentions that later became Dodd-Frank legislation, we received data from dozens of large financial institutions in order to answer specific questions and demonstrate various models. I am interested in measuring the effects of the legislation and identifying if there are

unintended consequences. Secondly, some studies have been conducted to measure different components of Dodd-Frank. However, none were found that focus on the social impact related to deposit account fees, and non-sufficient fund fees. The literature review reveals, mostly, negative opinions and findings related to the legislation. There is an important social impact related to deposit account fees. Some of our society remains unbanked or underbanked and additional monthly fees are disproportionately high to some sectors of society. Dodd-Frank sought to alleviate the burden of NSF fees on society and the impacts of this policy is the subject researched within this study.

Data Analysis Plan

Frankfort-Nachmias and Nachmias (2008) said a sample draws from a population and estimates the population. This sampling methodology estimates the population using research considerations to improve the accuracy of the estimation. A population is "defined in terms of content, extend and time" (Frankfort-Nachmias & Nachmias, 2008, p. 184). A sample is simply a subset of the overall population but should be large enough and consistent enough with the overall population as to represent a relevant group from which conclusions can be made about the overall population. Selecting such a sample is discussed in terms of a sampling design which includes considerations of four basic probability precepts: random, systematic, stratified and clustered. The size of the sample relates to the accuracy of the inference; the larger the sample size the better. The size of a sample relates to time, effort and money. The better the sample and the smaller the error, the better the research and conclusions. In conclusion, consideration of the sampling strategy, the sample size and the sample being random and representative of the

overall population are important considerations to minimizing the error of the extrapolation to the overall population.

Data Collection

The FDIC has an extensive, secondary data source that is publicly available. Included in the targeted research data is the noninterest income performance of several components of banking including the two specific areas. An index was applied to express the noninterest income and profit figures as a function of total revenue, total profit and assets. The results were rank ordered to identify the top 10% and top third and compared to different percentile ranges to measure if larger asset sized institutions were impacted more than the regional banks or community banks. The use of similar scales is typical and accepted within the industry.

The use of scales based on percentiles of performance and asset size are valid and reliable; particularly in this case because I seek to test the impact of the variables on the overall performance of noninterest income, total income, and profit. The dollar expressions of these results are based on asset size so scaling them based on these factors improves the reliability and comparability. Furthermore, comparing the results by asset size and profit percentiles is important, valid and reliable because the actual legislation favored the smaller community banks and was less onerous. If the smaller institutions favored better as a function of change to the independent variables then further causation could be associated and would be expected.

Population and Sampling

The population selection derives the research problem and the source and amount of data can either be obtrusive or unobtrusive or both. Based on the research problem a

sample was used to express the overall population. The amount of data and size of the sample is based on many factors including time and money. The overall question is how well the sample represents the overall population and how well the results and conclusions can then be extrapolated to the overall population. The methods of data collection differ based on the purpose of the index or scale and the research design used. The key of the appropriate population is that the data relate strictly to the phenomenon that is intended to be measured. When calculating a base of comparison, the proportion is a measurement of frequency of observations and the larger the population, generally, the more reliable the results. The proportion is the category divided by the total number of observations.

Regulatory agencies require banks to file quarterly "call reports" which consist of over one hundred different income statement, balance sheet and key performance ratios. The population was all banks that have provided the identified research statistics through the FDIC Statistics web site both before and after the introduction of Dodd-Frank and that were not dramatically affected by a merger or acquisition that makes analysis of their statistics impractical to separate from the effect of the merger or acquisition; this consideration is discussed further in the validity and reliability section.

Data for all banks was downloaded from the publicly available, secondary data source available at the FDIC statistics web site. Banks from 2005, 2006, 2011 and 2012 were downloaded and the reliance ratio was calculated. Banks that did not have sufficient data to calculate the reliance ratio were eliminated from the data set. The banks removed from the data set were small and discussed in a later section. The top four banks are disproportionately large representing roughly 40% of all U.S. bank industry deposits.

For this reason these banks were treated as outliers and were not considered in some of the analysis. None of the top four banks have a calculated *very high* or *high reliance ratio*.

Specifics about Sample Size and Selection

Before and after data for banks that failed or were acquired between 2005 and 2012 cannot be analyzed as no data exists as of 2012. Banks were excluded from the study if data before and after the Dodd-Frank legislation is not available. The data sample size was large as a total percentage of the overall population of U.S. based financial institutions. Only those with no data before or after the identified research period or with obvious anomalies related to acquisition, consolidation or failure was excluded. The sample and sample size are large because of the data availability and The Freedom of Information Act as stated on the FDIC statistics website.

For research purposes, the availability of data and the amount of data, as a percentage of the population, should was very favorable as the sample consisted of the majority of the population due to the regulatory required nature of the data needed. Overall, the population of bank should be around seven-thousand eight-hundred.

Fortunately for my research, the overall change to the specific categories within NSF fee income and overdraft fee income was relatively easy to isolate as there is a specific line of detail termed ISERCHG or service fees on depository accounts within the required FDIC institution quarterly filings. The effect on profit was theorized to be more difficult to ascertain because the Dodd-Frank legislation impact coincided with a historically low interest rate cycle that is a remnant of the 2007-2009 economic crisis and the continuing monetary policy of the Federal Reserve Bank. Pressure on bank net

income is also challenged by mandated compliance initiatives requiring additional noninterest expenses in the form of additional labor, audit and professional service expense.

In regards to panels and time-series data, “Some quasi-experiments are extended over time to allow researchers to examine changes in the dependent variable”. These types of research designs help address the challenge of tracking subjects over time. There are panels which simply involve measuring effects over more than one period of time. There is also time-series designs which use pretest and posttest measures on some number of occasions to measure the effect of the independent variable over time. The research design was structured so that the independent variable, namely Dodd-Frank legislation, correlation to the dependent variable was measured using time series data and the results are presented in Chapter 5.

Use of Survey or Internet Research to Collect Data

No surveys, questionnaires or interviews were used in the research study. Rather the publicly available, secondary data source from FDIC Statistics provided the needed data. From the FDIC Statistics, quarterly bank, regulatory-required, call reports provide data on hundreds of financial performance and key ratios.

Quantitative Research Methodology

There are several quantitative research designs. There are several lists of quantitative research designs that have evolved over time. Campbell and Stanley (1963) wrote a seminal work that is still used as a PhD text fifty years later. Quantitative research designs can be experimental, true experiment, quasi-experiment, ex-post facto or correlation design.

Experimental designs involve a treatment or intervention and examination of the effect of that treatment on one or more outcome variables. The researcher has the ability to manipulate the independent variable through the treatment. By manipulating the independent variable, the research can monitor the change in the dependent variable. Subjects are randomly assigned into the treatment group or the control group, which means that any subject selected for the study has an equal chance of being assigned to receive the treatment or be placed into the control group. Random selection of subjects helps to control for the effect of individual differences on outcomes.

In true experiment, subjects are randomly selected. The randomly selected subjects are then subjected to a test and the result, or change, is measured. The measurement is then compared against the hypothesis to determine if the change or result is significant. A quasi-experiment is very similar to a true experiment. The difference is that random assignment is not possible.

In ex post facto design, research involves looking backward in time or after the fact. Investigation from the look back is researched and change or impact is measured and tested for significance. Differences between two groups can often be compared using this method; for example how does one generation compare to another.

Correlational design utilizes regression and correlation related statistical methods. Two or more variables are investigated statistically. The goal is to explain the extent to which changes in one or more variables are associated with or predict changes in other variables, and the amount of variability explained by the relationship. Correlation does not imply causality.

Campbell and Stanley (1963), reviewed ten quantitative research designs. The one most relevant to my study is the time series experiment. The time series experiment design is grouped with the quasi-experimental designs because it lacks full experimental control. Time-series experiments consist of periodic measurement processes, such as observations of a group or individuals. An experimental change is introduced into the time series, breaking up the measurements. Then, measurements resume. The time-series design method is highly accepted in the more successful sciences, but rarely accepted in the social sciences (Campbell & Stanley, 1963).

Quasi experimental design is a specific type of experiment where the researcher uses control and experimental groups but falls short of assigning participants to groups. Frankfort-Nachmias and Nachmias (2011) said quasi experimental design often allow a researcher to select random samples from the population they intend to study but it is not proper for them to assign individual cases to the comparison groups. In some cases, quasi experiments are extended over a certain time period thereby allowing researchers to examine changes in the variables. For example, researchers could examine the effect of change of one variable on another. This helps the researcher to examine various the effect of change in one variable over another. It allows for easy manipulation of the data to assist the researcher ascertain the effect of change in any of the variables on the entire study.

The most significant weaknesses of the time-series design clearly include the weakness of failing to control for history and the way in which the experiment can contain conflicting hypotheses. However, the strengths of the design lie in its use in the

more successful sciences. Although the design lacks a control group, repeating the design strength can validate findings and demonstrate reliability (Campbell & Stanley, 1963).

Time-series design lacks full experimental control resulting in potential internal validity issues. The researcher must mitigate the lacks of control inherent with this research design. Internal validity issues regarding time-series experiments have to do with competing hypotheses. A competing hypothesis may offer different reasons for a change in the time series, other than the effect of the experiment. The most concerning internal validity measure is that of history. In a time-series experiment, there is no way to control for history. Additionally, instrumentation is of concern in a time-series experiment. Instrumentation refers to changes in the measurement instrument. The introduction of the experiment could be misinterpreted as causing the change in the measurements of a time-series design (Campbell & Stanley, 1963).

Validity

Concerns for external validity must also be acknowledged by an experimenter using the time series experiment design. The time-series experimental design struggles with external validity. External validity concerns include the interaction of testing and X, the interaction of selection and X, and reactive arrangements (Campbell & Stanley, 1963). In short, an experimenter must specify in advance the expected time relationship between the introduction of the experiment and the "effect" from the experiment (Campbell & Stanley, 1963).

In using ANOVA, it is necessary to mitigate threats to internal validity which may include history with reference to events occurring between first and second measurements. Tests were used to measure biases resulting in differential selection of

respondents for group correspondence, and instrumentation involving the change in the calibration of measuring instrument. (Campbell & Stanley, 1963) External validity could be jeopardized by reactive effect of experimental arrangements; testing in which pretest either might increase or decrease.

In quantitative research the method for analyzing data involves several steps. It is important to report a response rate and determines response bias. Then one conducts descriptive analysis, checks the instrument scales, and performs data analysis and interpretation. Inferential statistical analysis is conducted, based on the best statistical models which is a function of the dependent or independent variables (continuous or categorical), the distribution of scores (normal or non-normal), and the number of dependent and independent variables. Typical statistical methods include t-test, analysis of variance, and analysis of covariance, chi-squared, Pearson product moment correlation, multiple regressions, and Spearman rank-ordered correlation. Finally the researcher presents the interpreted results.

In quantitative research it is important to consider threats to validity. There are four types of threats to consider. The threats to: validity, external validity, statistical conclusion validity, and construct validity. Threats to internal validity involve procedures, treatments or experiences of the participants that threaten the ability of the researcher to correctly conclude about cause and effect. Threats to external validity involve elements of the sampling, setting, and timing that could harm the ability of the researcher to generalize about the population. Threats to statistical conclusion validity manifest from inadequate statistical power or violation of statistical assumptions that threaten the ability of the researcher to draw statistical inference. Threats to construct

validity result from inadequate definitions and measures of variables that threaten the researcher's ability to measure relevant constructs (Field, 2012).

Limitations, Reliability and Validity

Validity and Reliability are critical elements to research design. The researcher should take care to inform the reader of the methodology, model, participants and prior results. Threats to validity include addressing whether the one variable caused the results in another or if the results happened first. Other elements include attrition, which is the effect of participants dropping out of the study and no longer participating, a tendency towards the mean in which later participant contributions regress towards same results (Shadish, Cook, & Campbell, 2002). Reliability can also be an opportunity in research where one validates the reliability of an already published test: such academic work vets the previous contribution and can cement the work if validated (Shadish, et al., 2002). Reliability can be addressed by testing and retesting to compare results.

Frankfort-Nachmias and Nachmias (2008) said that to establish internal validity the researcher must be able to address the question of whether changes in the independent variable cause changes in the dependent variable. There are several factors that can affect validity. The two main factors are extrinsic factors, things that occur prior to the research, or intrinsic factors that occur during the research.

Quasi-experimental designs are "weaker on internal validity than experimental designs" (Frankfort-Nachmias, p. 118). The basic internal validity dilemma relates to the ambiguity of causation. There is also a challenge presented by the fact that designs that address internal validity well are typically week in terms of external validity which

relates to the ability to generalize the results and conclusions. Campbell and Stanley (1963) said there are eight different classes of variables that present challenges to internal validity and must be controlled in the research process. They are: history, maturation, testing, instrumentalization, statistical regression, experimental mortality, bias, and selection-maturation interaction.

Sound external validity leads to findings and conclusions that can be generalized beyond the research population. However, the internal validity challenge is illustrated in the inference of cause and the relationship between the independent and dependent variables. Other challenges include comparability, potential bias and data analysis. Of the three types of validity, content validity, empirical validity, and construct validity, the researcher must consider whether the questions are logically and empirically tied to the concepts and theoretical assumptions being used (Franfort-Nachimais, p. 154). One must question the differences in the sample versus the population.

Addressing Internal and External Validity

The global economy, U.S. economy and overall banking industry have been confronted by historic challenges including economic and political turmoil, near-failure resulting in government intervention, new legislation, new reform measures, consolidation and competition to name a few. This quantitative research design used 2011 and 2012 results to isolate the Dodd-Frank legislation impact from the 2007-2009 economic crisis and later economic recovery.

The overall change to the specific categories within NSF fee income was easy to isolate as fees from depository accounts, total noninterest income, and profit have separate lines within the required FDIC institution quarterly filings. The percentage of

fees from deposit accounts to total noninterest income identifies the amount of reliance on NSF and deposit account fees. The performance of banks with a high reliance, top third, or very high reliance, top ten percent, was compared before and after the passage of Dodd-Frank legislation. The percentage of noninterest income to profit may also be informative if the collection of deposit account and NSF fees were focus of the bank.

A challenge on the analysis of noninterest income to profit may be hampered because Dodd-Frank legislative and reform impacts coincide with a historically low interest rate cycle that has applied pressure to bank net interest income coupled with mandated compliance initiatives requiring additional noninterest expenses in the form of additional labor, audit and professional service expense.

To test for unintended consequences, one hypothesis is that banks with a higher reliance on deposit account fees and NSF fees, may have failed or been acquired at a higher rate than other banks. An overall statistic was calculated for banks that have data prior to the passage of Dodd-Frank legislation but not in the second, post legislation period of 2012-2013. Banks with a *high* or *very high reliance ratio* was compared against the attrition statistic for banks that did not rely on such noninterest income.

The data analysis associated with the quantitative research plan did not contemplate if the strategy of the bank changed which resulted in change in data. Other challenges to the validity of the research may be identified during the literature review, during data analysis or based on the peer-review.

Summary

In chapter 3 the research methodology for this quantitative correlation study is discussed. Research design and rational are presented. Several quantitative research

methodologies are reviewed. Based on analysis of the quantitative research methods, data, and the research design which intends to compare the financial performance before and after the implementation of Dodd-Frank legislation, ANOVA analysis was selected.

A data analysis plan and the intended method of data collection are reviewed. A secondary data source was utilized for this study. Specifics of population and sample, and specifics of sample size selection are included. The chapter concludes with a review of quantitative research methodology specific to this study and a detailed discussion of validity.

The impact of Dodd-Frank legislation was defined as the rate of bank failure and declining financial performance of banks. The declining financial performance of banks may be hindering the number of new entrants. The dependent variable was generally defined as the change in certain key ratios, noninterest income results, and profitability reported in the years after Dodd-Frank legislation. The controlling and intervening variable were controlled by focusing on specific types of noninterest income and was statistically controlled in the study.

The goal of this quantitative correlation study is to examine the potential relationships between Dodd-Frank legislation and noninterest income within U.S. banks and to identify potential unintended consequences. Financial performance statistics on fees from depository accounts are measured before, 2005 and 2006, and after 2012 and 2013, the passage of Dodd-Frank.

Chapter 4 presents the statistical analysis of the U.S. bank data, the statistical results of segmenting the data in order to identify banks with a very high reliance and a high reliance on consumer fees before and after the passage of Dodd-Frank legislation.

The result of the two-tailed ANOVA analysis is presented and used to assess the research questions, the null and alternative hypotheses. Chapter 4 discusses limitations of the study, opportunities for further research, and implications for social change. Chapter 5 presents the conclusions of the study and the statistical results, identifies significant findings, and conclusion.

Chapter 4: Results

Introduction

The purpose of this quantitative correlation study was to test for the unintended consequences of the Dodd-Frank legislation that I posited in Chapter 3. I structured Chapter 4 to provide a review of this study's purpose, the research question and hypotheses, the data collection and preparation process, and the results of the analyses I performed to test the hypotheses. In this chapter, I have included the descriptive statistical analyses, and the ANOVA regression analyses, and discussions corresponding to both. At the end of the chapter, I provide a summary of key findings.

In this study, I defined the negative impact of Dodd-Frank legislation as the rate of bank failure and the declining financial performance of banks. The declining financial performance of banks may be hindering the number of new entrants. From 2007 through 2013, the number of independent commercial banks shrank by 14%—more than 800 institutions (McCord, Simpson, Prescott, & Sablik, 2015). There were even larger percentage declines in the number of savings institutions and credit unions. In 2007, there were 1,250 savings institutions and 8,268 credit unions. In 2013, there were 936 savings institutions and 6,687 credit unions, drops of 25% and 19%, respectively (McCord & Prescott, 2014, p. 23; FDIC, 2016, CUNA, 2016). The dependent variable was generally defined as the change in certain key ratios, noninterest income results, and profitability reported in the years after Dodd-Frank legislation. The controlling and intervening variables were controlled by focusing on specific types of noninterest income and were statistically controlled in the study. In this chapter, I answer the two research questions that I developed to provide focus and direction for this study.

Deviations from the Plan

In the research plan, I proposed using ANOVA exclusively. After arranging the data, I determined that logistic and linear regressions were more appropriate. I used logistic regression for Research Question 1, and linear regression and ANOVA for Research Question 2.

Review of Research Questions

The first research question pertained to the unintended consequences of the Dodd-Frank legislation. I used this research question to quantitatively measure the number of banks that existed in 2005 and/or 2006, but no longer existed in 2012. Research Question 1 focuses on assessing a relationship in the Dodd-Frank targeting of service charges on depository accounts which consists of NSF fees, monthly fees, and debit and credit card interchange income. I calculated a ratio for *high reliance* and *very high reliance* which were derived from the top one-third and top 10% of service charges on depository accounts divided by noninterest income. Banks termed *high reliance* or *very high reliance* depended on service charges on depository accounts, as a function of noninterest income, more than most banks. Because the Dodd-Frank legislation targeted these income sources, my hypothesis regarding Research Question 1 is that these banks did not disappear from the data set to a higher percentage than other banks. If a bank FDIC certificate number is included in the dataset for 2005 and/or 2006 but not for 2012, then the bank no longer exists and either failed or was acquired. This was measured by comparing the statistical results and ranking measures of financial performance from 2005 and 2006, as compared to 2011 and 2012.

Research Question 1 was as follows: What is the degree to which, measured by correlation, banks with a *very high reliance* or *high reliance* on consumer fees have failed, or been acquired, as compared to other banks?

Ho: Banks with a *very high reliance* ratio or *high reliance* ratio, coded 1, were more likely to have failed by 2012 as compared to those banks codes as 0.

Ha: There is no difference in the failure or acquisition rate of banks coded as 1 as compared to banks coded as 0.

With the second research question I sought to measure the impact of Dodd-Frank legislation on the financial performance of U.S. banks.

The second research question was focused on whether banks with a *high reliance* or *very high reliance* on the Dodd-Frank targeted service charges on depository accounts were effected financially more than other banks. The banks that relied, more than most banks, on these sources of noninterest income may have been more detrimentally affected, may have found a work around to the legislation, or may have diversified to find new sources of income. The null hypothesis for Research Question 2 was that banks with a *high reliance* or *very high reliance* were not financially affected more than other banks. I measured this by comparing the statistical result, and ranking, of financial measures from 2005 and 2006, as compared to 2011 and 2012. To test the hypothesis, I used statistical measures of averages, ranking, ratios, and binary logistic regression.

Research Question 2 was as follows: To what degree, measured by correlation, was the financial performance of banks with a *very high reliance* or *high reliance* on consumer fees different from banks that did not rely as heavily on consumer fees?

Ho: Banks with a *very high reliance* ratio or *high reliance* ratio, coded 1, were more likely to have had declining financial performance, as measured by profits in 2005 and 2006 versus 2011 and 2012, as compared to those banks codes as 0.

Ha: There is no difference in the profitability of banks coded as 1 or 0 from 2005 and 2006 as compared to 2011 and 2012.

The information in Chapter 4 includes the specific data collection procedures, a report of descriptive statistics that characterize the data, and a report of the statistical analysis findings and results. I then discuss the results, and conclude with a summary of answers to the research questions.

The procedure for statistical analysis is organized into four sections. The first is data collection and preparation, including a review of the fiscal years applicable to the study and variable naming conventions. Section 2 is a presentation of descriptive industry macro statistics and trends applicable to research question 1 and 2. Section 3 and 4 includes the data screening and descriptive statistics, description of procedure for analytics, and a summary of regression results for research question 1 and 2 respectively.

Data Collection and Preparation

I obtained data for this research study from a secondary data source publicly available through the FDIC website. The FDIC collects data from every FDIC insured bank in the United States. The data is collected quarterly via call reports which consist of hundreds of lines of bank financial performance results, ratios, and metrics. The data collected by the FDIC is made available through a download tool accessible at their *Bank Data and Statistics* site.

The data collected by the FDIC is made available under 5 USC 552 known as the Freedom of Information Act (FOIA). There is an FOIA page on the website that discloses that all information collected and stored is available for public consumption and that no approval is required. On this information disclosure site, it is made clear that all information gathered is made easily accessible for download, and that the public may use any data, ratios, trends, and financial information as they like.

Walden University requires Institutional Review Board approval before beginning research. IRB application was submitted in March 2016 and approval was granted on April 1, 2016. The IRB approval number is 04-01-16-0361165.

The FDIC *Bank Data and Statistics* site has an extensive data guide, definitions, and a download tool to facilitate a user's collection of data. When downloading the data, one may choose from over a dozen sources of data including balance sheets, income statements, more detailed sections of financial statements, key ratios, trends, and metrics. To study Research Questions 1 and 2, I needed data needed from income statements. Data must be downloaded for each quarter or year, so I downloaded year-end data for 2005, 2006, 2011, and 2012. I downloaded data for each year individually, and saved a

comma-delimited file in Microsoft Excel. I combined each of the four spreadsheets into a single workbook and used the VLookup function to combine the four years of data into a single spreadsheet so that comparative ratios could be calculated. Once the needed ratios were calculated, I sorted the data to identify the top one-third and top 10%, which I labeled *high reliance* and *very high reliance*, respectively. The ratios of these segments for 2005 and 2006 were compared to 2011 and 2012 to test the hypotheses for the research questions.

Fiscal Years Applicable to Study

The Dodd-Frank Wall Street Reform and Consumer Protection Act took effect July 21, 2010. The Dodd-Frank legislation consisted of over 2,300 pages, introduced around 400 new rules, and a created a new regulatory agency, the CFPB. To study the effects of this legislation, I used 2005 and 2006 annual results to represent the *before*-crisis bank statistics, while 2011 and 2012 annual results represent the *after*-crisis statistics.

While several components of the Dodd-Frank legislation are still being detailed and have not yet been enacted, some of the first components to take effect included new rules and regulations regarding NSF activities on consumer checking accounts. These new rules and regulations were expanded and detailed in the Dodd-Frank legislation, but were initially passed by the Federal Reserve Board in 2009. The intent was to provide relief to consumers, particularly lower-income consumers. These new rules and regulations had an immediate effect on the method banks used to both enroll consumers in NSF programs and process NSF items. Therefore, 2011 and 2012 may represent ideal

years for comparison to the years 2005 and 2006 because 2011-2012 was a time before many other Dodd-Frank legislation changes became effective.

Variable Naming Conventions

In the interest of specificity, Table 1 shows the assigned variable naming conventions I used in this study.

Table 1

Variable Naming Conventions

Naming convention	In-text reference
CERT	The FDIC certification number is unique to each bank in the U.S. banking industry.
Assets	Total 2005 assets of the bank.
NONII	Total noninterest income results from fiduciary activities plus service charges on deposit accounts, plus trading gains/(losses), and other incomes/(losses).
ISERCHG	Service charges on deposit accounts.
NETINC	Net income equals total net interest income, plus noninterest income, plus extraordinary gains/(losses), loan loss provisions and income taxes.
High reliance	Denotes banks that are in the top third percentile of ISERCHG divided by NONII; such banks have a high reliance on service charges on deposit accounts as a percentage of their total noninterest income.
Very high reliance	Same as high reliance but denotes banks that are in the top ten percentiles.

Industry Macro Statistics Related to Research Questions 1 and 2

Table 2 provides descriptive statistical data for the U.S. bank industry for the fiscal years 2005, 2006, 2011, and 2012. Starting in late 2007 through 2009, a global economic crisis occurred. The average number of bank failures per year from the year 2000 through 2007 was four. In 2008 thirty banks failed. In 2009, 2010, 2011, and 2012 there were 148, 157, 92, and 51 bank failures respectively. In the past three years, bank

failures have averaged 10 per year. In total, from 2000 through 2015, 560 banks have failed.

Table 2

Descriptive Statistics for the Number of Banks in the U.S. Banking Industry

	For Year-End Reporting from FDIC Statistics			
	2005	2006	2011	2012
Number of Unique FDIC certificates	8,845	8,691	7,366	7,092
# of Bank failures	0	0	92	51
# of mergers and acquisitions	169	240	88	144
# Bank failures/acquisitions from 2005	-	154	1,479	1,753
% Bank failures/acquisitions from 2005	-	1.74%	16.72%	19.82%
# of New Bank Entrants (de novos)	138	151	3	0
Total US Bank Industry Deposits	$7.141T	$7.825T	$10.19T	$10.82T

Note: Author's calculations based on Data from FDIC Statistics (2016).

There is no question that the 2007 through 2009 economic crisis had a significant impact on the global and U.S. economy, and caused hardship for banks. As of the end of 2012, there were 1,753 fewer banks in the U.S. banking industry than there were in 2005. Of the 1,753, 32% (560) of the decline was a result of bank failures, and the remaining 68% (1,193) was from mergers or acquisitions.

From 2000 to 2008 there were 1,042 new bank entrants. Historically, there are around 100 new bank entrants, or de novos, per year. In 2008 and 2009 there were 72 and 38 new banks formed reflecting the difficult economic climate. However, since the passage of Dodd-Frank legislation in 2010, from 2011 through 2013 there have been 4 de

novos. As the numbers of banks have declined for many years through mergers and acquisitions, there is a new regulatory burden from Dodd-Frank and the heightened regulatory period has increased from 3 years to 7. The related additional costs may be contributing to the lack of new banks being formed which contributes to the overall decline in the number of banks.

From 2005 to 2012, the number of banks in the U.S. declined by 19.82%. While the number of banks declined, the amount of total deposits in the industry grew from $7.14 trillion to $10.82 trillion. The 2007-2009 economic crisis had stabilized in 2010 and while normalized economic growth still lags previous recovery periods, the overall U.S economy has improved but the number of new bank entrants continues at historic record low levels.

Figure 1 shows that, while the number of banks declined from 8,845 in 2005 to 7,092 in 2012, the total assets increased from $10.89T in 2005 to $14.5T in 2012. The increase in assets from 2005 to 2012 was 32%. The top 4 banks increased assets from $3.678T to $5.95T or 61.78%. The remaining 7,000+ banks increased assets from $7.219T to $8.561T or 18.58%. The top 4 banks increased their assets by $2.272T while the remaining 7,000+ banks increased assets by $1.341T. The top 4 banks increased asset size by 60% more than the other 7,000 banks combined.

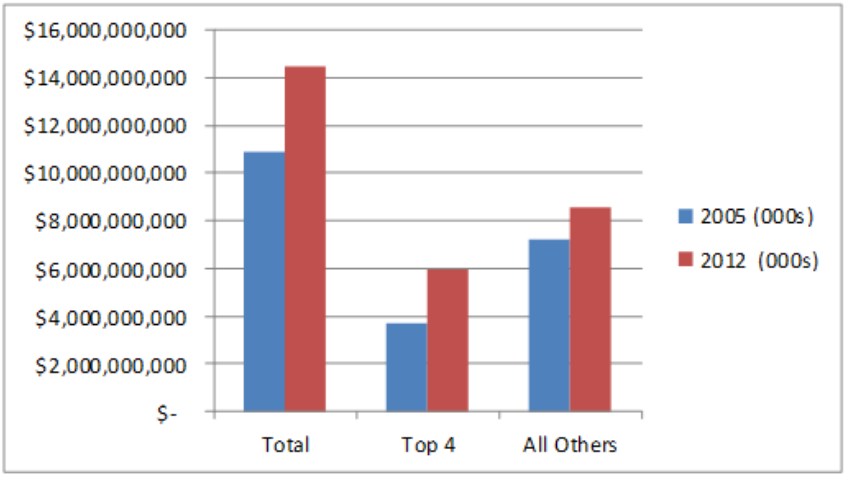

Figure 1. Asset size of the United States banking industry

Figure 2 illustrates the total assets for the top four banks and three equally distributed tiers ranked in ascending order by asset size: one, two and three. Each tier contains 2,965 banks. The average assets for tier one, two and three respectively are: $2.271B, $125MM, and $41MM. This graph shows the disproportionate size of assets within the U.S. banking industry.

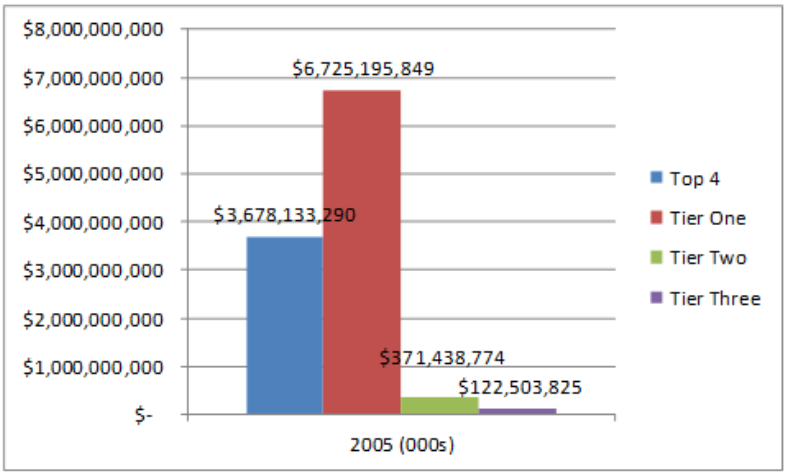

Figure 2. Total assets (in dollars) of the top 4 banks and 3 tiers of banks as of December 31, 2005

Research Question 1

Research Question 1: Quantitative – Is there a relationship between in the dependent variable, the failure or acquisition of a bank as defined as the bank existed in the 2005 and / or 2006 data set but no longer exists in the data set in 2011 and / or 2012, to a statistically higher degree when the bank had a *high reliance* or *very high reliance* on service charges on depository accounts divided by noninterest income as compared to those banks that did not have a *high reliance* or *very high reliance* on such fee income. A service charge on depository accounts was one of the early targets of Federal Reserve, Dodd-Frank, and Consumer Financial Protections Board (CFPB) initiatives. The CFPB was created as part of the Dodd-Frank legislation. Research Question 1 seeks to measure the unintended consequences of the Dodd-Frank legislation specific to whether the legislation contributed to the failure or acquisition of financial institutions and a general reduction in the number of banks within the United States banking industry. A precept of the Dodd-Frank legislation was to address the *too big to fail* issue while academic literature has suggested that it has not only failed in this regard, but institutionalized the problem further by disproportionately financially harming the smaller banks, causing a dramatic decline in new bank formation, and reducing the number of banks in the industry that were the competition, and consumer alternatives, to the nation's largest banks.

$H1_o1$: There is no statistically significant predictive relationship between the dependent variable, the failure or acquisition of a bank as defined as the bank existed in the 2005 and / or 2006 data set but no longer exists in the data set in 2012, to a statistically higher degree when the bank had a *high reliance* or *very high reliance* on

service charges on depository accounts divided by noninterest income as compared to those banks that did not have a *high reliance* or *very high reliance* on such fee income.

***H*1A1:** There is a statistically significant predictive relationship between the dependent variable, the failure or acquisition of a bank as defined as the bank existed in the 2005 and / or 2006 data set but no longer exists in the data set in 2011 and / or 2012, to a statistically higher degree when the bank had a *high reliance* or *very high reliance* on service charges on depository accounts divided by noninterest income as compared to those banks that did not have a *high reliance* or *very high reliance* on such fee income.

Research Question 1 seeks to quantify the relationship between the regulatory rule changes affecting the ways that banks can charge and collect fees on depository accounts. The null hypothesis is that the changes that impact fees on depository accounts have no significant statistical relationship with the decline of the number of banks. Banks that are detrimentally affected by the rule change may face one of four alternatives: a) fail, b) choose to be acquired or merged with another bank, c) change or diversify their business model, or d) experience lower income and profit. The amount of impact from these changes may be, temporarily, offset by the amount of capital held at the bank. For this reason, it is hypothesized that smaller financial institutions are more susceptible to harm as compared to the largest banks in the country. One precept of Dodd-Frank was to address the *too big to fail* problem but if processing rule and regulatory changes disproportionately affect smaller banks then an unintended consequence may exist.

The reliance ratios could not be calculated for some data in the data set. From 2005 and 2006 data, 1,024 banks did not provide data on ISERCHG or service fees on depository accounts. After investigation, there were three reasons why no data was

provided. First, many banks hold more than one FDIC certificate. These banks were rolling-up these other FDIC certificate numbers to their main bank. These banks have branches, or acquired institutions, that they do not provide this information for. Secondly, there are many FDIC insured branches of *foreign chartered institutions* in the U.S. and they do not provide this information for their U.S. operated branches. For the third group, and minority of those that did not provide this information, no reason could be determined.

For the purposes of statistical analysis, the top four banks, and the banks that do not provide the information necessary to calculate the *reliance ratios*, are treated as outliers and are excluded from the regression data sets. The number of banks treated as outliers, the top 4 banks and those with no data to calculate reliance ratio, tally 1,028 banks. The remaining banks, 7,872 total, were then ranked by *reliance ratio* and divided equally into three tiers with the top third being termed *high reliance*, 2,623, and the bottom two third consisting of 5,249 banks. The *very high reliance* ratio is the top 10% but is also counted in the top third termed *high reliance*.

Data Screening and Descriptive Statistics for Research Question 1

Data was downloaded from the FDIC Statistics on Depository Institutions (SDI), site made publically available through the Freedom of Information Act. After downloading the Income Statements for all FDIC certified institutions (banks), Microsoft Excel was utilized to combine individual years into a single workbook so that ranking and sorting could be conducted. Check balances were calculated on the original spreadsheets for each year and then compared against the combined spreadsheet. The key fields for the purpose of this study were combined into a single table using VLookup.

Columns were inserted to calculate the key ratios for this study, *very high reliance* and *high reliance* on service charges on depository accounts divided by total noninterest income. These two ratios are derived by ISERCHG / NONII = a ratio indicating the reliance of bank fees from depository services such as NSF fees, debit and credit card transaction and interchange fees, monthly account management fees, transaction fees from stop payments, wire processing, change orders, check cashing for non-customers, and other items.

Noninterest income is the sum of service charges on deposit accounts (ISERCHG), trading activity, extraordinary items, and other items. A high ratio from ISERCHG / NONII means that the bank relies heavily on service charges on deposit accounts for that percentage of their noninterest income. Net Income, or profit for a bank is derived from interest income plus noninterest income minus expenses. With the historically low interest rate environment that has existed since 2009, the net interest margin earned from interest income on loans minus interest expense on deposits remains low. Given the interest rate environment, increasing regulatory burdens and costs, and rule changes effecting noninterest income, banks continue to face challenges.

Dodd-Frank resulted in the creation of the CFPB and, later, the addition of the Durbin Amendment that limited banks collection of debit and credit card interchange income; the portion of fees paid based on the transaction amount of the consumer. This study seeks to correlate the relationship in these two restrictions on major sources of service fees on deposit accounts. During a period of economic recovery from the 2007-2009 economic crisis, these two further restrictions may have the unintended

consequence of contributing the failure of banks and, further, limiting new bank entrants into the U.S. banking industry.

In Figure 3, the US bank industry reliance ratio from 2005 through 2009 averaged 16.47%. From 2010 through 2015, the average is 14.08%. The linear line reveals the downward sloping curve resulting from the downward trend in the data.

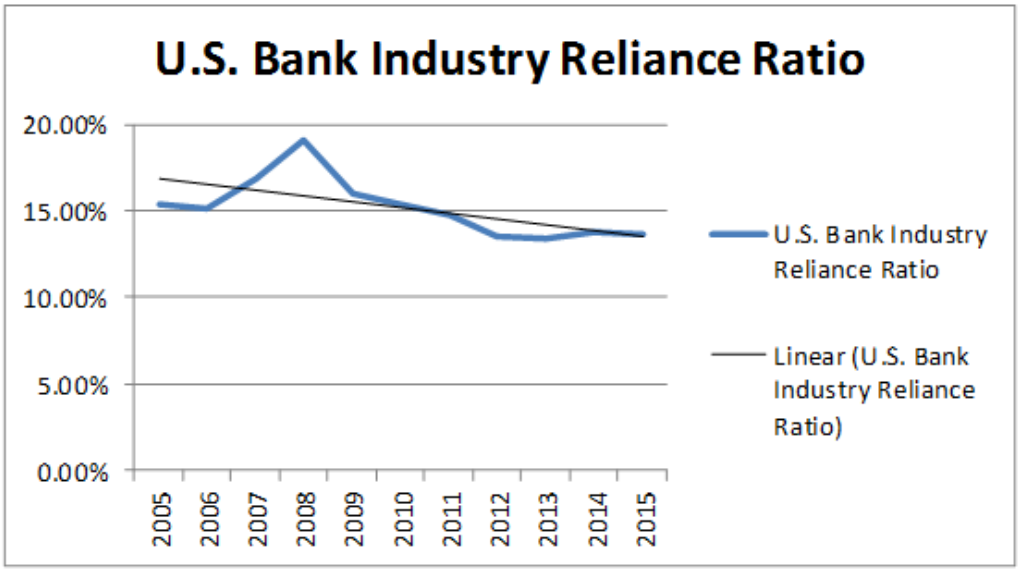

Figure 3. The United States banking industry reliance ratio and linear line showing a general decline from 2005 through 2015.

After calculating the ratio of ISERCHG / NONII the results were ordered and the banks were ranked in descending order. The top 10% are labeled *very high reliance* while the top third are labeled *high reliance*. The total ISERCHG for 2005 = $34,450,334,000 with the total NONII = $223,406,106,000 resulting in a U.S banking industry reliance of fees on depository accounts of 15.42%. This ratio has declined steadily to 13.58% as of year-end 2012.

The top four banks in the U.S. are disproportionately large in comparison to others. Together the top four banks in the U.S. comprise roughly 50% of the industry as measured by several factors. The top four banks are JP Morgan Chase, Citibank, Bank of America and Wells Fargo Bank. In 2005 Wachovia still existed and was combined with Wells Fargo. Therefore, for 2005 data analysis, Wachovia has been combined with Wells Fargo and treaded like a top four bank. None of these banks fall into the definition of either *very high reliance* or *high reliance*. The industry ISERCHG / NONII reliance ratio is 15.42%, 15.10%, 14.80%, and 13.58% in the years 2005, 2006, 2011, and 2012 respectively. Excluding these top four banks the ratio actually decreases to 14.67%, 13.85%, 12.40% and 11.87% meaning that, on average, these top four banks rely less heavily on fees from depository accounts than the other banks. The sum of both ISERCHG and NONII, excluding the top four banks, result in a reduction of nearly 50% of the industry total. In 2005 ISERCHG for the industry = $34,450,334,000 and excluding the top four = $16,557,638,000. Similarly, NONII for the industry in 2012 = $248,719,921,000 and excluding the top four banks = $148,748,888,000.

In Figure 4 we can see that the banks that did not include the data necessary to calculate the reliance ratios have the highest average assets of any of the three remaining groups. Banks with a *very high reliance* ratio (787) have average assets of $92,647,000. Banks with a *high reliance* (2,623) have $129,325,000. All other banks have significantly higher average assets of $760,450,000 (5,249). As hypothesized, it is the smaller banks that relied more heavily on service charges from deposit accounts as compared to the larger banks.

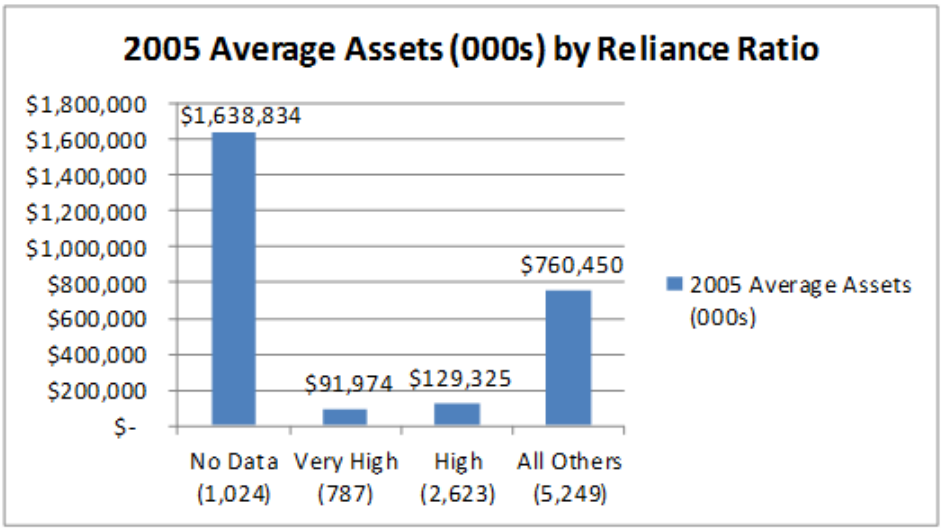

Figure 4. Average assets of banks with no data, very high reliance ratio (top 10%), high reliance ratio (top third) and all others.

Banks with a *high reliance* have a ratio of 74.70% in 2005 and 73.22%, 69.11%, and 66.06% in the years 2006, 2011 and 2012. The ratio statistic demonstrates a decline of 11.57% since the passage of Dodd-Frank legislation. The ratio for the total industry has declined 11.9%.

While the ratio is declining, both ISERCHG and NONII are increasing year-over-year in the total industry average of $4,321,000 $4,630,000 $4,631,000 and $4,770,000 for years 2005, 2006, 2011, and 2012 or as measured in total dollars of NONII in 2005 $25,292,000 and in 2012 $35,115,000. For banks termed *high reliance* the average ISERCHG and NONII has doubled from 2005 to 2012 with the average ISERCHG moving from $773,000 to $1,469,000, and for NONII $1,034,000 in 2005 to $2,223,000. The total sum for *high reliance banks* increased 52% from 2005 to 2012 for ISERCHG and 72% for NONII.

The *very high reliance* and *high reliance* ratios differ significantly from the other banks. The *other* banks represent two-thirds of the U.S. industry and have a reliance ratio of 17.01% in 2005 and 13.36% in 2012 as compared to those with a *high reliance* and a ratio of 74.70% in 2005 and 66.06% in 2012. The ratio of the *other* banks varies significantly from those with high reliance. The ISERCHG and NONII average of the high reliance group is $773,000 and $1,034,000 respectively in 2005 while the *other* bank average is $3,113,000 and $18,299,000 indicating that the banks with a *very high reliance* and *high reliance* tend to be the smaller, community based banks.

Table 3

Descriptive Statistics of declining number of Banks = "Gone by 2012"

Gone by 2012	
Total Banks	1,753
% of Total Banks Gone by 2012	19.82%
Very High Reliance both '05 & '06	215
Very High Reliance either '05 or '06 & not in both	66
Total Very High Reliance Gone by '12	281
'% of Very High Reliance Gone by '12 (10% of banks)	16.03%
High Reliance both '05 & '06	629
High Reliance either '05 or '06 & not in both	92
Total High Reliance Gone by '12	721
'% of High Reliance Gone by '12 (33.33% of banks)	41.13%

Table 3 shows the distribution of the banks that have a *very high reliance*, *high reliance*, or are coded as *No Data* or *All Other Banks*. Of the 787 banks in 2005 that have a *very high reliance* on fees on depository accounts and the 762 in 2006, 546 have *very high reliance*, top 10%, in both years. 2,425 banks are in the top-third, high reliance, in both 2005 and 2006. Of the *very high reliance* banks, 62% are in the top 10% in both

years 2005 and 2006, and 83% of banks coded as *high reliance* in 2005 and 2006. This indicates that a majority of banks had a much different business plan and relied on service fees as a function of noninterest income and profit.

Table 3 provides statistics that are further evaluated using logistic regression. The number of banks, from 2005 to 2012, has declined by 1,753 or 19.82%. The number of banks has been declining for a couple of decades before the economic crisis of 2007-2009. The number of banks in the U.S. tallied nearly 13,000 from 1960 until 1980 when it surpassed 18,000 in the mid-1980s. Since then, there has been a general decline in the number of banks. In late 1995, the number fell below 10,000 in late 1995, and in 2009, at the peak of the recent global economic crisis, the number of U.S. banks fell below 8,000.

From FDIC statistics, 17% of this decline has been from involuntary closures by a regulatory authority, failures, with the remaining being a function of mergers and acquisitions outpacing the formation of new banks. In the 1970s and 1980s, there were often years with as many as 300 to 350 new banks formed. Since 1990 the average number of new banks has averaged around 100 per year. However, since 2009 the numbers of new bank entrants, de novos, have been at historically low numbers. Since 2009 to 2013 there were only 11 new banks formed.

The hypothesis posed in Research Question 1 is that no correlation exists between banks that have a very high reliance, or high reliance, on fees on depository accounts and the declining number of banks. Of the 1,753 banks that failed or were acquired during those seven years, 281, or 16.03%, are coded *very high reliance* and 721, or 41.13%, are coded as *high reliance*. *Very high reliance* banks are the top 10% that relied most on fees on depository services divided by noninterest income. *High reliance* banks are the top

third or 33.33%. 16.03% of *very high reliance* banks no longer exist in 2012 as compared to only 10% of the population. 41.13% of the *high reliance* banks no longer exist in 2012 as compared to only 33.33% of the population.

Description of Procedure for Research Question 1 Logistic Regressions

FDIC Statistics data for all banks was downloaded into IBM SPSS. The fields discussed in Table 1 were used to calculate *reliance ratio*. *Reliance ratio* results were sorted from largest to smallest and a rank was assigned. The top 10% rank was labeled *very high reliance* and the top 33.3% were labeled *high reliance*.

Using FDIC certificate number, banks for 2005 and 2006 were compared to 2012 data. If the unique FDIC CERT number no longer appears in the 2012 dataset, the bank was considered to have failed or acquired. These banks were compared to FDIC Statistics failed and acquired datasets. Numbers of banks falling out of data set were labeled as *gone*.

A data set was created by copying rows of data from MS Excel to IBM SPSS. Columns moved into SPSS included FDIC CERT, ISERCHG, NONII, NETINC, reliance ratio rank, reliance ratio percentage converted to a number, a Boolean variable was created in which *Gone* = 1 and *not gone* = 0. IBM SPSS was used to calculate binary logistic regression with Gone = 1, Not Gone = 0 used as the dependent variable and modeling reliance ratio percentage and rank as independent variables. Hosmer-Lemeshow goodness-of-fit, Casewise listing of residuals, and the Confidence Interval for exp(B) at a 95% confidence interval was used.

Research Question 1 Regression Results

Table 4

Binary Logistic Regression Results 2005 to 2012

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	RelianceRatio	-.002	.001	5.464	1	.019	.998	.996	1.000
	Constant	-1.017	.055	341.187	1	.000	.362		

a. Variable(s) entered on step 1: RelianceRatio.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	8611.155[a]	.001	.002

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	26.387	8	.001

Table 5

Binary Logistic Regression Results 2006 to 2012

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	RelianceRatio	.000	.000	.009	1	.924	1.000	1.000	1.000
	Constant	-1.317	.029	2118.940	1	.000	.268		

a. Variable(s) entered on step 1: RelianceRatio.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	7843.084[a]	.000	.000

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	58.217	8	.000

A logistic regression analysis to investigate the potential unintended consequence of the Dodd-Frank legislation resulting in a positive correlation between a banks reliance on fees on depository accounts, in 2005 and / or 2006, and their likelihood to fail or be acquired by 2012 was conducted. The predictor variable was tested a priori to verify there was no violation of the assumption of the linearity of the logit. The predictor variable, *gone* = 1 and *exists* = 0, in the logistic regression analysis was found to not contribute significantly to the model.

The 2005 to 2012 unstandardized B = -1.017, SE = .055, Wald = 341.187, $p < .001$. The estimated odds ratio favored a positive relationship Exp (B) = .362, 95% CI (.996, 1.0) for every one unit increase of *reliance ratio*. Cox Snell is measured on a scale of 0 to .75 and 2005 results = .001 which means no significance. Nagelkerke R measures the variability of the data on a scale of 0 to 1.0 and the 2005 results were 0.00 meaning not significant. The Hosmer and Lemeshow Test mathematically tests if the null hypothesis can be improved upon within the model and the 2005 result is 0.00. With Hosmer and Lemeshow a non-significant result is desired but the binary logistic regression results of reliance ratio to *gone* = 1 and *exists* = 0 are not significant.

The 2006 to 2012 unstandardized B = -1.317, SE = .029, Wald = 2118.9, $p < .001$. The estimated odds ratio favored a positive relationship Exp (B) = .268, 95% CI (1.0, 1.0) for every one unit increase of *reliance ratio*. Cox Snell is measured on a scale of 0 to .75 and 2006 results = .000 which means no significance. Nagelkerke R measures the variability of the data on a scale of 0 to 1.0 and the 2006 results were 0.00 meaning not significant. The Hosmer and Lemeshow 2005 result is 0.00 meaning that the model is not meaningful.

Research Question 2

Research Question 2: Quantitative – is there a relationship between the dependent and independent variables, the financial performance of a bank as measured by the net income before the Dodd-Frank legislation versus after which is calculated using the calendar ending 2005 and 2006 data versus the results from 2012 and comparing the total assets of 2005 and 2006 versus 2012. Linear regression was utilized to statistically measure whether a significant correlation exists between banks with a *high reliance* or *very high reliance* on service charges on depository accounts divided by noninterest income as compared to those banks that did not have a *high reliance* or *very high reliance* on such fee income. A service charge on depository accounts was one of the early targets of Federal Reserve, Dodd-Frank, and Consumer Financial Protections Board (CFPB) initiatives. The CFPB was created as part of the Dodd-Frank legislation. Research Question 1 seeks to measure the unintended consequences of the Dodd-Frank legislation specific to whether the legislation contributed to the decline in financial performance and stability of the US banking industry banks. These pressures to earn profits when confronted with changing rules and increasing regulation may also be contributing to the general decline in the number of new bank entrants. Also, a precept of the Dodd-Frank legislation was to address the *too big to fail* issue while academic literature has suggested that it has not only failed in this regard, but institutionalized the problem further by disproportionately financially harming the smaller banks and reducing the number of banks in the industry that were the competition, and consumer alternatives, to the nation's largest banks.

$H2_o1$: There is no statistically significant predictive relationship between the dependent variable, declining financial performance as measured by net income (loss) performance as measured from results for 2005 and / or 2006 data versus 2012, for banks with a *high reliance* or *very high reliance* on service charges on depository accounts divided by noninterest income as compared to those banks that did not have a *high reliance* or *very high reliance* on such fee income.

$H2_A1$: There is a statistically significant predictive relationship between the dependent variable, declining financial performance as measured by net income (loss) performance as measured from results for 2005 and / or 2006 data versus 2012, for banks with a *high reliance* or *very high reliance* on service charges on depository accounts divided by noninterest income as compared to those banks that did not have a *high reliance* or *very high reliance* on such fee income.

Data Screening and Descriptive Statistics for Research Question 2

Just as for research question 1, data was downloaded from the FDIC Statistics on Depository Institutions (SDI) site. After downloading income statement data for all FDIC certified institutions (banks), Microsoft Excel was utilized to combine individual years into a single workbook so that ranking and sorting could be conducted. Total Assets from balance sheet data was added to the income statement and linked by using the FDIC certification number. Check balances were calculated on the original spreadsheets for each year and then compared against the combined spreadsheet. The key fields for the purpose of this study were combined into a single table using VLookup. Research question 2 used the research question 1 calculations of *very high reliance* and

high reliance on service charges on depository accounts divided by total noninterest income.

Research Question 2 seeks to measure the correlation of the Dodd-Frank legislation to the banks financial performance measured by the change in net income (loss) for banks with a *very high reliance* and *high reliance* versus those banks that did not rely as heavily on fees on depository services as compared to other fees. Research question 2 also seeks to measure the unintended consequences of the Dodd-Frank legislation, creation of the CFPB and related rule and regulatory changes to these related lines-of-business.

Net Income for 2005 and 2006, versus 2012, is illustrated in Figure 5. In 2005, the net income of banks that no longer appear in the 2012 data set, number 1,893 and had $25.275B in net income. Banks in 2005, which still exist as of 2012, number 5,864 and tallied $83.289B in net income. These two 2005 segments combine for a total of 7,758 banks and a total net income of $108.564B. This compares to a grand total net income of $133.815B for all banks that existed in 2005. This difference of $25.251B, or 18.87%, relates to banks that did not provide FDIC call report information for fees on depository accounts, ISERCHG, and were excluded from the analysis.

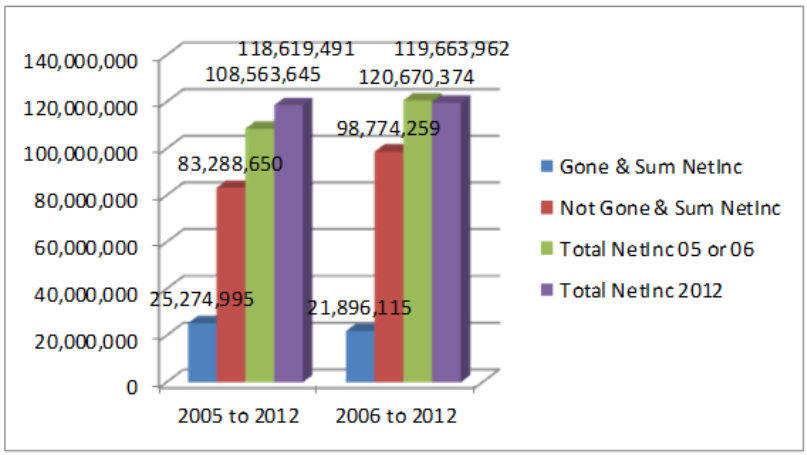

Figure 5. Net Income (000s) 2005 & 2006 compared to 2012 for Gone vs. Exists in 2012

From Figure 5, it is revealed that in 2005, $25.275B in net income relates to banks that failed or were acquired by 2012. For 2006, $21.896B in net income relates to banks that are no longer in the data set as of 2012. These two amounts were replaced by the banks that remained. In 2005 total net income was $108.564B while these same banks tallied $118.619B, a 9.25% increase, in 2012. Similarly in 2006 annual net income was $120.670B and despite 1,607 banks that failed or were acquired from 2006 to 2012, the net income for the remaining 6,001 banks equal $119.664B in 2012.

Net income for all banks totaled over $133B in 2005, $145B in 2006, $99B in 2007, <$9B> in 2009, but returned to over $140B in 2012 and has reached $163B for fiscal year end 2015. During the same period, the numbers of banks have declined from 8,845 in 2005 to 6,182 in 2015. Figure 6 displays total net income and non-interest income for banks from 2005 to 2015.

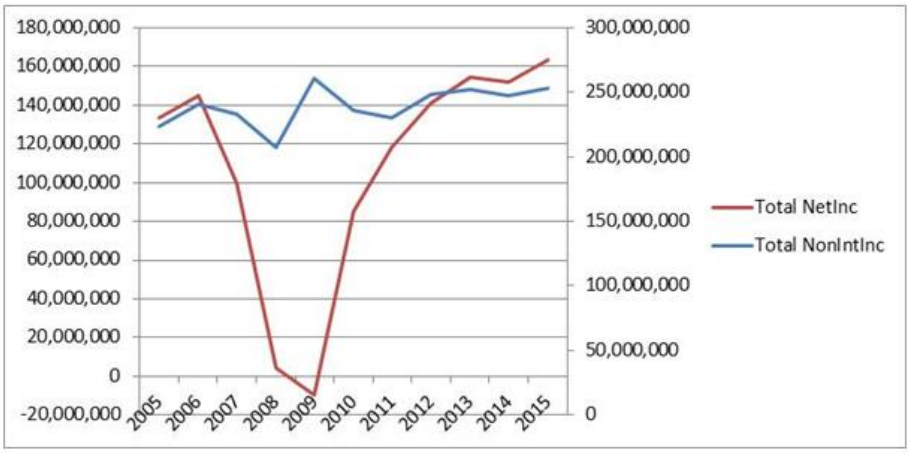

Figure 6. Total Net Income and Noninterest Income (000s) for Banks 2005-2015

Noninterest income is a significant component of net income as illustrated by the blue line of Figure 6. Net income = Net Interest Income + Noninterest Income – Noninterest Expense. Net-interest income for all banks totaled $223.4B in 2005, $240.4B in 2006, $233B in 2007, and peaked at $260.6B in 2009. Coinciding the passage of Dodd-Frank in 2009, noninterest income then declined in the following years. 2013, 2014, and 2015 are $252.5B, $247.9B and $253B respectively. Even six years after the 2009 peak, noninterest income has not yet reached $260B.

Similar to total assets as illustrated in Figure 4, Figure 7 displays the net income of *very high reliance* and *high reliance* banks and indicates that such banks tend to be smaller as compared to *all other* banks. However, from 2005 and 2006 to 2012, the net income in the *very high reliance* and *high reliance* banks increased dramatically. *Very high reliance* bank net income totals increased over 100% while *high reliance* banks increased ten-fold.

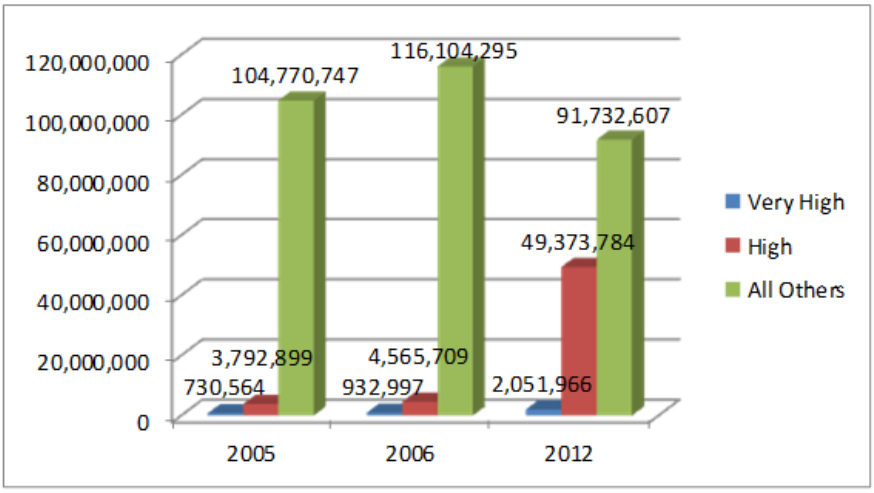

Figure 7. *Net Income (000s) for banks by Reliance Ratio*

Dodd-Frank sought to *improve* fees on depository accounts to benefit consumers. However, by creating new rules focused on NSF and overdraft fees, many banks reacted by moving from free accounts supported by NSF and overdraft fees to simply charging all accounts a monthly maintenance fee.

Table 6

Net Income by Reliance Ratio

Net Income by Reliance Ratio	2005	2006	2012
Very High (top 10%)	730,564,000	932,997,000	2,051,966,000
# of Very High	775	760	708
Average NetInc Very High	942,663	1,227,628	2,898,257
High	3,792,899,000	4,565,709,000	49,373,784,000
# of High (top 1/3rd)	2,585	2,536	2,360
Average NetInc High	1,467,272	1,800,358	20,921,095
All Others	104,770,747,000	116,104,295,000	91,732,607,000
# of All Others (2/3rd)	5,173	5,071	4,720
Average NetInc All Others	20,253,382	22,895,739	19,434,874
Total Net Income	109,294,210,000	121,603,001,000	143,158,357,000
# Banks w/ Calc Reliance Ratio	8,533	8,367	7,788
Average NetInc All Others	12,808,416	14,533,644	18,381,915

Figure 8 displays a change from 2005 and 2006 to 2012. The sum and average net income for *very high reliance* and *high reliance* banks changed dramatically. Linear regression results are discussed later in this chapter.

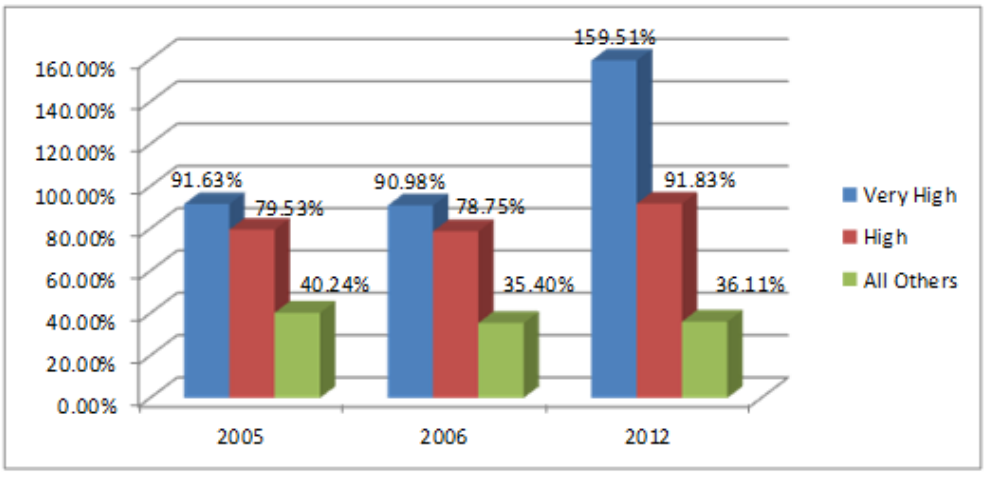

Figure 8. Reliance Ratio Percentages

The reliance ratio percentages for *all others* have remained relatively stable. However, from 2005 and 2006 to 2012, the reliance ratio percentages for *very high reliance* and *high reliance* banks changed significantly. The *very high reliance* ratio increased 174%. *High reliance* banks in 2012 have a similar ratio percentage to the *very high reliance* ratio banks of 2005 and 2006. From Figure 8, net income has increased from 2005 to 2006 and from 2006 to 2012. Simultaneously, the amount of average fees from depository accounts has increased substantially while rule changes on NSF and overdraft fees, from the Dodd-Frank legislation and the CFPB, have been offset from another source.

Description of Procedure for Research Question 2 Linear Regressions

FDIC Statistics data for all banks was downloaded into IBM SPSS. The fields discussed in Table 1 were used to calculate *reliance ratio*. *Reliance ratio* results were sorted from largest to smallest and a rank was assigned. The top 10% rank was labeled *very high reliance* and the top 33.3% were labeled *high reliance*.

Using FDIC certificate number, banks for 2005 and 2006 were compared to 2012 data. If the unique FDIC CERT number no longer appears in the 2012 dataset, the bank was considered to have failed or acquired. These banks were compared to FDIC Statistics failed and acquired datasets. Numbers of banks falling out of data set were labeled as *gone*.

A data set was created by copying rows of data from MS Excel to IBM SPSS. Columns moved into SPSS included *FDIC CERT* used only to identify the bank, *change net income 2005 to 2012* as the dependent variable, and *ISERCHG, NONII, reliance*

ratio percentage converted to a number, and a Boolean variable representing *Gone* = 1 and *not gone* = 0. IBM SPSS was used for linear regression.

Table 7

Research Question 2 Linear Regression Descriptive Statistics 2005 to 2012

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation
iserchg	7754	2135999	1	2136000	21413892	2761.66	34205.180
nonii	7754	7190908	-884	7190024	105637344	13623.59	186157.590
RelianceRatio	7754	2945.83	-2500.00	445.83	413656.81	53.3475	40.80986
Gone=1 Exist=0	7754	1.00	.00	1.00	1893.00	.2441	.42960
05 Net Income	7754	6070110.00	-35110.00	6035000.00	73360528.00	9460.9915	104253.4880
12 Net Income	7754	6252409.00	-830506.00	5421903.00	63864935.00	8236.3857	109992.9022
Change Net Income 05 to 12	7754	8412459.00	-6035000.00	2377459.00	-9495593.00	-1224.6058	95975.73492
Valid N (listwise)	7754						

The number of banks in the data set was 7,754. The range, minimum, maximum, sum, mean and standard deviations of the individual variables are reported in Table 7. The change in net income from 2005 to 2012 was evaluated using linear regression to identify the correlation of reliance ratio on the financial performance of the bank.

Table 8

Research Question 2 Linear Regression Descriptive Statistics 2006 to 2012

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation
iserchg	7604	2459999.00	1.00	2460000.00	22119723.00	2908.9588	39002.80001
nonii	7604	10393602.00	-273686.00	10119916.00	114609424.0	15072.2546	232840.9881
RelianceRatio	7604	24885.71	-24100.00	785.71	379188.87	49.8670	278.31914
Gone=1 Exist=0	7604	1.00	.00	1.00	1607.00	.2113	.40828
Net Income 06	7604	6499983.00	-143983.00	6356000.00	79789208.00	10493.0573	130363.5894
Net Income 12	7604	6252409.00	-830506.00	5421903.00	64909527.00	8536.2345	111492.8519
Chg Net Inc 06 12	7604	8144328.00	-6356000.00	1788328.00	-14879681.00	-1956.8229	94946.54818
Valid N (listwise)	7604						

In 2006 there were 7,604 banks in the data set. Compared to 2005, the data set was reduced by 150 banks. Banks were excluded from the data set of all banks if they did not provide information on fees on depository accounts, *ISERCHG*. The primary reason the data set declined from 2005 to 2006 was the reduction in the number of banks because of failures and/or acquisitions. Overall the descriptive statistics identify consistency in the data to be used for linear regression.

Table 9

Research Question 2 Correlations 2005 to 2012

Correlations

		Change Net Income 05 to 12	iserchg	nonii	RelRatioRank
Pearson Correlation	Change Net Income 05 to 12	1.000	-.498	-.037	-.005
	iserchg	-.498	1.000	.663	.057
	nonii	-.037	.663	1.000	.092
	RelRatioRank	-.005	.057	.092	1.000
Sig. (1-tailed)	Change Net Income 05 to 12	.	.000	.001	.344
	iserchg	.000	.	.000	.000
	nonii	.001	.000	.	.000
	RelRatioRank	.344	.000	.000	.
N	Change Net Income 05 to 12	7721	7721	7721	7721
	iserchg	7721	7721	7721	7721
	nonii	7721	7721	7721	7721
	RelRatioRank	7721	7721	7721	7721

Table 10

Research Question 2 Correlations 2006 to 2012

Correlations

		Chg Net Inc 06 12	iserchg	nonii	RelRatioRank
Pearson Correlation	Chg Net Inc 06 12	1.000	-.590	-.411	-.017
	iserchg	-.590	1.000	.668	.052
	nonii	-.411	.668	1.000	.082
	RelRatioRank	-.017	.052	.082	1.000
Sig. (1-tailed)	Chg Net Inc 06 12	.	.000	.000	.068
	iserchg	.000	.	.000	.000
	nonii	.000	.000	.	.000
	RelRatioRank	.068	.000	.000	.
N	Chg Net Inc 06 12	7604	7604	7604	7604
	iserchg	7604	7604	7604	7604
	nonii	7604	7604	7604	7604
	RelRatioRank	7604	7604	7604	7604

Table 11

Research Question 2 Linear Regression Results 2005 to 2012

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.635[a]	.403	.403	74334.34348	.403	1735.813	3	7717	.000

a. Predictors: (Constant), RelRatioRank, iserchg, nonii

Table 12

Research Question 2 Linear Regression Results 2006 to 2012

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.591[a]	.349	.349	76600.39869	.349	1360.345	3	7600	.000

a. Predictors: (Constant), RelRatioRank, iserchg, nonii

Table 13

Research Question 2 Linear Regression Results 2005 to 2012 – removing noninterest income

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.503[a]	.253	.253	83155.48181	.253	870.276	3	7717	.000

a. Predictors: (Constant), Gone=1 Exist=0, iserchg, RelianceRatio

Table 14

Research Question 2 Linear Regression Results 2005 to 2012 – removing Reliance Ratio

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.503[a]	.253	.252	83165.63120	.253	1303.654	2	7718	.000

a. Predictors: (Constant), Gone=1 Exist=0, iserchg

Table 15

Research Question 2 Linear Regression Results 2006 to 2012 – removing noninterest income

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.593[a]	.352	.351	76470.87947	.352	1373.545	3	7600	.000

a. Predictors: (Constant), RelianceRatio, Gone=1 Exist=0, iserchg

Table 16

Research Question 2 Linear Regression Results 2006 to 2012 – removing Reliance Ratio

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.593[a]	.352	.351	76465.91750	.352	2060.579	2	7601	.000

a. Predictors: (Constant), iserchg, Gone=1 Exist=0

Research Question 2 Regression Results

To investigate research question 2, SPSS linear regression was conducted. The dependent variable was the *change in net income* from 2005 to 2012 and 2006 to 2012. The question posed was whether the *reliance ratio*, calculated by fees on depository accounts divided by noninterest income was a predictor of negative change in net income for banks. The conclusion is that the null hypothesis cannot be rejected as *reliance ratio* does not have a significant impact on the *change in net income* for 2005 to 2012 or for 2006 to 2012.

Tables 11 and 12 display the strongest R-squared linear regression results. In this linear regression run the independent variables were *reliance ratio, ISERCHG* and *NONII*. It has already been established that the two components of net income for a bank are interest income and noninterest income. Multicollinearity logically exists between *NONII* and *NETINC*.

Table 13 and 14 illustrate the change in R-squared when reliance ratio is removed for the time period 2005 to 2012. Table 15 and 16 do the same for the time period 2006 to 2012. Analyzing first the two Tables 13 and 14 and then secondly 15 and 16 it is clear that removing the independent variable *reliance ratio* has no impact on the model. The

same process was run using *reliance ratio rank* was also analyzed but the same results were found.

Summary

Quantitative correlation results reveal no significant predictive value in the *reliance ratio*. *Reliance ratio* is calculated by dividing fees on depository accounts by noninterest income to determine the degree to which a bank relies on depository account fees. Depository account fees in the form of NSF and overdraft services were the focus of a Federal Reserve initiative and expanded in the Dodd-Frank legislation passed in 2009. The Dodd-Frank legislation resulted in the formation of the Consumer Financial Protection Bureau that further expanded rules and regulations meant to curb banks' use of such consumer fees. The intent of this quantitative research was to measure the impact of the new rules.

Chapter 5 is the concluding chapter of this quantitative correlation research study on the effects of the 2007-2009 economic cycle and Dodd-Frank legislation on US banks. The study focused on the consumer impact of new rules and regulations related to NSF and overdraft fees on depository accounts. Chapter 5 includes a discussion of findings of the study, with recommendations for action, opportunities for future research, and perspectives on positive social change.

Chapter 5: Summary, Conclusion and Recommendations

Introduction

The purpose of this correlation research study was to investigate two research questions regarding the impact of the Dodd-Frank legislation on the U.S. banking industry. The Dodd-Frank Wall Street Reform and Consumer Protection Act took effect July 21, 2010, and consisted of over 2,300 pages, introduced around 400 new rules, and a created a new regulatory agency, the CFPB.

The Dodd-Frank legislation and the creation of the CFPB resulted in rule and regulatory changes regarding bank programs, products, and processing of consumer NSF and overdraft events. NSF and overdraft events occur when the consumer generates a financial transaction against their checking account but does not have a sufficient balance to cover the transaction, resulting in a negative account balance situation. The bank is confronted with the decision to either pay the item and provide a service to the consumer, or generate a negative balance in the consumer's account which may or may not be repaid. Risk management is required to determine how much risk is prudent based on the banks desire to deliver a valuable service to the consumer while minimizing losses when negative accounts are not repaid.

Prior to Dodd-Frank, consultants and software programs with sophisticated algorithms helped banks manage their risk tolerance level. One problem that resulted was that, in making an overdraft-limit available to consumers, banks gave consumers the ability to create NSF transactions while the consumers, if they had the knowledge that the transaction would result in an NSF fee, may have preferred that the transaction be rejected. A rejected or declined transaction in an electronic environment such as a debit

card swipe would inform the consumer that they do not have a sufficient balance. NSF fees are typically $35-$36 per transaction, and the creation of more items by extending an overdraft-limit was viewed as onerous by the CFPB--particularly when the transaction was for things such as coffee or fast food and had a total purchase amount of less than $5 or $10 but nonetheless resulted in a $35-$36 fee.

CFPB rule changes required banks to modify their delivery of these services and change the associated products. The initial result of the Dodd-Frank legislation accompanied a pronounced decline in both service charges on deposit accounts and total noninterest income. Total noninterest income has rebounded since 2010 and, by 2012, was very near the peak 2009 total. Service charges on depository accounts remained lower than peak 2009 values. The $38.23 billion average of 2005-2009, versus the $33.92 billion average of 2011-2015, reveals a net reduction in fee income of $4.31 billion annually. Total noninterest income and service charges on depository accounts from 2005 to 2015 is illustrated in Figure 9.

Figure 9. Total noninterest income and service charges on depository accounts from 2005 to 2015.

The effects of the economic crisis of 2007-2009 lingered for years after the economy began to stabilize in 2010. I designed this study to isolate the effects of the economic crisis while measuring the effects of the legislated and regulatory changes. I used statistics from 2005 and 2006 as "before" data, and those from 2011 and 2012 as "after" data.

I designed Research Questions 1 and 2 to test for the unintended consequences of the Dodd-Frank legislation that Bexley (2014) and Barth, Prabha, and Swagel (2012) posited in their theories. I defined the impact of Dodd-Frank as the rate of bank failure in Research Question 1, and the declining financial performance of banks Research Question 2. The declining financial performance of banks may be hindering the number of new entrants. The legislation negatively impacts financial performance by increasing compliance and regulatory costs and decreasing consumer fees on depository services. The dependent variable was defined as the change in certain key ratios, noninterest income results, and profitability reported in the years before and after Dodd-Frank. The controlling and intervening variables were controlled by focusing specifically on consumer fees and were statistically controlled in the study.

Dodd-Frank was intended to address the "too big to fail" problem. However, it appears that the Dodd-Frank legislation may have had the unintended consequence of institutionalizing the problem by increasing regulatory costs and removing the NSF fee. If one subscribes to the theory that the United States better fosters entrepreneurialism and small business start-ups through the availability of credit from thousands of banks, then the early statistics should create concern. From 2007 through 2013 the number of banks declined by over 800 institutions (McCord, et al., 2015, 1). Two-thirds of this reduction

can be attributed to a historically low number of new banks being formed. From 2002 through 2008 there were more than 100 new banks formed every year (FDIC, 2015). After Dodd-Frank, from 2010 to 2013, there were four (FDIC, 2015). In 2012 there were zero, and in 2013 there was only one (FDIC, 2015).

After the economic crisis of 2007-2009 and the implementation of the Dodd-Frank legislation rules, over 800 banks failed and a historically low number of banks are being formed. The null hypothesis of Research Question 1 was that the Dodd-Frank legislation has not had the significant unintended consequence of reducing the number of banks in the U.S. banking industry. The null hypothesis of Research Question 2 was that the Dodd-Frank legislation has contributed to a significant decline in the financial performance of banks in the United States as measured by change in net income from 2005-2006 to 2011-2012. Both Research Questions 1 and 2 focus specifically on the change in fees on depository accounts as a function of noninterest income. The NSF and overdraft programs, products, and processes have an important social component.

Together the research questions asked how the Dodd-Frank legislation and resulting CFPB rule and regulatory changes may have harmed the U.S. banking industry, contributed to the failure of banks, contributed to on-going poor performance of banks, and impacted the number of new bank entrants.

Several descriptive statistical findings from Research Questions 1 and 2 pointed to opportunities for future study detailed later in this chapter. To derive a reliance ratio for both research questions, I divided the amount of service charges on depository accounts by total noninterest income. A high percentage result indicated a high reliance on service charge on depository accounts as a percentage of total noninterest income. I

sorted the resulting reliance ratios from high to low and then ranked them. I termed the top 10% of banks *very high reliance*, and the top one-third was *high reliance*.

For Research Question 1, I used SPSS logistic regression and found that results were not statistically significant and that the null hypothesis could not be rejected. I created a Boolean variable to represent whether the bank that existed in 2005 and/or 2006 still existed in 2012. If the bank's FDIC certification number no longer appeared in the data set, then I termed the bank *gone*. If the bank's FDIC certification number remained in the 2012 data set, then I gave it the term *exists*. For purposes of logistic regression *gone* = 1 and *exists* = 0. The dependent variable was *gone* or *exists.* The independent variable was the reliance ratio calculated percentage and, in another iteration, the reliance ratio rank. The *very high reliance* ratio or the *high reliance* ratio did not prove statistically significant as a predictor to whether the bank was gone in 2012.

For Research Question 2, I used SPSS linear regression. The bank financial performance was the dependent variable as represented by the change in net income from 2005 and 2006 to 2012. The independent variables included *reliance ratio* percentage, and service charges on depository accounts. I ran several iterations of linear regression for the different years and variables to verify that the results for Research Question 2 were not statistically significant and that the null hypothesis could not be rejected. The strength of the reliance ratio did not prove to be statistically significant as a predictor to a change in net income from 2005 and 2006 to 2012.

Interpretation of Findings

The 2007-2009 economic crises was the most severe recession since World War II as evidenced by the employment rate doubling, the loss of over 8 million jobs, and

numerous quarters of negative GDP growth in 2008 and 2009 (Connaughton & Madsen, 2012). Banking practices, policies and products were assigned part of the blame as to the cause of depth and severity of the 2007-2009 economic crisis. As a reaction and with the intent of avoiding similar causal forces in the future, global regulatory changes were made to banking practices; particularly in regards to mortgage and derivative instrument investing. In the U.S. these changes are contained mostly in the Dodd-Frank legislation which included several other banking reforms as well. Many academic research studies and articles have been published regarding the rule and regulatory changes effecting mortgages and derivative investments. One of those other reforms focused on the methodology and products associated with how banks process NSF transactions and charge for overdraft accounts. After diligent research, no studies were found regarding the service charge fee components of Dodd-Frank which resulted in the creation of the CFPB. These service charge fees have an important social change component as they disproportionately are assessed on the lower income segments of our society.

This quantitative correlation study investigated the effects of these rule and regulatory changes to determine if there was an unintended consequence resulting in the decline in the number of banks and if there was a disproportionate impact on banks that relied most heavily on this type of fee income as a function of their noninterest income. The findings of the descriptive statistics resulted in the identification of several opportunities for future study detailed later in this chapter. The findings of the two research questions, based on regression results, were that a *very high* or *high reliance ratio* is not a statistically significant predictor.

Research Question 1

Research question 1 findings were that the reliance ratio of service charges on depository accounts divided by noninterest income is not a significantly predictive to whether a bank in 2005 and / or 2006 would have failed or been acquired by 2012. As service charges on depository accounts declined significantly coinciding with the passage of the Dodd-Frank legislation, the null hypothesis was that banks that relied most heavily on this type as a business philosophy were not more likely to have failed or been acquired. The three components of net income for a bank are net interest income plus noninterest income minus noninterest expense. The research question 1 hypothesis was that when the *reliance ratio* was *very high* or *high,* then a change that results in a dramatically lower source of income would correlate to the decline in the number of banks. However, results of logistic regression on *reliance ratio* as the independent variable and *gone = 1 exists = 0* as the dependent variable resulted in a failure to reject the null hypothesis.

The 2005 to 2012 unstandardized B = -1.017, SE = .055, Wald = 341.187, $p < .001$. The estimated odds ratio favored a positive relationship Exp (B) = .362, 95% CI (.996, 1.0) for every one unit increase of *reliance ratio*. Cox Snell is measured on a scale of 0 to .75 and 2005 results = .001 which means no significance. Nagelkerke R measures the variability of the data on a scale of 0 to 1.0 and the 2005 results were 0.00 meaning not significant. The Hosmer and Lemeshow Test mathematically tests if the null hypothesis can be improved upon within the model and the 2005 result is 0.00. With Hosmer and Lemeshow a non-significant result is desired but the binary logistic regression results of reliance ratio to *gone* = 1 and *exists* = 0 are not significant.

The 2006 to 2012 unstandardized B = -1.317, SE = .029, Wald = 2118.9, $p < .001$. The estimated odds ratio favored a positive relationship Exp (B) = .268, 95% CI (1.0, 1.0) for every one unit increase of *reliance ratio*. Cox Snell is measured on a scale of 0 to .75 and 2006 results = .000 which means no significance. Nagelkerke R measures the variability of the data on a scale of 0 to 1.0 and the 2006 results were 0.00 meaning not significant. The Hosmer and Lemeshow 2005 result is 0.00 meaning that the model is not meaningful.

Research Question 2

In research question 2 I posed the question: were banks, with a *very high reliance* or *high reliance* on service charges on depository accounts, affected more negatively than those banks with lower *reliance ratios*? The results of linear regression were found to not be significant between the *reliance ratio* or *reliance ratio rank* and service charges on deposit accounts as a predictor to change in net income.

The predictor variable was found to not be statistically significant [B = .531, 95% C.I. (-51.83, 52.892), $p < .05$], indicating that for every one unit increase in *reliance ratio* the change in net income changed by .531 units. Neither *reliance ratio* nor *reliance ratio* rank have a significant impact, or serve as a predictor, to bank financial performance as measured by change in net income for the range of years researched.

From the originally conceived design of the research study, the creation of the research question hypotheses to the statistical results, much was learned in terms of data content and data relationships. The relative *reliance ratios* could also warrant a banks inclusion or exclusion in the analysis or suggest further segmentation for analysis. Much

of these lessons learned result in discussion in the recommendations for future study section of this chapter.

Limitations of the Study

This research study was limited to two research question hypotheses related to changes in bank fees on depository accounts as a result of the Dodd-Frank legislation. To accomplish the statistical analysis, a reliance ratio was calculated by dividing fees on depository accounts by noninterest income. The resulting reliance ratio was then ordered numerically and the top 10% were labeled *very high reliance ratio* and the top third was termed *high*. These ratios were then analyzed using descriptive statistics and regression.

To limit the scope of the research study, reliance ratio correlation to noninterest income and net income changes from 2005 and 2006 to 2012. The analysis was focused on addressing the two research questions. Study of the reliance ratio by type of bank, asset size of bank, geographic location, and years after 2012 could provide meaningful information to advance the academic literature, policies, regulations, and the U.S. banking industry.

The research study was limited to FDIC insured banks. The study of over 7,000 credit unions could also be considered. The FDIC quarterly call report data does include several categories of noninterest income but fees on depository accounts are bundled into a single line item that actually increased despite the target of the legislation. More details on the source of fees would be helpful to analysis. Ideally fees from NSF and overdrafts could be reported separately from monthly maintenance account fees, debit and credit card interchange fees, and other types of fees.

A Boolean variable was created to represent whether a bank existed as of year-end 2005 or 2006 but was no longer in the data set as of 2012. The variable was termed *gone* and a value of 1 = *gone* while 0 = *exists*. This variable was limited to the identification of the bank no longer being present in the data as of year-end 2012 but did not identify whether the bank failed or was acquired. Results may have varied had the analysis considered why the bank vanished from the data set.

Reliance ratio results were expressed by both a rank to identify the top 10% and top third, and by the percentage ratio. However, results could have also segmented results by asset tier or by relative dollar amounts of fees on depository services. Having done so could have resulted in the isolation or exclusion of banks that did not report significant fees on depository accounts. Having a more concentrated analysis could have yielded more significant results.

The study was limited to banks that had the necessary data to allow the calculation of the reliance ratio. In 2005 there were 8,845 total banks in the FDIC dataset but only 8,533 had the required data which equals a 96.4% inclusion rate. In 2006 there were 8,691 total banks and 8,367 were included in the dataset and statistically analyzed which equals 96.2%

The research study considered only quantitative results reported through required quarterly FDIC call reports and used only quantitative methods. Further research into bank data outside FDIC call report data may provide some additional insights. Qualitative methods, interviews and surveys of bank executives, regulators, and consultants would likely provide more information.

Fees to consumers that result from bank NSF and overdraft events can potentially result in fees from both the bank and the vendor while also having potential impact on the consumer's credit rating and other long lasting consequences. It is possible that overall consumer fees increased as they could have been passed from banks to vendors. It is also possible that consumer fees increased because NSF and overdraft fees were replaced by monthly maintenance fees. This research study was limited to bank fees on depository accounts.

Recommendations for Future Study

The purpose of the research was to investigate the effect of the 2007-2009 economic crises, and simultaneous passage of the Dodd-Frank legislation, impact on the US banking industry related to the consumer impacting NSF and overdraft fees. The Dodd-Frank legislation resulted in the creation of the Consumer Financial Protection Bureau. The CFPB was formed to regulate such fees because they have an important social impact component. The FDIC data source includes hundreds of lines of quarterly details on bank performance. Unfortunately, the FDIC reported noninterest income fees on depository accounts, ISERCHG, include a myriad of fees. The research study sought to investigate the correlations and unintended consequences of the rule and regulation changes focused on NSF and overdraft fees. From 2005 and 2006 to 2012, the total bank fees on consumer depository accounts decreased while the net income, for banks that rely most on such fees, increased dramatically. This result should be investigated further and would be aided by more data on the types of fees and service charges assessed by banks. Without more data it is difficult to ascertain causal and correlation relationships within

the data and to assess whether intended effect of the CFPB and other regulatory changes are effective or counteracted.

To investigate this phenomenon further, there are several opportunities for additional research. First, the calculated *reliance ratio* was related to noninterest income and net income segments of data. More could be done to segment the bank data by type of bank. Another opportunity would be to investigate geographic differences; especially those states like Nevada, California and Florida that were most impacted by the economic crisis and suffered the most in terms of bank failures and acquisitions. Thirdly, bank asset size could be an important delimiter as the data revealed that banks that rely most on fees on deposit accounts tended to be smaller in 2005 and 2006. Did the asset sizes of the banks with *very high* and *high reliance ratios* increase as much as the net income?

The decrease in the number of banks continues to be dramatic. There are over twenty-percent fewer banks at the end of 2015 than prior to the passage of the Dodd-Frank legislation in 2009. From the literature review there are many references to the increases in noninterest expense related to compliance, legal, regulatory, and audit requirements associated with the Dodd-Frank legislation. Audit, legal, compliance, and regulatory costs are not reported in detail or broken out from general salary expenses. Additional data reported on regulatory and compliance costs should be considered as this information would enable a cost-to-benefit analysis of regulations.

A central tenet of the legislation was to solve the *too-big-to-fail problem* but it has been suggested that the legislation actually institutionalized this problem. The cause of the potential unintended consequence of a declining number of banks is related to the burden of regulatory costs and additional oversight of newly formed banks for an

extended period. To what degree does this contribute to the dwindling number of new bank formations to replace those that fail or are acquired? For the decades previous to the Dodd-Frank legislation, there were over 100 de novos launched every year. Since the passage of Dodd-Frank in 2009, the total new banks formed are less than twenty and is averaging less than 5 per year. Much could be researched regarding the increases in noninterest expense as a result of Dodd-Frank but similar to fees on depository accounts, the bank reported data does not provide the detail within the noninterest expense totals. This is a limiting factor to further research as some expenses may have been reduced to offset increased expenses to manage Dodd-Frank related costs. Banks coded as gone from that data set were analyzed but not broken down between failed versus acquired. There is an opportunity to do more analysis on the reason the bank no longer exists as of year-end 2012.

The numbers of credit unions have declined as well. Research could investigate similar reliance ratios using NCUA credit union quarterly data. Is there additional fee income and noninterest income reporting available to research and, if so, would the results be similar to this study?

Qualitatively, bank executives and consultants could be interviewed or surveyed regarding their diversification away from NSF and overdraft fees. Banks adapted to new products and programs that resulted in more than offsetting the impact of the Dodd-Frank and CFPB rule and regulatory changes regarding NSF and overdraft fees. To what degree did some banks continue on with previous methods by having consumers opt-in? To what degree did banks launch new monthly account maintenance fees to offset NSF and overdraft fees? Descriptive statistics reveal an initial decline in total fees on

depository accounts but such fees returned to previous levels within years. What was this source of new fee income?

Implications for Positive Social Change

Banks in the U.S. banking industry play an important role in the extension of credit to individuals and small to medium sized businesses. Banks also provide critical services to account holders, and extend financial services in rural areas. Community banks provide competition to the larger banks which extends a benefit to society through more service offerings and competitive prices. The vitality of the nation's community banks is important to the overall health of the economy and society. The U.S. has over 7,500 banks (FDIC, 2015) while most countries have five to twenty.

Entrepreneurs, and small businesses, of the U.S. are able to seek debt financing from dozens of institutions. Only in the United States is a start-up, or small business, able to solicit dozens of institutions. In the United States, there is a government backed Small Business Administration ("SBA") that provides both start-ups, *SBA CDC 504*, and additional capital, *SBA 7(a)*, loans (SBA, 2015). Banks compete and market to these small businesses that, in turn, provide new jobs and innovation to the market place. The number of banks in the United Stated results in competition and force banks to innovate and provide leading edge services to make operations more efficient and be more appealing to clients.

Individual consumers benefit from the number of banks, and competition within the U.S. banking industry. Unrelated to the real estate fueled economic crisis of 2007-2009, the Dodd-Frank legislation led to rule changes that targeted the fees banks charge consumers for depository accounts. Since the Dodd-Frank legislation, the number of

banks in the U.S. has also declined by 20% and while, Dodd-Frank was supposed to address the *too-big-to-fail problem*, academic literature points out that it may have institutionalized the problem by creating costs and regulations that hinder the formation of new banks and incent smaller, community-based banks to be acquired. A declining number of banks, especially the smaller community-based and rural banks have a likely negative impact on society.

Results from this research study suggest that the intent of the Dodd-Frank legislation to lower certain types of bank fees to consumers failed. Overall, the *reliance ratio* and net income of *very high* and *high reliance ratio* banks increased dramatically from 2005 and 2006 to 2012. Free checking accounts were once the norm and now can only be earned by achieving minimum balancer requirements which are not targeted at the masses. The new checking products have $3 to $5 monthly maintenance fees that shift the source of fee income from those individuals that generated NSF and overdraft fees to all consumers.

In May 2013, the National Consumer Law Center (NCLC) submitted comments to the Federal Reserve, OCC, and FDIC on behalf of low income clients. NCLC said they were particularly concerned about NSF and overdraft practices and are requesting more data regarding consumer deposit account balances and consumer deposit service charges. They proposed expanded data collection on three important categories of service charges on depository accounts. The three categories where more information is needed were overdraft related service charges, monthly maintenance fees and automated teller machine fees. (NCLC, 2013)

Service charges on depository accounts have declined since their peak in 2009 as measured for the overall U.S. banking industry. However, noninterest income has nearly returned to peak 2009 levels. New practices, products, and processes have been created since the passage of the Dodd-Frank legislation and creation of the CFPB. One new practice allows consumers to opt-in to a program in which the bank can continue with pre-Dodd-Frank practices. Some banks succeeded in changing account agreements and receiving a large number of customer opt-ins. Some of these new programs and products seek to offset the decline in the targeted NSF and overdraft fee income. The lack of detailed data regarding these socially impactful bank charges limits research. The 2013, NCLC request for more data would be helpful if all banks were required to comply. In addition to reporting data on NSF and overdraft transactions, data should be reported on NSF and overdraft account fees. A recent trend has focused on consumers paying a monthly account fee, typically in the $15-$18 range as a type of insurance instead of incurring an NSF fee, or multiple fees, that can impact the monthly budget of many lower income families. If banks charge fewer NSF transaction fees while paying items and replace some, most or all of the forgone income through monthly maintenance fees on such products while returning all presented items, an overall negative social impact would occur. Ideally bank rules and regulations would be more effectively implemented so that the desired effects are achieved. Doing so might positively affect social change and improve financial status of society while increasing competition which incents innovation and service.

Conclusion

Banking services are a critical component to the U.S. economy. The U.S. banking industry differs significantly from those of other major global economies in many ways. There are over 13,000 banks and credit unions in the U.S. These financial institutions compete for credit and depository services while blanketing the U.S. geographically from major metropolitan cities to rural communities. In contrast, other major global economies have only a few to very few banks. The number of banks in the U.S. may extend advantages to individuals, small businesses, and corporations. The number of banks is declining and the number of new bank entrants is virtually zero. Many suggest that something should be done to change this trend and the increased regulatory and compliance burden and costs may be a place to start.

Since the great depression of 1929, banks have played an important role in providing depository services to the populous and the FDIC has provided the assurance that society's deposits are insured by the full faith of the U.S. government. With this governmental insurance comes governmental regulation. The intent of the regulation is to provide stability and insure fair and equitable treatment for society free from discriminatory practices. In this regard the 2007-2009 global economic crisis reaction in the U.S. was the passage of the Dodd-Frank legislation. Ex post facto, there is much debate about the effectiveness of the resulting rule changes, regulation and creation of the CFPB. This study investigated the effectiveness of the specific rule changes regarding bank fees on depository accounts; which has an important social impact component.

The structure of the research presumed that banks that had a *high reliance* on fees on depository accounts divided by noninterest income and also relied on noninterest

income as a major component of net income would be negatively impacted by the rule changes and new regulation on such consumer depository service fees. The null hypothesis was that there would be no effect on banks with a high reliance on such fees as compared to those that had a more diverse source of noninterest income and net income. Ultimately, statistical analysis of research question one and two resulted in not being able to reject the null hypothesis. That is, there was not a statistically significant effect from the legislated intent.

Having a non-finding for research questions 1 and 2 is an important finding for the academic scholars, banks, regulators, and bank consultants. The intent of the Dodd-Frank legislation was to address the too-big-too-fail problem. Rather than solving the *too big to fail* issue, the theoretical framework for this study postulated that the Dodd-Frank legislation institutionalized it (Barth, Prabha, & Swagel, 2012 & Broughel & Peirce, 2013, p. 12). From 2007 through 2013 the number of banks declined by over 800 institutions; or fifteen percent (FDIC Statistics, 2015). Dodd-Frank has increased the regulatory burden, and sophistication of compliance, for banks of all sized which may create a competitive advantage for those with the economies of scale to more easily adapt. However, the results of this study do not support a predictive relationship between this *unintended consequence* of the Dodd-Frank legislation as causation to the declining number of banks or the declining financial performance of the banks. Research question 1 logistic regression and research question 2 linear regression analyses resulted in a finding of not being able to reject the null hypothesis. The reliance ratio has no statistically significant correlation to the bank failing or being acquired or as a predictor of declining financial performance.

The surprising result is best revealed in Figures 5, 6, and 7. The expectation that industry totals for service charges on depository accounts have declined since Dodd-Frank were confirmed. But contrary to the expectation that the decline in service charges on depository accounts would have reduced the *reliance ratio* percentage and reduced net income within the *very high* and *high reliance ratio* banks since the passage of Dodd-Frank, the descriptive statistics reveal significant increases in both metrics in 2012 as compared to 2005 and 2006. The *reliance ratio* percentage increased substantially. When analyzing banks with a *very high* (top 10%) and *high* (top 33%) *reliance ratio* the average net income, from 2005 to 2012 increased 174% for *very high reliance* banks and over ten-fold for *high reliance* banks.

In practice, banks utilized analytical software programs and methodologies to maximize NSF and overdraft income while providing service to consumers. CFPB rules forced banks to change these practices. Free checking products were the norm before Dodd-Frank. These free checking accounts were subsidized by NSF and overdraft programs. Today free checking accounts are the exception and the consumer must *earn* a free account by having certain minimum balances and use specific services that correlate to a profitable account for the bank. Rather than a minority of consumers paying a large amount of fees for NSF and overdraft services, the majority of consumers now pay a monthly checking account maintenance fee of $3 to $5.

Some banks have modified account agreements for consumers to *opt-in* so that the consumers waive their rights intended through Dodd-Frank and CFPB action. New products have been created in which consumers pay a higher monthly minimum fee to avoid being charged incremental NSF and overdraft fees. In essence, these products are a

type of *insurance* for when the consumer accidently overdraws their account. The fee for such an account is usually around $15 per month. Lawyers and consultants have worked to help banks replace, and in some cases more than replace, the targeted depository account fee income. These, Darwinian-type adaptations have offset, at least partially, the potentially negative financial consequences of Dodd-Frank and CFPB initiatives focused on consumer NSF and overdraft fees.

Overall since the passage of Dodd-Frank, the net income of the banks with the highest *reliance ratio* has increased and the percentage results of the *reliance ratio* have increased dramatically; as illustrated in Figures 5, 6, and 7. These results suggest that the banks have Darwinian-like adaptation to evolve their practices when confronted with new rules and regulation. The results of this correlation research study supports the NCLC (2013) recommendations that more data is needed in regards to how banks derive consumer fees. This research was limited by fees on depository services being reported in a single line on the quarterly FDIC call reports. The intent of the Dodd-Frank legislation was to improve the social condition, especially for lower income families and individuals. The reported figures for fees on depository accounts is the sum of NSF and overdraft events, monthly maintenance fees, and a number of other fees. The aggregation of these fees presents a challenge to analysis and validation of the intended effect. More detailed reporting by banks is needed.

Overall bank financial results illustrate a precipitous decline in fees on depository accounts of around $4 billion per year immediately following the passage of the Dodd-Frank legislation. By 2012, total industry deposits and net income had increased since the 2007-2009 economic crisis and passage of the Dodd-Frank legislation. Total

noninterest income is approaching the pre-Dodd-Frank legislation levels while fees on depository services remain lower as measured in total dollars. Total noninterest income would have also been affected by the Durbin Amendment (2010) which is estimated to have an annual cost of $4 billion on the U.S. banking industry.

The National Consumer Law Center (NCLC) said in 2013 that more information about fee practices is important for the regulation of small financial institutions. Many of the community sized banks have a closer relationship with consumers and are, likely, less likely to engage in abusive practices as compared to larger banks. But community banks may rely more on the collection of such fees and may resort to maximizing such fees which would harm consumers. With the encouragement of third-party vendors some community banks have adopted aggressive automated overdraft programs and actively promoted the ability of consumers to overdraw their accounts (NCLC, 2013, p. 2). Figures 2 and 4 suggest that this may be true. The banks with a *high* or *very high reliance ratio*, in 2005 and 2006, were very small in terms of total assets indicating that smaller banks relied more heavily on these types of fee income. By 2012, both the average asset size and net income of the *high* and *very high reliance ratio* banks increased substantially.

Regulation of such fees can have a more serious impact on the safety and soundness of community banks and regulators should identify if an over-reliance would be problematic to the banks overall safety and soundness (NCLC, 2013). More detailed reporting of these specific types of fees is required to measure the impact of these new products, programs, and impact of the Dodd-Frank and CFPB initiatives. Many banks

changed their practices, processes and products and more detailed reporting would facilitate analysis.

The Community Reinvestment Act examination audit of each bank results in a rating. This rating can effect a bank's ability to deviate from their approved strategic plan, make acquisitions, expand geographically, and build new branches. As part of this measurement and grade, two additional items could be considered in the evaluation of banks. First the percentage of bank customers that have opted-in may reflect the bank's attitude and focus on having consumers waive their rights given through Federal Reserve and Dodd-Frank initiatives. The banks with higher percentages may have program structures, training and incentives for new account opening and call center personnel that influence the consumer's choice. A consumer may elect to opt-in for many reasons, but doing so permits the bank to utilize methods specifically targeted by Dodd-Frank and CFPB directives which seek to limit possible bank abuses related to consumer fees. Secondly, a bank's reliance ratio, as discussed in this study, may be a measurement that regulators consider. A *very high* or *high reliance ratio* on consumer fees as a function of non-interest income and profit may have a negative social impact on consumers, especially the low-income and protected classes.

There may also have been a change in who collects the insufficient item fee from bank to merchant as banks may have begun returning more items unpaid. Fees on depository accounts have an important role in positive social change, especially for the lower income, retirees, and recipients of governmental support. The individual components of these fees are worthy of further research and to accomplish this, more detailed data is required.

Banks play an important role in the U.S. economy. The Dodd-Frank legislation contains the most significant changes in rules, compliance, and regulation since the Great Depression. Only half of the changes have been deployed and the compliance, regulatory, audit, and legal costs have increased. The numbers of banks in the industry have declined over 20%. New bank entrants averaged over 100 per year for decades and have been virtually zero per year since the 2010 passage of the legislation. Many banks are publicly traded and all must generate a profit for the benefit of their shareholders, to be a stable employer, and provided the availability of credit and depository services within their communities. Banks must provide a market-competitive return on equity in order to maintain and attract capital. Banks will fail, choose to be acquired, or adjust and evolve to environmental changes. The Darwinian-like evolution of new processes or products may have offset the intended effects of the rule changes regarding NSF and overdraft fees; which have an important social positive change component. Statistics show that total bank deposits have increased from 2005 to 2012, noninterest income is almost back to pre-2010 levels but fees on depository accounts remain around $4 billion short of the pre-Dodd-Frank legislation tally. More research is needed to assess the effects of these rule changes versus the adaptations of banks.

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