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A Case Study of Commercial Bank Solvency During a Global Financial Crisis

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A CASE STUDY OF COMMERCIAL BANK SOLVENCY DURING A GLOBAL FINANCIAL CRISIS

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Title: A Case Study of Commercial Bank Solvency During a Global Financial Crisis

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Probably one of the most salient problems of the recent past was the 2008 global financial crisis. This crisis, which began in mid-September 2008, was thought by some to have been caused by the U.S. sub-prime mortgage industry collapse. The credit freeze which followed precipitated a chain of events that affected most organizations in the United States. Because of the size and scope of this problem, the U.S. federal government intervened and offered funding to select institutions in an effort to restore business credit and consumer confidence.

Many institutions accepted this federal aid, but others did not. The focus of this study was an individual case of a rural commercial bank that did not accept Troubled Asset Relief Program (TARP) federal funding. This study examined Green Bank to determine if it is currently solvent according to federal standards. Green Bank is the fictitious name given to the real bank examined in this study. Comparison banks used in this study were also real and referred to as Bank A through Bank E.

In addition to current solvency, other aspects of the operation were studied to see if the solvency condition was likely to persist. As such, two recent dissertations on commercial banking were referenced to form the basis of this study. The first dissertation was published in 2008 and investigated the relationship between organizational resources and organizational response to external shock. The study was entitled *Organizational Response to Change: A Resource Based View from the Commercial Banking Industry*.

The second dissertation was published in 2006 and dealt with merger and acquisition activity of commercial banks. This study was entitled *The Timely Positioning of Banks for Acquisition and Mergers.*

Results from this study provide keen insight into how an organization, in this case a commercial bank, deals with external changes of the magnitude caused by the current financial crisis. Final results could also form the basis of a strategic plan for commercial banks should something like this financial crisis ever happen again. On December 31, 2011, the President and CEO of Green Bank retired to pursue other opportunities (CEO Retires, 2012).

ACKNOWLEDGEMENTS

This dissertation is dedicated to the memory of my parents who believed the pursuit of education was important not only for professional development but also for personal enrichment. I would also like to thank the bank executives who directly participated in this study. Their insight into the questions relating to their bank's operation was invaluable. Without their perspective, the study would have been based purely on quantitative data and therefore one-dimensional.

Additionally, I would like to extend a special thanks to those bank executives who participated in the pilot study. This dissertation is unique in that it contains concepts from other banking industry studies and their collective validity has never been determined. John Brooks, Mike Peduzzic, and Jeff Tompkins reviewed the research questions, survey questions, and study protocols to ensure that when the study was complete, the results would be meaningful. John Brooks also participated in the pilot study for the follow up interview with the Green Bank CEO. Also participating in this study was my high school English teacher Jack Ferrang. It was his review that ensured the results and conclusions of the study were well presented so that readers of all skill level could appreciate their significance.

Finally, I would like to thank my research committee who provided the guidance I needed throughout this process.

TABLE OF CONTENTS

Chapter Page

LIST OF TABLES

CHAPTER 1

STATEMENT OF THE PROBLEM

Background

In the second half of fiscal year 2008, a number of financial institutions failed or otherwise became insolvent. This problem became so severe that the United States government became involved and provided money to select financial institutions in order to minimize the effects of these insolvencies on the overall financial system. Financial aid to institutions was distributed in the form of Troubled Asset Relief Program (TARP) funding which was a program designed to shore up the credit markets and jump-start the economy. TARP stands for Troubled Asset Relief Program and was passed by Congress in 2008. Since that time the program has seen varying degrees of success. Only $386 billion of the original $700 billion was distributed to help the economy and the remaining $750 billion authorized was not touched (TARP Bailout, 2012). Additionally, the Treasury Department announced that TARP has earned a profit for the taxpayers now that three financial institutions repaid a total of $ 7.4 billion in borrowed funds. Although this is good news, it is important to examine the outcome of all financial aid programs not just TARP before overall success or failure can be determined (TARP Bank Programs, 2012).

Green Bank was chosen for this study because it did not receive TARP money. A more detailed explanation of why the bank did not accept this money was given later in the study. Although Green Bank did not accept TARP money, its stock price dropped significantly. This drop was due in part to large write-offs from real estate losses in the Southern United States. Stock prices also vary considerably by other market forces

including geo-political factors, as well as, general industry specific concerns. These factors were not necessarily part of this study, but influenced the variables within.

Some banks did not need TARP funding but took the money to strengthen their reserves. These banks are now subject to additional government oversight until the money is repaid. At the time of this study, Green Bank was still operating on its own capital and was not subject to the additional government oversight attached to TARP funding. Green Bank is the fictitious name given to a real bank examined in this study. The comparison banks were also real but given the fictitious names Bank A through Bank E.

During fiscal year 2009, the U.S. Congress authorized the Treasury Department to allocate $489 billion of taxpayer money to provide assistance to 728 institutions. Allocations were given to insurance companies, financial service companies, auto companies, mortgage providers, investment funds, public and private banks. Because this study focused on commercial banks, a short list of the financial institutions that received most money from the TARP program are as follows: AIG, $69.8 billion; Citigroup, $50 billion; Bank of America, $45 billion; and, PNC Financial Services; $7.6 billion (Bailout Recipients, 2009).

This crisis in the financial sector was caused primarily by the sub-prime housing market collapse. These mortgages were of the type where the initial interest rate would be low and after time, the rates would readjust according to the contractual agreement or other economic conditions. When this happened, many people could not meet their mortgage obligation and went into default. Aggressive buying of sub-prime mortgages by Fannie Mae and Freddie Mac, which are government-sponsored enterprises, enabled

the situation just described. Between 2004 and 2007, these two entities acquired a total of $1 trillion in sub-prime mortgages. By doing this, Fannie Mae and Freddie Mac stimulated the growth of sub-prime mortgages and substantially increased the cost of financial collapse (Calomiris and Wallison, 2008).

These sub prime mortgages, many of which were going into default, were bundled with other mortgages and bought by large banks on Wall Street. The practice of bundling and selling mortgages was started so that the original lender could redeem fees on the loan instead of having them paid by the lender over a period of the loan, which in some cases was 30 years. Banks that later bought these mortgage bundles used them as collateral to make short-term business loans. When it was discovered that approximately 6% of the sub-prime mortgages would go into default, the financial crisis began. Some of the institutions that purchased these toxic assets (bad mortgages) established an insurance policy known as financial derivatives to protect against downside losses. Derivative securities typically involve an agreement between two parties regarding an asset or cash flow that will be exchanged at an agreed upon price at a specified date in the future. As the value of the underlying asset changes, the value of the derivative changes. One of the most common types of derivatives is the mortgage-backed derivative, which was thought to be involved in the current financial crisis. Other types of derivatives that have been created are the foreign currency futures, interest rate derivatives, and credit derivatives. The current derivative market is estimated to be valued at $605 trillion (Financial Derivatives, 2010). Green Bank uses interest rate derivatives but these instruments are not designated as hedging instruments. These derivatives relate to

interest rate swaps that the bank enters into with customers to allow customers to convert variable rate loans to a fixed rate (Annual Report, 2009).

Following the Enron bankruptcy, institutions were required to adopt a new accounting rule known as "mark to market." This means that once a long-term contract is signed, income would be valued as the present value of future cash flows. With mortgages going into default, and future mortgage payments not forthcoming, present value of future cash flows was $0. Because the banking industry did not know where the distressed mortgages were in the bundles they owned, they had to consider the mortgage assets valued at $0. As a result of this, banks no longer had collateral with which to back business loans. When this occurred, the United States Treasury and the Federal Reserve Bank realized that the credit markets were frozen and government action was required.

The initial plan was for the Treasury Department, in conjunction with the Federal Reserve Bank, to purchase preferred stock from the banks affected by this credit freeze. This stock would provide the government with a 5% dividend and the banks with the cash reserves with which to make short-term business loans. This plan became the initial part of a government stimulus package, which would later be valued at approximately $800 billion. Although the large banks on Wall Street were primarily affected by this credit freeze, some smaller banks required TARP money as well.

For a bank to be considered for TARP money, it had to be in distress when evaluated by what became known as a stress test. The idea behind this test was to consider the worst possible scenario and then see if the banks had enough capital reserves to cover the losses. The key question on this test was, What if unemployment increases

to 10.3%, home prices drop 22%, and economic growth decreases to –3.3%? (Stress Test, 2010). If this perfect storm happens, what happens to the bank's balance sheet?

Results of this stress test showed how much money a bank needed to continue operations; money, which came from the taxpayers. If Congress authorizes additional funds, it may instill confidence in Wall Street. Even with all this, there are two things that treasury officials don't know for sure. If a bank fails the stress test, confidence may not be instilled and they don't know if the current amount of bailout money was sufficient ("Stress Test", 2010).

Statement of Problem

This study examined a rural commercial bank that has seemingly performed well during a global financial crisis. Through interviews and data collection from financial reports, the current financial condition of Green Bank and trends for its future performance has been determined. The problem that drives the need for this study is the global financial crisis brought on by the U.S. sub-prime mortgage collapse. As mentioned previously, many institutions required government assistance as a result of this crisis and others did not. This study focused on the financial health of Green Bank. Bank solvency can easily be determined by examining a number of financial ratios. Ratio analysis provides a snap shot of the bank at a particular moment and a more in-depth analysis is required to determine the performance trend for the bank as time passes.

In addition to financial ratios, there are a number of other analyses that were applied to reveal the trend of the bank's performance. A review of literature shows that such metrics as financial slack, mergers and acquisitions, technology expenditures, reputation, and composition of senior management are important to the performance of

and future success of a bank. Two current dissertations on commercial banking were used to provide a solid research background for this study. The first dissertation referenced was published in 2008 and investigates the relationship between organizational resources and organizational response to external shock. The study was entitled *Organizational Response to Change: A Resource Based View from the Commercial Banking Industry*. In this study, the external shock was the global financial crisis. Green Bank's organizational resources were studied to determine how well it performed during this crisis.

The second dissertation referenced was published in 2006 and deals with merger and acquisition activity of commercial banks. Analyzing this aspect of bank behavior also shed light on the possible future performance of the institution because mergers and acquisitions are so prevalent in the commercial banking industry. This study was entitled *The Timely Positioning of Banks for Acquisition and Mergers.*

Research Questions

Research questions for this study were based on what it takes to maintain solvency or financial health at a rural commercial bank. The questions researched are as follows:

1. How have bank solvency ratios changed following the global financial crisis of 2008?
2. How has the bank changed its solvency indicators following the crisis of 2008 as compared to the years 2003-2007?
3. How has the bank changed its financial slack profile in response to the exogenous shock initiated by the global financial crisis of 2008?

4. For what reasons will the bank seek a merger or acquisition following the global financial crisis of 2008?
5. How has the bank's tangible common equity ratio changed the likelihood of a merger or acquisition following the financial crisis of 2008?
6. How has the bank changed its technology expenditure portfolio following the financial crisis of 2008? (Not used as a result of the pilot study.)
7. How do customers view the reputation of the bank following the financial crisis of 2008?
8. How has the bank changed its board member mix to in order to maintain expected performance following the financial crisis of 2008?
9. How will the regulatory changes enacted by the federal government help the bank remain solvent going forward?
10. How has the common stock price for the bank changed following the financial crisis of 2008?

Definition of Terms

This study, like any other, uses a lot of terms that may not be used in everyday conversation. For this reason a list of these terms is provided.

Asset quality--measured by the ratio of non-performing assets to total assets. This measures the dollar volume of assets past due or in arrears after 90 days delinquency divided by the total assets outstanding (Spiegel, Gart, & Gart, 1996).

Charge-off ratio--measures the net charge-offs as a percentage of the average loans outstanding (Spiegel, Gart, & Gart, 1996).

Commercial bank--an organization that performs the activity of taking deposits and commercial lending (Saunders & Cornett, 2004).

Commodity Future Trading Commission (CFTC)--Created by Congress in 1974 with the mandate to regulate commodity futures and options markets in the United States (CFTC, 2010).

Community Development Financial Initiative--a new TARP program will invest lower-cost capital in Community Development Financial Institutions (CDFI) that lend to small businesses in the country's hardest hit communities (CDFI, 2010).

Convertible debt--sometimes referred to as convertible bonds are bonds that may be exchanged for another security of the issuing firm, for example common stock, at the discretion of the bond holders (Saunders & Cornette, 2004).

Credit derivative--otherwise known as credit forwards, credit risk options, and quality swaps. The credit forward is a forward agreement that hedges against an increase in default risk on a loan (Saunders & Cornett, 2004).

Derivatives--securities which are financial in nature and whose payoff is linked to another previously issued security (Saunders & Cornette, 2004).

Efficiency ratio--for banks is the non-interest expense divided by interest and non-interest revenues (Spiegel, Gart, & Gart, 1996).

Equity Multiplier (EM)--the dollar value of the assets funded with each dollar of equity capital (Saunders & Cornette, 2004).

Federal Housing Finance Agency (FHFA)--this agency regulates Fannie Mae and Freddie Mack and the 12 Federal Home Loan Banks. The reason for regulating these

agencies is to ensure safe and sound housing finance and affordable mortgages. Also to support a stable and liquid mortgage market (FHFA, 2010).

Federal Deposit Insurance Corporation (FDIC)--This Corporation insures deposits and promotes safe and sound banking practices for commercial banks (Saunders & Cornett, 2004).

FED--The United States Federal Reserve Bank. The Federal Reserve System consists of 12 Federal Reserve Banks located in major cities throughout the United States and a Board of Governors located in Washington D.C. This banking system sets monetary policy, provides supervision for member banks and issues new currency (Saunders & Cornett, 2004).

Federal Reserve Discount Rate--the interest rate on lender of last resort loans made by the Federal Reserve Bank to depository institutions (Saunders & Cornett, 2004).

Financial slack--the level and availability of financial resources, or financial strength of an organization. Slack may influence an organization's response to a shock from the external environment (Gallo, 2008).

Foreign Currency Futures--theses contracts were introduced by the International Monetary Market, a subsidiary of the Chicago Mercantile Exchange in response to the introduction of floating exchange rates between currencies of different countries following the Smithsonian Agreements of 1971 and 1973 (Saunders & Cornett, 2004).

Government Accountability Office (GAO)--an office that investigates the use of public funds and evaluates federal programs and activities (GAO, 2010).

Glass-Steagall Act--this act generally prohibited commercial banks from underwriting securities. The four exceptions to this are municipal general obligation

bonds, U.S. government bonds, private placements, and real estate loans (Saunders & Cornett, 2004).

Interest Rate Derivative--this derivative came about because of increase in the volatility of interest rates in the late 1970s. Financial institutions can be either users of derivative contracts for hedging or dealers that act as counterparties in trades with customers for a fee (Saunders & Cornett, 2004).

Internal Capital Generation Rate--equals return on equity (ROE) multiplied by the retention rate (Spiegel, Gart, & Gart, 1996).

Investment Banking--a bank that is involved with the activity of underwriting, issuing, and distributing securities (Saunders & Cornett, 2004).

Merger--acombination of two or more firms under the same ownership for the purpose of financial solvency and financial gain (Obiesie, 2006).

Mortgage Backed Derivative--this security is based on the underlying security specifically a mortgage (Saunders & Cornett, 2004).

Nationally Recognized Statistical Rating Organization (NRSRO)--this agency is a credit rating agency which issues credit ratings that the U.S. Securities and Exchange Commission permits other financial firms to use for certain regulatory purposes (NRSRO, 2010).

Office of the Comptroller of Currency (OCC)--This office was created to charter national banks, to oversee a nationwide system of banking institutions, and to ensure that banks are safe, sound, and meet the needs of their customers (Saunders & Cornett, 2004).

Perfect competition--a competitive environment where there is very little difference between the products and services offered between competitors in the industry (Samuelson & Marks, 2003).

Preferred stock--a hybrid security that has characteristics of both a bond and a common stock. Preferred stock is similar to common stock in that it represents an ownership interest in the issuing firm, but like a bond it pays a fixed periodic dividend. Preferred stock is senior to common stock but junior to bonds (Saunders & Cornett, 2004).

Return on assets--is the ratio of earnings after taxes to average total assets. This reflects the profitably of a company's underlying business mix, as well as the effective deployment of assets (Spiegel, Gart, & Gart, 1996).

Return on equity--is the ratio of earnings after taxes to total equity. This ratio can be calculated by multiplying the ROA times the leverage multiplier (assets divided by equity) (Spiegel, Gart, & Gart, 1996).

Tangible common equity ratio--is the tangible common equity divided by assets. This ratio is an indicator of how well capitalized a bank is and of an institution's strength and ability to withstand severe credit-quality problems that require huge write-offs (Spiegel, Gart, & Gart, 1996).

TARP Funding--this stands for Troubled Asset Relief Program. This is the money given to banks to ensure they remain solvent and can continue with operations. The money is provided by the federal government and must be paid back with interest (TARP, 2010).

Temporary Liquidity Guarantee Program--includes the debt guarantee program and the transaction account guarantee program. The Debt Guarantee Program is administered by the FDIC and guarantees payment of any unpaid principal and contract interest accrued to the date of failure or bankruptcy incurred by a participating depository institution. The second part of the Temporary Liquidity Guarantee Program, the Transaction Account Guarantee Program, insures a participating depositor's funds in a non-interesting bearing transaction account (TLGP, 2010).

Tobin's Q--a metric that assesses the value of management by measuring (market value of equity + book value of assets – book value of equity)/book value of assets (Frick & Bermig, 2009).

Total assets--in banking, total assets are the combination of four major kinds of assets: cash in the vault and deposits held in other depository institutions, government and private interest-bearing securities purchased in the open market, loans and lease financing made available to customers, and miscellaneous assets (Rose, 2002).

Total equity--total equity for a bank is the sum of common stock, preferred stock, capital surplus, retained earnings, and treasury stock (Rose, 2002).

Treasury stock--the amount of common stock the bank purchases and holds in reserve. This is the bank's own stock which has been retired (Rose, 2002).

Securities and Exchange Commission (SEC)--this government agency was formed to protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation (Saunders & Cornett, 2004).

Significance of the Study

The recent financial crisis of 2008 is not the first in United States history. The stock market crash of 1929 caused a rash of commercial bank failures as well. Although the causes for the bank failures during the Great Depression differ from the failures of the current crisis, a lot could be learned from the current crisis. When this case study is complete, a better understanding of how Green Bank conducts business and remained solvent during a significant financial crisis will be better known.

Commercial banks were hard-hit in the stock market crash of 1929 and the Great Depression that followed. These banks typically loaned money to enterprises that produced goods and services and during the years between 1921 and 1929, also became active with financial market speculators. They would provide loans to the stock market speculators and become involved in stock market speculation themselves. This was done in the form of purchasing high-yield bonds that were of doubtful quality.

In the spring of 1928, the Federal Reserve expressed concern over speculation in the stock market and raised interest rates to curb the expansion of credit (Griffin, 2002). In fact, the increase in prices for the stock market were based entirely on speculation because buyers did not care at what price they were paying for stocks. Speculators acquired stock merely to hold for a while and then sell for a profit. This was called the "Greater-Fool" strategy. No matter how high the price is today, it will be higher tomorrow. To make this strategy even more dangerous, speculators would purchase stocks on margin. This means that the buyer puts up a small amount of money as a deposit (the margin) and borrows the rest from a stockbroker-who gets it from a bank-

which in turn gets it from the Federal Reserve Bank (FED). During the 1920s, this margin rate was low and was around 10% (Griffin, 2002).

When the interest rates were raised, the growth of the money supply and stock market prices began to slow. Then in the second half of 1928, the Federal Reserve reversed its policies and the stock market once again began to advance. After observing this result, the monetary scientists told the financial fraternity to get their holdings out of the stock market because this trend could not last forever.

On February 6, 1929, the Federal Reserve issued an advisory to its member banks to liquidate their holdings in the stock market (Griffin, 2002). In August of the same year, The Federal Reserve raised its discount rates to 6% (Griffin, 2002). Within days, the Bank of England also raised its rates, which had the effect of contracting the money supply for both England and the United States. The stock market reached its high on September 19, 1929 and then began to slide (Griffin, 2002).

The stock market crash occurred on Tuesday October 29, 1929. For most of that day there were sellers and no buyers. Within a few weeks $3 billion in wealth had vanished from the stock market and the Wall Street rich had become the Wall Street poor. Many of the commercial banks that participated in the Wall Street speculation were wiped out in the crash as well. This time period was also know for runs on banks by depositors.

During the nine years before the crash of 1929, the Federal Reserve was responsible for a massive expansion of the money supply. In the long run, the result of plentiful money and easy credit caused a wave of speculation in the stock market and real estate markets (Griffin, 2002). Lax regulations over the money supply drove the stock

market bubble, which burst in 1929 and thus started the Great depression. From this example, it can be seen that the causes of the commercial banking crisis in 1929 were slightly different from those in 2008.

The theoretical position of this study is that commercial banks achieve and maintain solvency because they are able to leverage financial slack, reputation, timely mergers and effective management to achieve critical financial ratios that are considered sufficient for government solvency standards. Once complete, the results of this study may lead to a solution for proper management of a commercial bank to minimize the possibility of insolvency and subsequent failure in the future.

Methods to Conduct the Study

This study analyzed Green Bank, which was selected because it seemingly remained in good financial condition during the current financial crisis and did not accept TARP funding. A pilot study was conducted to validate the interview questions because there was no survey or other instrument available to examine the research questions as they were being posed. The interview questions were piloted using three individuals who are commercial banking executives. Input from these experts determined whether the research questions were appropriate for this study.

The fact that Green Bank did not accept TARP money was only an initial indication of financial solvency, more data were collected to verify that theory. The government required a number of institutions to accept TARP money even though they did not need it so that there was no clear indicator of which banks were sound and which ones were not. Regulators did not want to induce runs on banks that accepted TARP funds since those bank's customers would think those banks were in financial trouble and

perception may have become reality. Some banks accepted TARP because it was cheap money and would be good for their balance sheet. Some of the banks that accepted TARP money have already returned it with interest. Once the TARP money was returned, the government could no longer exercise the control it did when the banks were still indebted to the TARP program.

In addition to the TARP indicator, financial ratios were used to further assess the health of the Green Bank. Financial ratios for banks usually fall within a certain range. Since 2008 was not a normal year by any stretch of the imagination, past performance was considered to serve as comparison. The time frame between 2003 and 2007 was used because that period was relatively crisis free and could produce typical values for financial ratios. These years represent the segment between the events of September 11th and the recent financial crisis. Financial ratios in that time span served as a more representative indication of the bank's performance. Finally, in addition to financial ratios and other quantitative data, the CEO and the Operations Vice President were interviewed. Answers to the survey questions further enhanced the results found from the quantitative data. Questions posed to bank executives were open ended and in essay format.

Rationale for a Case Study Design

This study nicely fits the confines of a case study. The primary focus of the study was the success of one bank by virtue of the fact that it did not take funding from the federal government in order to remain solvent. Although other banks did not take stimulus money, Green Bank was studied to see if its condition of solvency can be

sustained. The study was bounded, and since there is only one subject for study, it was in-depth.

Limitations of the Study

This study was limited due to the fact that only one bank was studied in depth and this allowed a thorough analysis to be performed on the bank. Green Bank is in a rural geographic area and the results obtained in this study may not apply to the commercial banking industry as a whole. For instance, other geographic areas and different types of customers may limit the scope of these results. This study was also conducted following a shock to the financial system which means it is no longer business as usual for banks. Operation policies, government oversight, bank management as well as their employee's mindset have changed. Therefore, the results obtained from this study may not be applicable for comparison with earlier times.

Additionally, the timing of this study is unique. Fiscal year 2008 was a remarkable time for all businesses not just banks. Data collected during this timeframe may not be representative of previous or future performance of commercial banks. The results reflected the performance of organizations in crisis and could prove to be very useful in adding to the body of literature, which deals with the success of banking organizations. Finally, because Green Bank retained its FDIC insurance throughout this crises, investors and depositors could expect a reasonable degree of security with the bank even if it fell on hard times. For this reason, the behavior of depositors and investors may be skewed slightly, which would bias the results of this study in the positive direction.

CHAPTER 2

REVIEW OF LITERATURE

Because this study focused on a single bank, it is important to understand some banking concepts and the banking sector as a whole as well as how the financial crisis affected this organization. Green Bank was chosen for this study because it did not receive TARP money. Some banks did not need TARP funding but took the money to strengthen their reserves. These banks are now subject to additional government oversight until the money is repaid. At the time of this study, Green Bank was still operating on its own capital and is not subject to the additional government oversight attached to TARP funding.

The bank which is now known as Green Bank, started as Du Bois Deposit National Bank in 1880 (Bank History, 2010). Through a series of mergers and acquisitions, Du Bois Deposit National Bank became known as Green Bank in 1995 and is now owned by a financial holding company. Green Bank provides commercial banking and consumer services to individuals as well as small to mid-sized businesses. Some of the services available through Green Bank are personal checking, interest bearing checking accounts, savings accounts, health savings accounts, insured money market accounts, debit cards, investment certificates, fixed and variable rate certificates of deposit, and IRA accounts.

Currently, the overall economic environment that Green Bank operates in is anything but usual. Since 2008, many central banks such as the FED (The Federal Reserve Bank), the Bank of England, and other European central banks were keeping their interest rates low so commercial banks, like Green Bank, could borrow money from

these central banks and use that money to maintain their liquidity and hence their ability to make loans. The central banks' interest rates are near 0% and the FED has pledged to keep this interest rate at 0.25% until 2014 (Fed Sees Low Rates, 2012). At this time, the central banks believe they cannot lower interest rates any further.

Even though central banks have provided billions in funding for the financial markets, one economist thinks that is the wrong approach. Economist John Mason believes the current problem is one of solvency and not liquidity (Mason, 2009). Mason also believes that commercial banks will react differently to a solvency problem than it would be to a liquidity issue. From the start of the crisis, the financial regulators saw the problem as one of liquidity, which is what the TARP package was designed for. The government would buy assets of banks that could not be adequately priced and sold.

The standard central bank solution to a liquidity crisis is to lend banks money at low interest rates, which is what the central banks are doing now. Liquidity crises are usually over in weeks if not days and usually have a short cycle and recovery time. This type of crisis is typically resolved without relying on government support that acts as substitute buyers that have left the market. On the other hand, a solvency problem is an entirely different matter. In this case, borrowers have problems repaying loans and as a result, the solvency of the lending institution is brought into question. The solvency problem tends to be more long-term than the previously described liquidity issue (Mason, 2009).

Solvency problems take longer to resolve because first, the troubled borrowers must be identified. Once this is done the lending institution will work with the borrower to see if the loan can be salvaged. Following that, it still takes time to see if the borrower

can meet the terms of the new, restructured agreement. This is exactly what is going on with the distressed mortgages that were purchased by large banks. Banks holding these mortgages will now have to try to restructure the loans to prevent default.

To complicate matters, if the economy as a whole continues to decline, and people continue to lose their jobs, the banks may face a steady wave of distressed loans. It is for this reason that commercial bank solvency is a long-term affair. Some banks fail right away but the majority of banks face an extended period, possibly one or two years before the solvency issue is brought under control.

Currently, commercial banks are not lending which is common behavior in markets with low demand and tight restrictions from governing bodies as well as solvency concerns. Historically, bankers have always held onto funds and stopped lending when there is a solvency crisis (Mason, 2009). In November of 2009, default rates, foreclosures, and personal bankruptcy were on the rise in the United States and banks were reluctant to invest in an economy under those conditions. As of November 2011, there was still no incentive for banks to lend money, even for companies with strong financials (Semuels, 2011). That same month, November 2011, foreclosure rates were on the rise and reached 7.7% for all mortgages in the country (Foreclosure Rates, 2011). This represents a business environment that banks are not willing to lend in.

Although the problem of determining whether customers will survive long enough to repay their loans may seem like a daunting task, the banks have a tool for this. It is called the Altman Z Test. This test was designed to determine whether a publicly traded manufacturing company might fall into bankruptcy. The test uses data from a firm's balance sheet and has been found to be very accurate. There are other tests for other

types of borrowers, even individuals. Commercial banks will most likely use tools like this to navigate through the next few years. More details on the Altman Z Test can be found in Appendix B.

In 2011, three years after the financial crisis began, central banks are still treating the crisis as one of liquidity and not one of solvency. In December of 2011, John Mason cited how the central banks acted in concert to provide money to Europe and the United States; this is a liquidity action (Mason, 2011). Central banks are ensuring the flow of money to financial institutions just as they did following the Lehman Brothers collapse in 2008. The fundamental problem in world financial markets today is still one of solvency (Mason, 2011).

Causes of the Financial Collapse

Earlier in this study, some of the causes of the current financial crisis were discussed. Just after the beginning of the crisis of 2008, financial experts believed it was caused by the sub-prime mortgage collapse and risky derivative contracts between banks. Upon further consideration, these two explanations did not make sense. Bankers have long dealt with risky assets such as sub-prime mortgages and derivative contracts. They are trained to assess and deal with risk, so what really happened? Some financial analysts are now calling the current financial crisis a Black Swan Event. A Black Swan Event is an event or occurrence that deviates beyond what is normally expected of a situation and is extremely difficult to predict (Black Swan Events, 2011). Predictions of these types of events are difficult because they exist in the "12-sigma" range of the bell curve, or 12 standard deviations from the median (Taleb, 2010). Previous Black Swan Events include World War I, the September 11th attacks, and the rise of the Internet and the personal

computer (Black Swan Events, 2011). Warning signs for this current financial crisis were missed for a variety of reasons. First, government officials promoted blindness to these 12-sigma tail risks by putting flawed analysis tools in the hands of policy makers. Second, financial professionals had incentive to hide these tail risks as a way to collect bonuses. Third, business schools kept teaching inadequate risk management methods to their students. Lastly, economic establishments kept pushing the warning signs under the rug or even hiding their responses to these warnings (Taleb, 2010). As a result, the unexpected financial crisis of 2008 occurred and produced devastating effects to the U.S. economy. Green Bank, the subject of this study, was able to avert insolvency during this financial crisis.

Commercial Bank Solvency

Based on the information contained in the previous paragraphs, it is reasonable to assume that the financial crisis currently experienced by U.S. commercial banks was one of solvency. Commercial banks operate by attracting depositors who place various amounts of money in a bank for a predetermined interest rate. The bank advertises a rate that will attract the greatest amount of deposits and once the money is on deposit, the bank then advertises a loan rate based on the risk of that money in the economic environment (Mason, 2009).

Solvency is often referred to as solvency risk (Rose, 2002) and is what banks consider long-term viability. If a bank takes on bad loans or its security portfolio declines in value, then its capital accounts, which are designed to absorb these losses, become stressed. If investors or depositors become aware of this problem, they may withdraw their funds and the bank will become insolvent and close its doors. At times,

these bad loans can take several years to clear the system. This situation just described is exactly what is happening in the current financial crisis. A lot of bad loans were in the portfolio of banks in the form of bad mortgages and in fact, Green Bank experienced significant real-estate losses in May of 2009. To complicate matters, the collateral held by these banks declined in value as well. The global recession is causing property values to decline in value and could be a double edge sword for the banks. High unemployment rates leave people with less money to deposit in banks, pay their mortgage, and invest in bank stocks, which in turn could lead to bank insolvency.

Prices and yield on bank stocks and on large uninsured deposits can serve as an early warning sign of a bank headed toward insolvency (Rose, 2002). It is for this reason that bank solvency can be forecasted using the following metrics. First, the interest rate spread between market yield on bank debt issues such as CDs and the market yield on government securities of the same maturity (Rose, 2002). When the margin between these two rates widens, the market is concerned about the risk of loss from purchasing these securities.

Second, the ratio of a bank's stock price to its annual earnings per share (Rose, 2002). If investors believe a bank is undercapitalized for the risk it has accepted, this ratio will fall. Third, the ratio of equity capital (net worth) to total assets held by the bank (Rose, 2002). This ratio reflects how well a bank capital covers potential losses from assets likely to decline in value. If this ratio declines, it may indicate risk to shareholders and debt holders. Fourth, the ratio of purchased funds to total liabilities (Rose, 2002) was examined. Purchased funds could include short term uninsured deposits from other

banks, corporations, and government entities. If a bank is selling purchased funds it holds, this may be an indication it is raising cash to cover losses.

Organizational Theory

Banks are organizations and as such are subject to the same forces as any other organization. Banks have employees, management teams, competitors, and finances realities. Much literature is available on organizational theory and for this study it was helpful to know what makes organizations successful because this information was used to determine what makes banks successful.

The origins of organization theory come from military applications. The first definition of an organization comes from the way the Prussian king Frederick the Great defined his invention of the modern army. "An army has three parts: infantry walks, cavalry rides, and artillery being pulled" (Hesselbein, Goldsmith, & Beckhard, 1997, p.4). Although this statement was made in the mid-18th century, it can be applied to organizations today. Simply stated, organizations define how different work should be accomplished.

In modern terms organizations are seen as institutions that deliver results externally; serving and performing in the market. Organizations are more than economic entities; they are above all social in nature. Its purpose must therefore be to make the strengths of people effective and their weaknesses irrelevant (Hesselbein, Goldsmith, & Beckhard, 1997).

Since the 1860s, organizations were based on ownership (Hesselbein, Goldsmith, & Beckhard, 1997). Independent suppliers and distributors existed outside the organization. The company itself was based on command and control and was anchored

in ownership. This style of organization was meant to be permanent. This paradigm does not exist today. Changes in global systems and the way business is conducted have enabled changes in the organizations of today. Many of the old techniques will have to be unlearned by managers and leaders and replaced by strategies that will work in the current environment.

The previous concepts form the foundation of organizational theory and it is now time to examine organizational theory as it relates to commercial banks. The transformation of organizations caused by changes in technology and changes in regulation is a familiar topic in management literature. This idea that organizational change may be caused by technological and regulatory change was put forth by Schumpeter's (1950) idea that economic structures in capitalists societies transform themselves by a process of "creative destruction." Changes in the external environment have often been accompanied by transformations within organizations (Meyer, Brooks, & Goes, 1990).

To further develop this idea, Contingency Theory proposes that it is the role of managers to monitor the external environment and make subsequent changes to their organizations so they can remain viable (Child, 1972). The cognitive bias of managers and their tendency to maintain the status quo (Chandler, 1962; Kiesler & Sproull, 1982; March & Simon, 1958; Tushman & Romanelli, 1985) are seen as factors that impede the ability of organizations to change when it is necessary. Research also shows that management teams with long tenure are less likely to make radical changes (Tushman & Romanelli, 1985; Wiersema & Bantel, 1992).

A closer look at organizational theory relating to the commercial banking industry can be found in a research paper written in 2011 that addressed market structure and risk taking for commercial banks. When a commercial bank expands lending operations into more markets, this serves to diversify risk across geographic regions. If the loans are not perfectly correlated, diversification of this kind makes banks safer because they are less exposed to shocks that hit individual areas (Demsetz & Strahan, 1997; Diamond, 1984; Morgan, Rime, & Strahan, 2004). Additionally, market structure and risk taking (Boyd & de Nicolo, 2005; Martinez-Miera & Repullo, 2010), and organizational structure on firm behavior Stein (2002) and Acharya (2011), suggest changes in risk taking based on diversification. Furthermore, the relationship between organizational structure and bank risk taking depends on market characteristics such as borrowers' ability to provide collateral (Goetz, 2011). The results of the Goetz study showed that banks that expand across state lines have a lower probability of failure than banks that do not (Goetz, 2011).

The Characteristics of Healthy Organizations

For some time now, important work has been accomplished through organizations and institutions. Organizations can be thought of as bridges between people and issues and as a result, organizations have personalities just like people do. Leaders of organizations are continuously looking for ways to improve their performance. For instance, learning organizations have been a topic of interest in the last few years. Managers and leaders see learning organizations as a way to improve their performance. Organizations can no longer operate in relative isolation as they did in the past, they are now part of an international community.

Studies of healthy organizations have revealed a certain pattern, or a group of characteristics common to all. A healthy organization defines itself as a system (Hesselbein, Goldsmith, & Beckhard, 1997). In performing its work, the healthy organization must transform its needs and convert them into goods and services. A strong sensing system is also important for accomplish this. The sensing system would receive current information on all parts of the organization and interpret their interaction. This process is referred to as systems dynamics thinking (Hesselbein, Goldsmith, & Beckhard, 1997). In the case of Green Bank, it retained a consulting firm to administer a questionnaire to employees in an effort to see how they view the company. In addition to the sensing system, mission statements and vision statements have also been found to be important because they gives the organization a strong sense of purpose. Mission statements and vision statements can be referred to from time to time to keep the organization focused and on track. Mission and vision statements can also be used to mold new employees in the culture of the organization. For Green Bank, ethics training for new employees is a large part of their indoctrination.

In borrowing an idea from the architectural sciences, organizations should adopt a "form follows function" (Hesselbein, Goldsmith, & Beckhard, 1997, p.327) mentality. The work that must be done must fit with the framework are resources available to the organization. A variety of structures could be used to accomplish this goal. Some common structures used for this purpose are: a formal pyramid structure; horizontal structures and teams; and, project management schemes. Successful organizations have also been found to employ team management. The management team is composed of an executive team at the top with teams managing groups and functions throughout the

organization. This structure is in contrast to the traditional management from the top schemes used for many years.

Focusing on customer service is also important. This includes external as well as internal customers. Organizations compete for customers on a daily basis. Because there are very few monopolies anymore, if one organization does not meet customer needs the customers can go elsewhere. Green Bank identified two competitors in their geographic are that they must be concerned with. Internal customers, who are often overlooked, are important as well. Internal customers refer to different groups within an organization. How efficiently can one internal group get information or goods to another internal group? The ability to do this directly affects the product or service made available to the external customer.

Information technology is becoming increasingly important in business today. This principle applies to all organizations. Successful organizations effectively use information technology to give themselves a competitive advantage over their competitors. Information can be shared across geographic locations and functional levels with the use of the Internet or other organization specific networks. In addition to information technology, open communications and allowing decisions to be made at the lowest level possible also provide an advantage. Information technology was initially considered for examination in this study but was omitted following results from the pilot study.

Finally, successful organizations should focus on efficient work, quality and safety awareness and manage for a better future. Efficient processes have long been a key to success for organizations. Quality and safety are becoming more important each

year and organizations that focus on efficiency, quality, and safety will take a leadership role among their industry peers.

Organizational Change

Because this study focused on a commercial bank that is dealing with external changes, it is important to understand the concepts of organizational change. Literature on organizational change identifies three types of change that organizations deal with. The first is evolutionary change, which means change that occurs in small successive steps that do not disturb the state of the system but over time can cause significant change Quinn (1978). Second is revolutionary change, which is defined as disruptive to the state of the current system and causes transformations to the organization or industry (Schumpeter, 950). Lastly, a combination of these two ideas has been examined recently (Brown & Eisenhardt, 1997; D'Aveni, 1994). Looking at these definitions of change, the global financial crisis was viewed as one of revolutionary change because of the speed with which it hit the global markets.

Drivers of Organizational Change

Penrose (1959) pioneered the concept of internal resources as the driver of organizational growth and change. This idea states that organizations develop an excess of resources as their business processes become more efficient. These excess resources are then used to grow the organization or create change. Excess resources can be and are often considered an organization's core competency. With top management being seen as influencing organizational change, there is an interest in studying top management and their tenure and turn over as it relates to organizational change. This collection of work suggests that executive turnover is instrumental in changing the tone of an organization

and therefore facilitating change (Goodstein & Boeker, 1991; Hambrick & Mason, 1984; Pfeffer & Salancik, 1978; Tushman & Romanelli, 1985). When new top managers become part of the organization, new knowledge, information and skills sets are acquired. When this happens, old organizational habits and routines as well as values are replaced with those of the new managers as they seek to create their own environments. If these managers were the right choice, they will have the skill set necessary to succeed and this phenomenon has been referred to as leadership. There is a consensus that good leadership is required for organizational success. Sliwka (2007) provides the example of BMW as an example of strategic change occurring following the replacement of the company CEO in 1999.

To further illustrate his example, Goodstein and Boeker (1991) found evidence to suggest that hospitals that have hired new CEOs experience a higher rate of organizational change. Miller (1991) found similar results from a longitudinal study of large U.S. firms. Miller's study suggests that installing a new CEO for an organization greatly increases the chances for organizational change.

In keeping with the idea of influence exerted by top management teams, Hambrick and Mason (1984) suggest that top management teams developed within the organization are more homogeneous and limited than those that were assembled from outside the organization. Executives from the outside tend to be more diverse in ideas and bring different ideas to the organization and are more willing to initiate change. Further support to this idea is proposed by Tushman and Romanelli (1985) where they found that reorganizations are more likely when existing company executives are replaced with new ones, especially if they are from outside the organization.

The effect of organizational change can also be extended to the board of director's level. There is evidence that boards that are smaller Goodstein, Gautuam, and Boeker (1994), younger, have shorter average tenure Katz (1982), and are more heterogeneous (Eisenhardt & Bourgeois, 1988; Pfeffer, 1983), have a greater tendency to initiate change in their own organizations Golden and Zajac (2004) and (Shleifer and Vishny, 1997). Additional research on board size and composition sought to find the optimal board size and structure that would produce the best economic results. It was thought that optimal board structure would reduce agency costs due to separation of ownership and control (Shleifer & Vishny, 1997).

Prior studies on group decision-making have shown that larger groups generally have a more difficult time making a decision. As a result of this, the final decision of a large group of people usually involves more compromises and tend to be less extreme than with smaller groups (Kogan & Wallach, 1966; Moscovici & Zavalloni, 1969). Studies by Yermack (1996) and Eisenberg, Sungren, and Wells (1998) show that smaller boards are more effective due to lower coordination costs which produces better firm performance.

In contrast to these results, Dalton, Daily, Johnson, and Ellstrand (1999) and Coles, Daniel, and Naveen (2008) stare that larger boards may be better for firms with greater advisory requirements. Along with this, Raheja (2005) argues, "optimal board size and composition are functions of the directors and the firms characteristics." Finally, Hermalin and Weisbach (2003) show in a review of literature that no significant relationship between accounting measures of performance or firms' valuation was

measured by Tobin's Q. Coles, et al. (2008) also found no stringent impact on firms' valuation.

When dealing with turnover at banks, the process differs from other organizations. Unlike other organizations, if regulators discover inept or ineffectual management at a bank, that may lead to the dismissal of those managers (Palvia, 2010). Several studies have implied that regulatory oversight drives management change in banks (Houston & James, 1993; Prowse, 1995; Webb, 2008). Extra regulatory oversight could result from a downgrade in the banks ratings and this sometimes leads to management turnover (Palvia, 2010).

Turnover is also accompanied by mergers and acquisitions. In this case the combined entity has redundant managers and some of them can be downsized. Green Bank lists mergers and acquisitions as one of their core competencies. Newer banks can have above normal turnover because of inexperienced management. The danger zone for this type of turnover is a manager with less than five years experience (Palvia, 2010). Finally, turnover could just be related to retirements or a better job somewhere else (Palvia, 2010).

When turnover is due to poor performance, the most often indicator used is Return on Assets or ROA. This is a financial ratio that is tracked and trended by banks. "Poor performance" turnover of bank executives is strongly associated with low ROA numbers (Palvia, 2010). ROA is such a good indicator that past numbers are a good indication of future success (Palvia, 2010).

Organizations as well as people usually have a resistance to change. From an organizational standpoint this can be understood from Resource Dependency Theory.

Resource Dependency Theory argues that power builds in areas of organizations that control highly valued resources (Gallo, 2008). As power in a particular area increases, the longevity of the managers in those areas grows as well. As a result, managers in those areas will be reluctant to initiate change and possibly jeopardize their positions, status, and tenure. Decisions by these managers tend to become one of self- interest rather what is best for the organization. This organizational inflexibility can be fixed with management succession.

Organizational inertia will eventually be confronted by change from outside the organization. Institutional Theory states that organizations will change under pressures from the environment Scott (1987). Institutionalization happens over time when repeated actions develop a shared view of reality Berger and Luckman (1967). This deep structure that becomes imbedded over time determines how an organization will change when change is necessary Heracleous and Barrett (2001).

Changes from the Macro-Environment that Affect Organizations

It should come as no surprise that technology and regulatory changes greatly affect organizations. Technology from new innovations renders existing products and processes obsolete Schumpeter (1950). The shock of innovation causes organizations to adjust their strategies, structures, and processes. Some researchers have successfully shown that when technology changes, incumbent organizations decline in performance (Cooper & Schendel, 1976; Henderson & Clark, 1990; Tripsas & Gavetti, 2000; Utterback, 1994). In summary, technological advances cause organizations to change in order to develop new competencies and remain competitive in the future (Gallo, 2008).

In addition to technology, regulatory changes have an affect on organizations. Regulations for the most part come from outside the organization. Regulation often defines the rules of competition and enacting legislation for the purpose of changing the dynamics of competition, either by limitation or expansion Vietor (1989). Airlines, banks, and public utilities are often subject to regulation by governing bodies because of the nature of their respective industries. When it comes to banking regulation, the intent is to provide a mechanism for supervision and controlling risk-taking by individual banks (Gallo, 2008). Regulatory shock or changes does affect how organizations and industries change. Understanding the affect of regulation on the behavior of organizations can only be accomplished by looking at how they respond to regulatory change (Vietor, 1989).

Exogenous Shock

Exogenous shock is defined as an event in the external environment that causes a shift in the competitive environment from a state of stability to one of turmoil and uncertainty. Schumpeter (1950) describes this as a process of "creative destruction," where organizations realign their resources, systems, and structures in order to succeed in the changing competitive environment. These "Schumpeterian Shifts" (Barney, 1986, p. 107) are a result of what Schumpeter (1950) refers to as five "exceptional circumstances" that constitutes a framework for relating capitalism to economic performance. These include government action, the price of gold, increases in population, land expansion (globalization), and technological progress. They are termed exogenous because they occur outside of the organization, yet when mobilized they act to destroy old economic structures and create new ones Schumpeter (1950). For the purposes of this study, government action, the price of gold, and technological progress will be of more concern

to the banking industry than globalization and increases in population. When a shift occurs in one or more of five previously mentioned circumstances it acts as an exogenous shock on the competitive environment and may transform the competitive environment of the industry (Tushman & Romanelli, 1985).

In the past decade, the savings and loan industry tried a variety of solutions as they dealt with regulatory changes. Institutions in this industry made deep-seated changes in their organizations in order to take advantage of opportunities presented by the new environment (Zajac, Kraatz, & Bresser, 2000). But because the savings and loan institutions tried to apply old ideas to a new environment, many of them failed in the 1990s.

Organizational Resources

Slack Financial Resources

The financial strength of an organization may influence how it responds to exogenous shock. In this study, financial strength was discussed in terms of financial slack (Gallo, 2008). The literature indicates that financial slack may help or hinder an organization. Tan and Peng (2003) maintain that organizational theory perceives financial slack as positive while agency theory views financial slack as negative in terms of its impact on organizational performance.

The literature on financial slack makes the argument that considers slack resources as facilitators of new strategies and innovations (Cyert & March, 1963; Nohria & Gulati, 1996). Cyert and March (1963) believe that slack gives organizations the ability to investigate new strategies and engage in innovative activities. In a like manner,

Bourgeois (1981) and Hambrick and Snow (1977) argue that organizations with slack resources are more willing to pursue new products and enter new markets.

In an environment influences by change, Moses (1992) finds that slack financial resources enhance an organizations willingness to experiment with new products. The rationale in play here is that organizations with slack financial resources are more able to absorb the risks of uncertain activities.

In addition, organizations with financial strength are likely to grow through diversification (Montgomery & Hariharan, 1991) and direct entry into new markets Chatterjee (1990). These organizations have the capability to take advantage of growth opportunities because the financial resources are available to do so. Financial slack also allows for the absorption of risk that may develop from changes in the external environment (Meyer, 1982).

Slack financial resources have also been used to respond to jolts from the external environment. This phenomenon has been seen in Meyer's (1982) hospital study in which it was found that organizations were able to continue with their strategic plans even with an external jolt because they had slack financial resources. With a small margin in financial resources, organizations may not have the financial strength to take an aggressive position, as would one with significant financial slack. Organizations with that financial slack would enjoy a cushion that would protect them against the risk of aggressive behavior.

Cheng and Kesner (1997) show support for slack being positively related to response to external shifts however too much slack was not found to be positive. The studies by Meyer (1982) and Cheng and Kesner (1997) indicate that organizations with

financial strength have the ability to respond in a positive and aggressive manner to external change. In the face of radical technological change, Hill and Rothaermel (2003) propose that incumbent firms with financial slack will perform better and respond more aggressively to change. In addition to these studies, Reuer and Leiblein (2000) found that slack is negatively related to down side risk of bankruptcy. Simply stated, firms with financial slack were less likely to experience bankruptcy.

The case for financial slack being an asset to an organization was presented in the previous paragraphs. The literature also contains examples of how financial slack can be detrimental. Some organizational theorists believe that organizations with financial slack will respond negatively to external shock. This prediction is found in the organizational economics theory of principal-agent relationships Jensen and Meckling (1976), and the notion that slack will be used to further the interest of upper management Williamson (1975).

The principal-agent argument maintains that management works for the benefit of the ownership interests. This may be a private owner or shareholders in a corporation. This being the case, the management would not act to put the financial strength of the company at risk. Williamson (1975) and Jensen (1993) believe that managers will act in their own best interest. This means they will be less likely to act aggressively in response to external shock whereby they would assume additional risk. The management in this case will be seeking short-term strength and forsake long-term growth prospects. In this situation, these economists view financial slack as a hindrance to the organization.

Nohria and Gulati (1996) suggest that too much slack can lead to complacency. They also note that there may be a tendency to pursue projects that benefit individuals

and not the organization as a whole. To conclude, Greenley and Oktemgil (1998) found that high performing firms developed a positive relationship with financial slack while low performing firms did not.

Technological Resources

For the past two decades, technological improvements have been greatly instrumental in re-shaping financial institutions (Kane, 1982) and identified three technological forces active in this reshaping process: (1) electrification, which is the replacement of human energy and paper evidence with electrical power and electronic images; (2) robotics, the displacement of human beings by machines for production and decision making; and, (3) telecommunications, which involves distance marketing regardless of cost or geographic entry.

Pohlman (1982) agreed with Kane by adding that these technological changes have also spurred organizational changes. These include interstate branching, bank holding companies; affiliate relationships with distant banks, or even the possibility of becoming a subsidiary of a non-bank.

Van Deventer (1982) identifies five strategies from which a banking firm may opt: (1) it may remain independent and purchase products from other service providers; (2) it may remain independent and sell its goods to other banking institutions; (3) it may franchise its goods and services to a larger market, using a common name; (4) it may acquire and thus expand; or, (5) it may be acquired by selling.

Technological resources can present a seemingly contradictory situation for an organization. These resources can be seen as aiding organizational growth and as constraining that growth. Commitment to new technology can be expensive and lock up

capital that could be used for other expenditures. Pennings and Harianto (1992) measure the extent of technological resources in commercial banks as prior investment in new technology. The study indicates that prior investment in technology leads to the propensity to invest in new technology as it becomes available. The belief is that more advanced technology can further contribute to the success of the organization.

Cohen and Levinthal (1990), Schoenecker and Cooper (1998) and Yeoh and Roth (1999) follow Mahoney and Pandian (1992) by referring to and measuring technological resources as commitment to research and development. Yeoh and Roth (1999) support the importance of technology in an environment of change. Kogut and Zander (1992) and supporters Wernerfelt's (1984) notion that technology can be leveraged in new markets to gain competitive advantage. This advantage can be sustained if it expands the technology beyond its original boundaries (Moore, 2005; von Hippel, 2005). Nickerson, Hamilton, and Wada (2002) found that technological resources provide the capability to respond to new opportunities and changing environments. The results of the previous studies show that technological resources impact how organizations respond to their environments.

Even though the results of the previous studies suggest that investment in technology can be positive with regards to organizational performance, the concept of opportunity cost comes into play. This idea basically means that dollars spent on one item cannot be used for another purchase. This concept seems like common sense but is sometimes missed in management decisions. The goal should be to leverage technology spending and not affect slack resources that could be used for other necessary expenses.

It is not only the possession of new technology and the knowledge with which to use it that enables organizations to respond to external shock, but also the development of competencies around this technology is also important. As an organization increases its capabilities, it can more easily respond to changes in technology. This phenomenon was discovered by Chandler (2001) in the study of RCA and its demise in the face of Japanese competition. An opposing position to the belief that the acquisition of new technology is an organizational asset states that prior commitment to new technologies will inhibit response. Cooper and Schendel (1976) suggest that committing to old technology is strong in many established organizations.

Managers may be reluctant to invest in new technologies because their organization may have existing products, employee skill sets, and managerial positions that are threatened by new technology. For these reasons, managers may not be willing to make these investments. Studies have shown that organizations that are unwilling to embrace and utilize new technologies do not respond well in the face external change Christensen and Bower (1996).

Rosenbloom (2000) found that organizations that refuse to update their existing technology often faced near disaster. Hill and Rothaermel (2003) found that during radical technological change that results in market shifts, incumbent organizations perform best when they invest in new technologies but also continue to realize the benefits from existing systems.

On the contrary, commitment to legacy technology and associated processes can discourage organizations from investing in new technologies. Situations like this have been referred to as dominant design and when it occurs, technological changes become

minor or even nonexistent. Dominant design strategies shift attention away from innovation and toward developing efficiencies with current technologies and processes (Tushman & Romanelli, 1985).

A prolonged adherence to this strategy can lead to technological lock out. Schilling (1998) found that technological lockout occurs when an organization's dominant design is not accepted by the industry and they are then locked out of the market. This shows that organizations with strong commitments to prior technologies will be less likely and be less flexible to deal with exogenous shock in a positive manner.

Organizational Resources

For this study, organizational resources were thought of as capital resources. Capital resources were defined as informal relations among groups within the firm and between a firm and those in its environment (Barney, 1991). In particular, an organization's reputation was examined as an important part of their ability to succeed.

Reputation resources are elements of the organization that signal to the environment what the organization is about and how it behaves (Gallo, 2008). An organization's reputation can be based on a number of things and may include its ethical conduct, the quality of the services they provide, the quality of products offered, and how it is viewed with respect to social responsibility. Reputation can be viewed as an intangible resource that is built over time (Amit & Schoemaker, 1993; Hall, 1992) and is therefore sustainable and durable Hall (1993). In a multiple industry national survey of 95 organizations, Hall (1993) found company reputations to be ranked as the top intangible resource. A good reputation can be a tremendous competitive advantage. The reason for this is that duplication of reputation by the competition is not easily

accomplished (Barney, 1991; Grant, 1991). Roberts and Dowling (2002) studied the relationship between reputation and financial performance in 546 companies listed on the 1984-1998 *Fortune America's Most Admired Corporations.* Their study found that companies with favorable reputations had greater profits than those that did not. The belief is that a strong organizational reputation will push firms to respond to the environmental changes in an effort to maintain their reputation.

A good reputation can bring an organization a number of advantages. As Fombrun (1996) points out, a good corporate reputation builds customer loyalty. Loyalty develops as trust between the organization and the customer grows. When this happens, the uncertainty of an organization's products and services is reduced. Loyalty also brings repeat business, which leads to stable revenues over time Fombrun (1996). A strong reputation and loyal customers can impose significant barriers to entry for new competition. Also, reputation is not easily imitated and therefore it is exploitable (Carmeli & Tishler, 2004).

Organizations with strong reputations are likely to respond positively to external changes. Their reputation allows them to act with credibility and efficiency. A strong reputation may even give them the ability to shape the face of change in their environment (Hamel & Prahalad, 1994). Caves and Porter (1977) on the other hand believe there can be risk in responding to events in the external environment. Their study also shows that investing in activities to increase barriers for the competition can lead to lower profits, which in turn hurts the long-term performance of the company.

Additionally, some firms found that pursuing strategies to respond to external shock may put their company reputation at risk. Wilson (1985) found that within

organizations with favorable reputations, manager's decisions might put the reputation at risk. Because of this, firms with strong reputation may be reluctant to implement a strategy if it is seen as too risky.

Based on the previous discussion, it can be seen that an organization's reputation can be seen as an important factor in determining how they respond to exogenous shock. In the case of Green Bank, the evidence of a good reputation can be seen in the fact that they did not accept federal bank bailout money when other banks did. In tough economic times this fact would most likely enhance their reputation.

Management Resources

A review of literature on this topic reveals many discussions on the importance of managers to the decision-making and success. The ability to manage resources (Hall, 1992,1993; Penrose, 1959; Teece, Pisano, & Shuen, 1997; Wernerfelt, 1984), the possession of specific skill sets in research and development, advertising (Montgomery & Hariharan, 1991), and managing physical resources Majumdar (1997) are thought to be central management characteristics for building competitive capabilities. Management abilities in facilitating teamwork, inspiring innovation, and managing change are important factors in rapidly changing environments Hall (1993,1992).

Hambrick and Mason (1984) built on the idea proposed by Cyert and March (1963) that managers promoted from within the organization will be restricted in their thinking. This phenomenon is thought to be problematic when trying to cope with external changes. Wiersema and Bantel (1992) suggest top managers' cognitive viewpoints, which are reflected in their demographic characteristics, are related to their likelihood to change corporate strategy. Bantel and Jackson (1989) found that innovative

banks tend to be managed teams with diverse functional experience and education. Organizations with heterogeneous management teams are more likely to respond to exogenous shock than are homogeneous management teams (Gallo, 2008).

Contrary evidence to this position has been found. Hambrick and Mason (1984) point out that heterogeneous managements teams sometimes find it difficult to reach consensus. Dess and Oringer (1987) believe that differences in top management can result in less effective communication, less consensus, and greater intra team conflicts. Tushman and Romanelli (1985) agree that heterogeneity in organizations can lead to political positions and resist changes due to vested interest among groups within the organization. This organizational inertia can prevent a firm from making changes when necessary. Their study found that organizations with homogeneous top management teams in terms of organizational tenure, industry tenure, and personal demographics, realize higher performance than those with heterogeneous top management teams. The conclusions of this study were that quick responses are more likely with homogeneous rather than heterogeneous top management teams.

In a similar study involving hospital settings, where pluralistic decision-making is common, Denis, Lamothe, and Langley (2001) found that institutions with uniformity in leadership were more effective in enacting change. With regard to Green Bank and their top management team composition throughout the years, the dearth of information makes this kind of assessment a difficult task. It has long been acknowledged that competent and effective management is necessary for any organization's success. The fact that Green Bank survived the Great Depression of 1929 is most likely an indication of effective management at that time.

A recent study shows existing a positive relationship between turnover of poorly performing management and subsequent performance (Denis & Denis, 1995; Holchkiss, 1995; Khorana, 2001). These studies suggest that managerial discipline linked to traditional monitoring by boards can improve performance (Palvia, 2010). This same report concludes that both weak performance and regulator monitoring are related to greater executive turnover in banking. The report also suggests that regulatory evaluations of management serve to compliment the role of the board oversight (Palvia, 2010).

It is for the aforementioned reasons that board composition is so important. It is necessary to have the appropriate personnel on the board so as to effectively oversee the management and provide governance. The board also acts on the recommendations of external regulators, which is why appropriate board members are necessary for this function.

Mergers and Acquisitions

Because the banking industry is significantly regulated and given the nature of the competitive environment, it is difficult for bank leaders to grow their organizations. It is for this reason that mergers and acquisitions are prevalent in the banking industry. This resulted in strategies of external growth through merger and acquisitions as a significant trend in the commercial banking industry in the early 1980s Dunham and Jarvined (1985). Merger and acquisitions are distinctly different actions as defined by the Federal Reserve Bank (Research Report 69). A merged bank is defined as, "after its purchase becomes part of the bank subsidiary into which it is merged and ceases to exist as a separate entity." A bank acquisition is defined as, "after its purchase becomes a

subsidiary bank of the organization." In short, a merged bank loses its identify and the acquired bank maintains its brand identity, but changes ownership status.

A merger is a combination of two or more firms under the same ownership for the purpose of financial solvency and gain (Obiesie, 2006). Bank combinations are closely linked to changes in technology, increases in non-performing loans, and inadequate equity capital prompted by loosening of regulations. Merger theory suggests that mergers will occur with greater frequency when there are financial disturbances in the industry (Obiesie, 2006). Between 1990 and 2006, Green Bank acquired 12 other financial interests. These included bank and thrift companies as well as securities and specialty finance companies. With the financial crisis currently affecting global markets, the rate of mergers may increase.

To establish a historical perspective, 177 applications for merger among commercial banks were approved by the Federal Reserve Board in 1980 where as 442 applications were granted in 1983 (Obiesie, 2006). More recently, the FDIC approved 275 mergers in 2008 (Merger Decisions, 2008). This group included interim, reorganization, and regular mergers.

The previous organizational attributes and activities have been used in prior studies of the commercial banking industry. The concepts of financial slack, technology resources, organizational resources, management resources, and mergers and acquisitions are most applicable to conducting this study. Data were collected over a number of years that relates to all of these attributes except technology, in an effort to assess the solvency of Green Bank.

The Role of Banking Institutions

As mentioned previously, this study was of an organization referred to as a bank. As such, it is important to have an understanding of what a bank is and what it is responsible for doing. A bank in the usual and tradition sense is a financial institution offering two major services to the public: (1) transaction accounts, which may be used to make payments for purchases of goods and services, and are widely accepted by the public for that purpose; and, (2) direct loans to businesses, individuals and other institutions. The financial institution that comes closest to this definition is the commercial bank (Rose & Frazier, 1985). Green Bank, the subject of this study, is considered a commercial bank. To state simply, a bank is a financial institution that receives money through deposits and other savings instruments, offers checking accounts, and makes direct loans to businesses and individuals. There are other institutions that offer similar services as the commercial bank such as the savings and loans and credit unions. That is why it is important to clearly define the functions of a commercial bank so as to not get confused with other institutions.

Banks also provide a variety of other services while acting as financial intermediaries. According to Rose and Fraser (1985) these other functions include: (1) denomination intermediation wherein small amounts of money accepted from individuals are pooled to make larger loans, in particular corporations and government entities; (2) default risk intermediation, where loans are issued to risky borrowers and simultaneously unsafe and liquid securities are issued to savers; (3) maturity intermediary, this is where short-term borrowing from savers and long-term loans to borrowers who need longer term funds are granted; (4) information intermediary, where

lenders who possess lower levels of skill and less time are informed and skills-oriented, enabling them to keep abreast of current market conditions; and finally, (5) financial intermediary, wherein risk pooling and economies of scale become integral factors in financial services to borrowers and lenders.

When looking at the additional five functions of banking institutions, one of them stands out as being related to the current crisis. As mentioned previously, the current financial crisis was caused in part by actions outlined in the default risk intermediation. This entails lending money, in this case mortgages to risky borrowers, which in turn produced unsafe investments in the form of mortgage bundles. Even though this is a standard practice among banks, over the past several years, this activity may have been too risky.

The Need and Rationale for Banking Regulation

Banking is an important industry to the United States economy and is therefore highly regulated by the government. The main cause for government intervention in the banking industry is "the prospect of failure in an unregulated banking market and the economic instability that would result from such a failure" (Cooper & Frazier, 1984).

First and foremost for government regulation is the supervision of a bank's operations. This oversight function was strengthened in 1991 by the Bush Task Force, which assured the public of " safety and soundness of financial institutions, and of the financial system as a whole both to protect individual depositors and to avoid or limit secondary affects of a failed institution" (Obiesie, 2006, p. 14). The Bush Task Force also outlined three other goals, which included "avoiding conflict of interest, fraud and consumer abuses; promoting orderly markets to encourage savings and capital formation,

to support macroeconomic stability, and avoid excessive concentrations of economic and financial resources" (Obiesie, 2006, p. 14).

The last initiative listed, avoiding excessive concentration of economic and financial resources, is found almost exclusively in the United States. The United States is concerned with large and powerful centralized banks and as a result has developed strong foreign and domestic regulations to prevent banking concentration that would result in economies of scale. The government regulates the banking industry to promote competition. The desire is for many smaller banks to compete so as to provide cost effective services to the public.

Banking regulations are almost as old as the United States itself. The first ones began during colonial days and dealt with chartering or licensing banks. In fact, the first two banks closed because their charter was not renewed; the First Bank of the United States (1791-1811) and the Second Bank of the United States (1816-1836) (Obiesie, 2006).

In 1864, the National Banking Act was passed which extended the powers of the Federal government into the banking systems (Obiesie, 2006). This act led to more stringent chartering requirements, which was supervised by the United States Comptroller of the Currency.

The next major piece of banking regulation was passed in 1927 with the McFadden Act. This act sought to restrict the geographic expansion of banks, which prohibited banks from extending across state lines; it essentially prohibited interstate banking. Under these conditions banks preferred a state charter to a federal one (Obiesie, 2006). The McFadden Act also allowed commercial banks to get involved with securities

underwriting, which means they became involved in issuing other companies stocks and bonds. This underwriting function of commercial banks was repealed to reduce the risk assumed by a commercial bank. The immediate impact of the McFadden act on Green Bank may not be as important as the long-term effects. Eventually, Green Bank did expand beyond state lines and engaged in underwriting. These two aspects with regards to commercial banks have been the source of debate for many years. Since 1927, the allowance of commercial banks to underwrite has been repealed and reinstated.

The banking crisis that followed the stock market crash of 1929 inspired several restrictive banking laws to be passed. The intent of these new laws was to provide a safe banking industry for the people of America. Two major acts followed the banking holiday in 1933. These acts were the Glass-Steagall Act of 1933 and the Banking Act of 1935 (Obiesie, 2006).

The Glass-Steagall Act established the Federal Deposit Insurance Corporation (FDIC), separated the investment and commercial banking functions, prohibited interest payments on demand deposits, and raised capital requirements for national banks (Obiesie, 2006). These restrictions were thought to produce three results: commercial banks would be more reliable, safe, and less powerful.

The Banking Act effectively systematized the bank chartering process. Applicants would have to demonstrate that they were solvent and there was a need for the bank they proposed. It also prevented banking authorities from chartering banks across state lines. Essentially, even if a state charters a bank but the FDIC refuses insurance, the bank could not operate with a guarantee and would eventually become insolvent.

In 1960, the U.S. Congress passed the Bank Merger Act. This act was further amended in 1966 and addressed concentrations in the commercial banking industry. The aspects of the banking industry that this legislation addressed were: (1) the financial history and condition of each bank involved in the merger; (2) the adequacy of each bank's capital structure; (3) merged banks' earnings prospects; (4) general character of merged banks' management; (5) convenience and needs of the community to be served; (6) consistency of merged banks' corporate powers with the purpose of FDIC; and, (7) the effect of merger on industry competition (Obiesie, 2006). The main purpose of this legislation was to prevent unfair competition that could result because of a merger.

The year 1980 saw the passage of the Depository Institutions Deregulation and Monetary Control Act abolished regulation Q which set interest rate ceilings on demand deposits (Obiesie, 2006). The Garn-St. Germain Depository Institutions Act of 1982 further deregulated the banking industry by freeing banks from restrictive law but still kept a watchful eye on competition (Obiesie, 2006).

The latest banking crisis prompted federal regulators to enact additional legislation to once again protect bank customers and prevent this type of crash from occurring in the future. These new regulations are Troubled Asset Relief Program (TARP), the Community Development Capital Initiative, and the Temporary Liquidity Guarantee Program.

On October 14, 2008, the U.S. government announced a series of initiatives to strengthen the market stability, improve the strength of financial institutions, and enhance market liquidity. The Treasury Department would accomplish this by purchasing up to $250B of senior preferred shares on standard terms. This act would give participating

banks the cash reserves with which to make business loans and this program is known as the TARP (TARP Information, 2010). Green Bank did not participate in this program.

On February 3, 2010 the federal government announced a new program that would provide access to capital for small businesses. This program is called the Community Development Financial Initiative. This new TARP program invested lower-cost capital in Community Development Financial Institutions (CDFI) that lend to small businesses in the country's hardest hit communities (Community Development Capital Initiative, 2010).

Finally, the Temporary Liquidity Guarantee Program, which includes the debt guarantee program and the transaction account guarantee program was approved. The Debt Guarantee Program is administered by the FDIC and guarantees payment of any unpaid principal and contract interest accrued to the date of failure or bankruptcy incurred by a participating depository institution. This program was available from October 14, 2008 through June 30, 2009 and the FDIC would pay interest at the 90-day T-Bill rate if there was a delay in payment beyond the next business day following the bankruptcy.

The second part of the Temporary Liquidity Guarantee Program, the Transaction Account Guarantee Program, insures a participating depositor's funds in a non-interest bearing transaction account. This program was in place from October 14, 2008 through December 31, 2009 or until the entity opts-out of the program (Temporary Liquidity Guarantee Program, 2010).

The Financial Regulation Bill

During the writing of this dissertation, the U.S. House of Representatives and the U.S. Senate proposed a financial bill that intended to prevent the type of financial crisis that is currently affecting the global economy. The bill originated in the Senate Subcommittee on Banking, Housing, and Urban Affairs. Unlike the three programs already discussed, the Troubled Asset Relief Program (TARP), the Community Development Capital Initiative, and the Temporary Liquidity Guarantee Program, which were all designed to provide liquidity to failing financial institutions, the Financial Regulation Bill seeks to enact more preventative measures.

The new bill was inspired by the Bear Sterns collapse in the first half of 2008. This event precipitated mass unemployment, failed businesses, and wiped out saving accounts for many Americans. The Financial Regulation Bill seeks to restore responsibility and accountability in the financial system. There are eight areas that the new bill addresses. These are as follows: (1) Consumer Protection with Authority and Independence; (2) Ends Too Big to Fail; (3) Advanced Warning System; (4) Transparency & Accountability for Exotic Instruments; (5) Federal Bank Supervision; (6) Executive Compensation and Corporate Governance; (7) Protection for Investors; and, (8) Enforces Regulations on the Books (Senate Passes Bill, 2010).

These new regulations were designed to provide liquidity to the lenders and then to prevent the current type of crisis from happening again. Liquidity programs were enacted shortly after the crisis began. This was to allow banks to continue lending money and prevent disruptions to the business environment. The recent Senate Bill was meant

to close loopholes, learn from our collective mistakes and create sound financial markets going forward.

Legislation of this kind typically produces opinions on both sides of the issue. Many Republican and bank lobbyists oppose this bill by saying the policy is making the situation worse. President Obama said, "the new financial bill would end the era of irresponsible people, and prevent mistakes that lead to the financial crisis." The Governor of the FED Central Bank, Ben Bernanke stated, "This new financial reform bill approved by Congress reflects an arrival and steps to prevent similar financial crises" (Pros and Cons, 2010).

In addition to the regulations that will be imposed by the Financial Regulation Bill, there are three current regulations that Green Bank deals with regularly. These are the Gramm-Leach-Bliley Act, the USA Patriot Act, and the Sarbanes-Oxley Act.

The Gramm-Leach-Bliley Act was enacted in 1999 and repealed the 1933 Glass-Steagall Act's separation of commercial banking and investment banking. This act created a new category of holding company termed a "financial holding company" which is authorized to engage in an expanded range of non-banking activities while preserving existing authority for bank holding companies to engage in activities that are closely related to banking. Green Bank elected to become a financial holding company in 2009 (Annual Report, 2009).

The USA Patriot Act is an anti-terrorism piece of legislation enacted under the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001, commonly known as the Patriot Act, expanded the scope of anti-terror money laundering laws and regulations and impose

additional obligations on U.S. financial institutions, including banks. These regulations include obligations to maintain appropriate policies, procedures and controls, which are reasonably designed to detect and report instances of money laundering and terrorist financing (Annual Report, 2009).

Lastly, the Sarbanes-Oxley Act of 2002 implemented a broad range of corporate governance, accounting and reporting measures for companies that have securities registered under the Security Exchange Act of 1934, including publicly held bank holding companies such as Green Bank. Sarbanes-Oxley created new requirements in the areas of financial disclosure and corporate governance, including:

> Increased responsibility for the Chief Executive Officer and the Chief Financial Officer with respect to the content of financial statements; new requirements for audit committees, including independence, expertise and responsibilities; new standards for auditors and regulation of audits, including independence and the type of non-audit services that auditors may provide; accelerating filing requirements for SEC reports; disclosures concerning internal controls and procedures; increased disclosure and reporting obligations for the reporting company and their directors and executive officers; disclosure of a code of ethics; and a range of new increased civil and criminal penalties for fraud and other violations of the securities laws. (Annual Report, 2009, p. 9)

Merger Theory

In order to improve their financial performance, a bank may consider a merger or a combination of two firms. A merger could increase revenues, decrease costs, or give the new bank better name recognition. Mergers are very common in the commercial

banking industry because of the nature of the competitive environment. There are three types of mergers a bank may want to consider they are a vertical, a horizontal, or conglomerate merger.

Horizontal mergers are mergers between companies in the same industry or firms that are competitors within a discernable industrial context Mueller (1969). These were the most common type of merger occurring between the late 1800s and 1905. From 1905 to the 1980s, this type of merger began to fall out of favor with business regulators. An example of this type of merger is the acquisition of Mellon Bank of Pittsburgh by Bank One of North Carolina. Green Bank primarily participates in this type of merger.

Vertical mergers involve the combination of organizations that are the suppliers or the distributors of the acquiring firm. This has also been referred to as forward or backward integration. Mergers of this type erect barriers required to enter the market and can make the merged firms more competitive. An example of this type of merger could be seen as General Electric offering a credit card so that their customers can more easily purchase its products.

Lastly, the conglomerate merger is unlike the previously mentioned strategies. These could take the form of a product extension or a market extension. Product extension mergers are mergers between organizations producing similar products or services. A good example of this would be a bank acquiring a financial company. On the other hand, a market merger is between companies that have the same kinds of products but operate in different geographic locations so they do not compete with one another. The conglomerate merger may take place between firms in different countries for the sole purpose of gaining market share.

There are a number of reasons for banks to merge. Halpern (1973) found that mergers usually produce significant gains for the stockholders of the acquired firm. Lewelin (1971) found that mergers of the conglomerate type were less likely to go into default because the returns of the firms were not correlated. Synergistic effects can also come into play when considering a merger. In this case it is believed that the value of the combined firm is greater than the sum of the individual banks.

The synergistic gains following a bank merger can result from a variety of factors including gains in operating efficiency and leveraging economies of scale. These two factors are likely to result from vertical or horizontal mergers and not a conglomerate merger (Obiesie, 2006). Synergistic effects can occur by improving a bank's research and legal department or its marketing and data processing divisions.

Timing of mergers also plays an important part. According to Ansoff (1965) the issues of timely planning for mergers could include a firm's objectives and diversification strategy. Christensen, Andrews, Bower, Hammermesh, and Porter (1982) view timely merger planning from a different perspective. The Christensen group maintains that merger strategy represents the following: a company determining its objectives, developing the policies and plans for achieving these goals, and determining what business they should be in.

Merger planning is mostly concerned with what is going on outside of the company. The final solution involves what the company needs or wants and the best options from the external environment. This study examined the prospect of commercial bank mergers with an eye toward becoming or remaining solvent.

The Banking System of the United States

At the top of the United States banking system is the Federal Reserve Bank (FED). Congress created the FED in 1913 through the passage of the Federal Reserve Act. Its purpose was to provide for a safer, more stable financial system. Over time, the bank's role expanded to include financial regulation to promote economic growth in line with the country's capacity to expand while at the same time maximizing the level of employment.

The Federal Reserve is independent in as much as its decision do not have to be approved by the President or any member of the executive branch. The system is however subject to oversight by Congress because of its authority to coin money. The FED must also abide by the economic and financial policies established by the U.S. government. The FED has four main functions: conduct monetary policy, supervise and regulate depository institutions, maintain the stability of the financial system, and provide payment and other financial services to the U.S. government, the public, financial institutions, and foreign official institutions (Saunders & Cornett, 2004, p.89).

This study focused on Green Bank, which is part of the commercial banking system and is regulated by the FED. Commercial banks are depository institutions and their functions are similar to savings institutions and credit unions. Commercial banks accept deposits, which are considered liabilities and then make loans, which are considered assets. Commercial banks are distinguishable from credit unions and savings institutions by their size and composition of their loans and deposits.

The primary revenue generator for commercial banks is the interest paid on the loans they make. On the other hand, investment securities provide banks with liquidity.

Commercial banks are exposed to high levels of liquidity risk. This risk comes from the institution's liability holders such as depositor's demand for cash from the institution. It is for this reason that banks keep a certain percentage of deposits in the vault to handle such claims.

The lessons to be learned from a commercial bank's asset structure is that the major risk faced by a modern commercial bank are credit risk, liquidity risk, and insolvency risk. Because commercial banks are highly leveraged with little equity compared to assets, even small amounts of loan default can wipe out the equity in a bank leaving it insolvent. Losses due to loan defaults are charged off against equity. Therefore unexpected loan defaults or depositors demanding cash during a recession can seriously hinder the bank's ability to perform its function.

Managing Banks Successfully

The main concern of this study was to determine if a commercial bank was solvent and if it will remain so for the foreseeable future. First and foremost, the ultimate success or failure of banks rests on their ability to relate meaningfully to the consuming public, to capitalize on established customer relationships, to control their operating costs, and to make mergers with other banks work (Spiegel, Gart, & Gart, 1996).

To quantify these initiatives, a discussion of financial ratios is now appropriate. Up to 119 financial ratios can be calculated and used to evaluate the performance of a commercial bank (Saunders & Cornett, 2004). Because tracking all 119 of these ratios would constitute a major undertaking, only the ones most closely related to bank solvency are discussed.

First, the interest rate spread between market yield on bank debt issues such as CDs and the market yield on government securities of the same maturity (Rose, 2002). When the margin between these two rates widens, the market is concerned about the risk of loss from purchasing these securities. Second, the ratio of a bank's stock price to its annual earnings per share (Rose, 2002). If investors believe a bank is undercapitalized for the risk it has accepted, this ratio will fall. Third, the ratio of equity capital (net worth) to total assets held by the bank (Rose, 2002). This ratio reflects how well a bank capital covers potential losses from assets likely to decline in value such as sub-prime mortgages. If this ratio declines, it may indicate risk to shareholders and debt holders. Fourth, the ratio of purchased funds to total liabilities (Rose, 2002). Purchased funds could include short term uninsured deposits from other banks, corporations, and government entities.

When banks want to measure the adequacy of their capital and the ability to generate capital, they use the tangible equity ratio. The tangible common equity ratio is the tangible common equity divided by assets (Spiegel, Gart, & Gart, 1996). This ratio is an indicator of how well capitalized a bank is and of an institution's strength and ability to withstand severe credit-quality problems that require huge write-offs (Spiegel, Gart, & Gart, 1996). Tangible Common Equity also helps regulators determine the likelihood of bank mergers. Typical values for this ratio are between 5.16% to 7.07% (Spiegel, Gart, & Gart, 1996).

CHAPTER 3

METHODS TO CONDUCT THE STUDY

This chapter provides an overview of the research methodology that was used while conducting the study. A case study methodology was chosen because of the nature and scope of the investigation. This study examined a commercial bank that did not accept TARP funding. Current solvency and the likelihood of future solvency was the main concern while studying Green Bank. Both qualitative and quantitative data were collected for the study with stock price comparisons made with four other banks. These banks were chosen because they were in the same asset class as Green Bank and provided a good basis for benchmarking. Two of the comparison banks accepted TARP money and the other two did not.

TARP funds were given primarily to banks that were not able to continue operations because they had toxic assets (sub-prime mortgages) on their books. Because of accounting rules, banks carrying these types of assets did not have collateral with which to make loans because the sub-prime mortgages had little or no value. Without the ability to make loans, commercial banks cannot operate and thus required temporary federal assistance. Not all banks that accepted TARP money were in financial trouble. Government regulators set out to distribute bailout funds to as many institutions as possible so as to not indicate where the toxic assets were located. The logic behind this move was that if one bank accepted the funds outright while another did not, the public would know that the bank accepting funds was in financial trouble. Even with the funding from the government, if people and institutions would not do business with those banks, then they would eventually become insolvent.

Statement of the Problem

The problem facing the United States as well as many other world financial institutions is financial institution failures due to the ongoing global recession. The purpose of this study was to examine a rural commercial bank that seemingly performed well during the global financial crisis. Through interviews and data collection from financial reports, the current financial condition of the bank and trends for its future performance were examined. Economists placed the beginning of this financial crisis around mid September 2008 with the first wave caused by the sub-prime mortgage collapse. In 2011, some of the effects of the financial crisis, which began in 2008, are still being felt with the Federal Deposit Insurance Corporation (FDIC) closing banks it determined were insolvent.

Research Questions

Research questions for this study were based on what it takes to produce banking success in general, and the commercial bank Green Bank, specifically. Questions that were investigated during this study are as follows:

1. How have bank solvency ratios changed following the global financial crisis of 2008?
2. How has the bank changed its solvency indicators following the crisis of 2008 as compared to the years 2003-2007?
3. How has the bank changed its financial slack profile in response to the exogenous shock initiated by the global financial crisis of 2008?
4. For what reasons will the bank seek a merger or acquisition following the global financial crisis of 2008?

5. How has the bank's tangible common equity ratio changed the likelihood of a merger or acquisition following the financial crisis of 2008?
6. How has the bank changed its technology expenditure portfolio following the financial crisis of 2008?
7. How do customers view the reputation of the bank following the financial crisis of 2008?
8. How has the bank changed its board member mix to in order to maintain expected performance following the financial crisis of 2008?
9. How will the regulatory changes enacted by the federal government help the bank remain solvent going forward?
10. How has the common stock price for the bank changed following the financial crisis of 2008?

Research Design

This study was conducted using a case study approach. The primary focus of the study was to analyze a financial institution that demonstrated success by not accepting government funds to continue operations. Examination of financial ratios as well as interviews with senior bank executives were used to answer the research questions. Financial ratios are a traditional method used for determining the success of banks. Numeric data were supplemented with open-ended questions posed to the bank CEO and the Operations Vice President. The bank selected for study was Green Bank.

In order to make sure the results of this study were meaningful, benchmark values for the financial ratios were used. Fiscal year 2008 was anything but a typical year for the banking industry as well as the United States economy as a whole. For this reason,

values from previous years were used as a comparison and to indicate trends. Fiscal years 2003 through 2007 were more representative of typical banking industry performance and were used as a basis for comparison.

Variables Used in this Study

A number of variables were used in this study to investigate the research questions.

Financial Strength

Financial strength of a bank can be measured by organizational slack, which is considered to be the excess resources that a firm posses (Bourgeois, 1981; Cyert & March, 1992; Meyer, 1982). Slack is considered to be resources that are recoverable Bourgeois (1981) or available Singh (1986). In the banking industry, capital ratios have been used as an indication of financial strength. Slack as represented by the capital ratio is total equity divided by total assets. This information was collected from bank annual reports.

Technological Capability

This variable is a measure of the investment in technology by a financial institution. This idea comes from the study conducted by Pennings and Harianto (1992) in their study of financial services innovation in the commercial banking industry. Technological capability was measured as the total investments in equipment and systems divided by total assets. This variable trended technological spending and be a measure of the bank striving to remain competitive. Although this variable was initially considered for this study, the three reviewers involved in the pilot study showed this question is not valid for this study.

Organizational Reputation

This attribute was measured by market share retention and expansion. Discussions throughout the literature reiteration how reputation and retention of market share can create barriers to entry Barney (1991), discourage and diminish competition (Fombrun, 1996; Grant, 1991), and entry into the market Sharma and Kesner (1996). The ethical beliefs and behavior exhibited by the financial institution was also measured by this variable. If a bank acts unethically, in any manner, potential depositors and stakeholders will refuse to do business with the institution. This will in turn result in insolvency over the long run.

Market share and therefore reputation was calculated as the total deposits of the organization to the total deposits of the competitor banks in the area. Because this is a case study, the deposits of Green Bank were compared with the banks identified as their competitors. A measurement of how deposit money shifts after the crisis was an indicator of how well Green Bank is performing.

This variable was also examined by asking bank executives about ethic programs implemented in the organization since the financial crisis. The recognition of the need for ethics is a good indication the bank will have a strong reputation going forward.

Management

It is no surprise that management is extremely important to the successful functioning of an organization. In this study, management characteristics of board members and senior management was used to assess their response to external shock such as the one created by the current financial crisis. A similar study was conducted by the Federal Reserve Bank (Spong, Sullivan, & DeYoung , 1995). The characteristics of

top managers such as age and tenure with the organization proved vital in how the organization responded to the external change. Overall management effectiveness was determined by trends in the bank's stock price.

A few years ago, a case study was conducted to determine what makes good companies perform at their peak level. In his book *Good to Great*, Jim Collins identified companies that emerged from the pack of mediocre ones and achieved great success. Throughout the study, Collins refers to a level five leader. Collins defines a level 5 leader as one who builds an enduring greatness through a paradoxical blend of personal humility and professional will (Collins, 2001).

Collins studied companies that excelled in the business world and in order to identify great companies, he used their stock market performance as an indicator. The Collin's study examined companies over a 15-year period to find strong performers and not just one-time successes. Collins attributed this success to what he referred to as a level-5 leader, which is a leader who would represent a turnaround leader in a transition.

This study of Green Bank did not seek to identify level five leaders but instead to recognize that the CEO does impact organizational performance, especially in a transition period such as the current crisis. Additionally, the Collins' study emphasizes the importance of common stock price as an indicator of management effectiveness.

Addressing the Research Questions

Research questions posed in Chapter 1 were examined by a variety of means. As is seen throughout the review of literature, financial ratios and numerical data were used extensively to determine the quality of financial institutions. This study determined the

solvency of Green Bank and the likelihood it will remain solvent for the foreseeable future.

The analysis involved looking at current data available for Green Bank as well as data from the recent past. Some of the ratio data were drawn from the years between 2003 and 2007. The reason for this is to establish a historical reference for the study and also to examine financial data in a more representative period. The main thrust was to observe how the variables change after the financial crisis threshold year of 2008.

Research Question 1. How have bank solvency ratios changed following the global financial crisis of 2008?

This question is very timely based on the condition of the commercial banking industry from 2008 to 2011. During this time, 140 financial institutions were declared insolvent and closed by the FDIC. When this occurred, depositors were covered by FDIC insurance and reimbursed the money they lost up to established limits. The previous limit was $100,000 per depositor but was increased to $250,000 until the year 2013 when the limit will revert back to the previous limit of $100,000. The effect of bank closures is that management, employees, and stockholders would lose their jobs and investments respectively. Even though depositors were reimbursed up to established limits, there is no guarantee how soon the depositors received their money.

Commercial bank financial solvency was determined by the following financial ratios: equity/assets, equity/risk adjusted assets, and total capital / total risk adjusted assets. In this case capital level was the sum of common stock and retained earnings. Acceptable levels of these ratios are 5%, 6%, and 10% respectively. If Green Bank has these levels it will be considered solvent. Ratios were examined for fiscal year 2009.

Financial data such as this was available on the FDIC website. The FDIC is an oversight body that maintains this type of information for the purpose of bank regulation. All banks regulated by the FDIC have this information available. The information to form these ratios was collected from the FDIC website for the most current reporting period.

Research Question 2. How has Green Bank changed its solvency indicators following the crisis of 2008 as compared to the years 2003-2007?

The literature review contained information that determined solvency and the trend toward insolvency for commercial banks. As mentioned previously, the interest rate spread between market yield on bank debt issues such as CDs and the market yield on government securities of the same maturity (Rose, 2002) was examined. When the margin between these two rates widens, the market is concerned about the risk of loss from purchasing these bank securities. The CD rates for Green Bank were obtained form the bank's operations vice president who also provided the government interest rates for the same time frame.

Second, the ratio of a bank's stock price to its annual earnings per share (Rose, 2002) was examined. If investors believe a bank is undercapitalized for the risk it has accepted, this ratio will fall. The bank's stock price and earnings per share were collected from annual reports.

Third, the ratio of equity capital (net worth) to total assets held by the bank (Rose, 2002) was formed. If this ratio declines, it may indicate risk to shareholders and debt holders. This ratio reflects how well a bank capital covers potential losses from assets likely to decline in value and was found in the bank's annual reports.

Fourth, the ratio of purchased funds to total liabilities (Rose, 2002) was examined. Purchased funds could include short term uninsured deposits from other banks, corporations, and government entities. Purchased fund data were found on Green Bank Annual Reports.

Data for these four ratios were collected for the years 2003 through 2007 because this five-year period provided a good background set of data to establish solvency or insolvency. Then these four ratios were collected for fiscal year 2009 through first quarter 2011. With this information, a determination was made as to how the conditions of the bank changed following the crisis of 2008.

Research Question 3. How has Green Bank changed its financial slack profile in response to the exogenous shock initiated by the global financial crisis of 2008?

Financial slack has been defined as the capital ratio, which is total equity divided by total assets. The capital ratio was collected over the years 2003 through 2007 again to provide background data for this ratio. Then the capital ratio was collected for fiscal years 2009 through first quarter 2011. This ratio shows how the bank's financial slack has changed following the crisis of 2008. These numbers were obtained from bank annual reports.

Research Question 4. For what reasons will the bank seek a merger or acquisition following the global financial crisis of 2008?

Mergers and acquisitions are very important in the solvency and financial performance of a bank and must be approved by the federal government. Questions relating to merger activity were asked of the bank CEO and the Operations Vice

President. Also noted was whether Green Bank is considering acquiring another bank or will itself be acquired by another bank.

Research Question 5. How has the bank's tangible common equity ratio changed the likelihood of a merger or acquisition following the financial crisis of 2008?

Mergers are a common activity in the commercial banking industry. The bank's tangible common equity ratio was examined as an indicator for the likelihood of a merger. This ratio was calculated for the years 2003 through 2007. These values were then compared to the values obtained from the 2009 through first quarter 2011 numbers. The tangible common equity ratio was formed by dividing tangible common equity by assets. This empirical data were then compared with the CEO interview answers relating to merger activity.

Research Question 6. How has the bank changed its technology expenditure portfolio following the financial crisis of 2008?

The literature review indicated that employing up to date technology was important in the continual success of an organization. This makes common sense. How often has the implementation of computer systems revolutionized certain industries? The banking system is no exception. The purpose of this variable is to see if Green Bank has changed its technology expenditure in an effort to remain competitive following the financial crisis of 2008. Any change noted was assumed to help the bank become more competitive in the new business environment.

This variable measured the technological expenditures in each of the years 2003 through 2007. These outlays were compared with the expenditures of 2009. Technological capability was measured as the total investments in equipment and

systems divided by total assets. This information was also compared with the answers from the technology vice president. (This question was dropped from the study on the recommendation of the pilot study participants. It was believed to have little relevance.)

Research Question 7. How do customers view the reputation of the bank following the financial crisis of 2008?

Reputation of any company is an important intangible asset. Reputation can be considered anything from "is your organization a household name" to how customers and investor perceive your ethical behavior.

For this study the variable reputation was measured by market share of available deposits. Reputation was calculated as the total deposits of the organization, Green Bank, to the total deposits of competitor banks in the region. As before, this value was compared over a number of years; 2003 through 2007 and compared with fiscal year 2009 through first quarter 2011 numbers. The trend of deposits shifting from competing banks to Green Bank was measured between 2007 and 2009; pre- and post-crisis. Survey question 7 also addresses this issue. The CEO and the Operations Vice President were asked how current ethics programs contribute to bank reputation.

Research Question 8. How has the bank changed its board member mix to in order to maintain expected performance following the financial crisis of 2008?

This question was answered by examining the board of directors for Green Bank. The make up of boards of directors can greatly influence the direction of an organization and have ultimate responsibility for the proper operation of an organization. Following the financial crisis of 2008, some company policies may have to be changed. The board of directors will have to make that change.

The current composition of the board of directors of Green Bank was examined to see if any changes were made following the crisis of 2008. Survey question 6 provided further insight to this issue. The literature review indicates there are two sides to the management composition issue. Heterogeneous management mixes are seen as an asset when formulating diverse ideas for problem solving. On the other hand this management mix can make it hard to reach consensus.

Research Question 9. How will the regulatory changes enacted by the federal government help Green Bank remain solvent going forward?

Since the financial crisis of 2008 occurred, a number of regulatory changes have occurred. There are varying opinions as to whether these new measures will be successful. For this study, the company CEO and the Operations Vice President were asked whether they think the new regulation will help their bank and the commercial banking sector in general through this current crisis. Information relating to this question was obtained in survey question 4.

Research Question 10. How has the common stock price for the bank changed following the financial crisis of 2008?

The common stock price of a corporation has long been an indicator of company success. A stock price will increase if investors believe the company will be able to remain profitable or even increase their profitably in the future. For this reason, the common stock price for Green Bank was examined to act as an indicator of success in the future. The stock price was trended from 2003 through the present reporting period. Also, the company Chief Executive Officer was asked his opinion on the value of the

company stock in the future. The Green Bank stock price was compared with two banks that took TARP and two that did not.

The Pilot Study

Data collected and the questions asked of Green Bank managers are not new or unique in their own right but the way they were connected in this study was. Therefore, the purpose of this pilot study was to determine if the research questions are suitable for this study and if the data collected was meaningful when presented in aggregate.

The pilot study was conducted by having three banking experts review the research questions and determine if they were appropriate and meaningful for this study. The first reviewer was John Brooks. Mr. Brooks currently works for Middleburg Bank in Virginia and is serving as its Vice President. His educational background includes an accounting degree as well as an M.B.A. He also holds a CPA license, which is recognized in both Pennsylvania and West Virginia. His work experience includes bank auditor from 1985 to 1990; executive experience while serving as Vice President and Chief Financial Officer of The National Bank of West Virginia from 1990-1994; President and CEO of the United Federal Credit Union; and Vice President /CFO/ and Interim President of Allegheny Valley Bank of Pittsburgh. He has also served as a senior manager for S.R. Snodgrass CPA's and Consultants from 1999 to present.

The second reviewer for this study was Mike Peduzzi who currently serves as the Chief Financial Officer of Union National Community bank in Lancaster Pennsylvania. Finally, the third reviewer was Jeffrey Tompkins. Mr. Tompkins is the Executive Vice President and Chief Operating Officer of Community Bank, a $475 million financial institution located in Southwestern Pennsylvania. He joined the bank in 2006 and has

worked in banking for over 21 years as a regulator, senior financial manager, and consultant. In his current capacity Mr. Tompkins oversees a number of different functions at the bank including retail banking, operations and finance.

As a consultant with S. R. Snodgrass from 2001 to 2006, Mr. Tompkins worked with banks of varying sizes in the areas of strategic planning, process engineering and profit improvement. He also performed model validations for numerous banks relating to Asset/Liability models and consulted with banks to improve their Asset/Liability management process.

Mr. Tompkins has also served as the Chief Financial Officer for a $320 million community bank where he oversaw all aspects of the accounting and finance functions for the bank and directed both the board and management Asset/Liability committees. His regulatory background includes employment with both the FDIC and Comptroller of the Currency where he examined commercial banks for both safety and soundness as well as consumer regulatory compliance as a commissioned bank examiner.

Mr. Tompkins is a graduate of the University of Pittsburgh where he earned a Bachelors degree in Economics and Business and an MBA in Finance and International Business. He has authored a number of articles on banking and strategic planning and is a frequent speaker at regional and national banking conferences.

All three reviewers reviewed the research questions and protocols as well as the questionnaire to determine if the material was appropriate for this study. The interview questions were reviewed and majority opinion took precedence. For example, when two of the three reviewers believed a question was not relevant, it was removed from the study.

Results of the Pilot Study

Comments of John Brooks are presented here.

1. How have bank solvency ratios changed following the global financial crisis of 2008?

Financial ratios equity/assets, equity/risk adjusted assets, and total capital / total risk adjusted assets were formed and compared with acceptable levels of 5%, 6%, and 10% respectively or greater. The information to form these ratios was collected from the FDIC website.

Evaluator Comments:

The three referenced ratios have specific names as follows in the order mentioned above:

Tier 1 Leverage Ratio

Tier 1 Risk-Based Capital Ratio

Total Risk-Based Capital Ratio

The ratios can be found on Schedule RC-R of each institution's quarterly Call Reports.

Research Question Validity? Y N

Yes. This question will help to establish solvency of the institution pre- and post-crisis as well on-going.

2. How has Green Bank changed its solvency indicators following the crisis of 2008 as compared to the years 2003-2007?

a) The interest rate spread between market yield on bank debt issues such as CDs and the market yield on government securities of the same maturity were examined.

This data can be collected from the bank website and then the Treasury Department website for the yield on the government issued debt.

b) The ratio of a bank's stock price to its annual earnings per share was examined. These numbers can be obtained from the bank website.

c) The ratio of equity capital (net worth) to total assets held by the bank was examined. This information was collected from the bank website.

d) The ratio of purchased funds to total liabilities was examined. Purchased funds are short term uninsured deposits from other banks, corporations, and government entities. This information was collected from the bank website.

e) The ratio of equity capital to total assets was examined. Data for this ratio were obtained for the FDIC website.

Evaluator Comments:

c) and e) appear to be the same questions.

Indicator e) is a good ratio to analyze and possibly contributed to failed institutions' liquidity crisis.

Short-term deposits from other banks is an incorrect term. It should read short-term borrowings from other banks, which are referred to as "Federal Funds Purchased." Short-term borrowings for corporations and government entities are referred to as "Repurchase Agreements" and require collateralization. Again, they are not insured deposits.

Also. I think this is referring to the indicators used as opposed to the results of the indicators. You delve into some of the results in questions below.

Research Question Valid? Y N

Yes. With corrections noted above.

3. How has Green Bank changed its financial slack profile in response to the exogenous shock initiated by the global financial crisis of 2008?

Financial slack is defined as the capital ratio, which is total equity divided by total assets. The capital ratio was collected over the years 2003 through 2007. Then the capital ratio was collected for fiscal year 2009 through first quarter 2011. This ratio is available on the FDIC website.

Evaluator Comments:

Question has relevance how well the institution has survived the shock.

Research Question Validity? Y N

Yes.

4. For what reasons will the bank seek a merger or acquisition following the global financial crisis of 2008?

This question was examined by direct questioning of the bank CEO and corresponds to question 1 and 2 of the Appendix C survey.

Evaluator comments:

I would clarify the question to read, “Have there been any changes in the reasons that the bank would seek a merger or acquisition following the global financial crisis of 2000?”

Research Question Validity? Y N

Yes. As suggested for revision.

5. How has the bank's tangible common equity ratio changed the likelihood of a merger or acquisition following the financial crisis of 2008?

The bank's tangible common equity ratio was examined as an indicator for the likelihood of a merger. This ratio was calculated for the years 2003 through 2007 and then compared to the values obtained from the 2009 through first quarter 2011 fiscal year numbers. The tangible common equity ratio was formed by dividing tangible common equity by assets.

Evaluator Comments:

The tangible common equity ratio measures the bank's relative level of capital. All banks need a minimum level of capital to do business. I think what you are asking is, has the bank's capital level decreased as a result of the financial crisis of 2008 to the point that it would consider a merger to strengthen the ratio? Alternatively, does it have sufficient capital to possibly take advantage of acquisition possibilities created by the financial crisis?

Research Question Validity? Y N

Yes.

6. How has the bank changed its technology expenditure portfolio following the financial crisis of 2008?

This variable was measured by comparing the technological expenditures in each of the years 2003 through 2007. These outlays were compared with the expenditures of 2009. Technological capability was measured as the total investments in equipment and systems divided by total assets. This information

was obtained from the bank's annual report. Survey question 3 and 4 also address this issue.

Evaluator Comments:

I'm not sure of the relevance of this question unless a correlation is drawn between the level of technology expenditures and banks that have survived the crisis. Perhaps one of the referenced dissertations?

Research Question Validity? Y N

No. Needs clarified.

7. How do customers view the reputation of the bank following the financial crisis of 2008?

Reputation was calculated as the total deposits of the organization, Green Bank, to the total deposits of the banks in the region. As before, this value was compared over a number of years; 2003 through 2007 and was compared with fiscal year 2009 through first quarter 2011 numbers.

Evaluator Comments:

Deposit growth or decline would be one indication of customer perception of the institution. May also however just indicate perception of the industry in general. I think you help to separate this possibility by measuring the subject bank's deposits relative to their competitors.

Research Question Validity? Y N

Yes.

8. How has the bank changed its board member mix to in order to maintain expected performance following the financial crisis of 2008?

The composition of the board of directors of Green Bank was compared between two time periods. The time periods considered were fiscal year 2007 and fiscal year 2010. These fiscal years were immediately before and one year after the current financial crisis. Survey question 8 also addresses this question.

Evaluators Comments:

Many banks found that they had inadequate expertise on their boards and among their management teams during the crisis. Good question.

Research Question Validity? Y N

Yes.

9. How will the regulatory changes enacted by the federal government help Green Bank remain solvent going forward?

For this study, the company CEO was asked whether he thinks the new regulation will help his bank and the commercial banking sector in general through this current crisis. Survey questions 5 and 6a-f gathered this information.

Evaluator Comments:

A better way to phrase this question might be "will the regulatory changes . . . ."

Many banks feel that the reactive legislation enacted by Congress, specifically, the Dodd-Frank legislation will actually hinder their relative solvency.

Research Question Validity? Y N

Yes. Suggestion for re-phrasing.

10. How has the common stock price for the bank changed following the financial crisis of 2008?

The stock price was trended from 2003 through the present reporting period. Also, the company Chief Executive Officer was asked his opinion on the vale of the company stock in the future. This represents survey question 7. Green Bank stock price was trended with two banks that took TARP and two that did not.

Evaluator Comments:

Good question and analysis proposal.

Research Question Validity? Y N Yes

Comments to Questions – Prepared by Michael D. Peduzzi, CPA

EVP/CFO – Union National Financial Corporation

1. How have bank solvency ratios changed following the global financial crisis of 2008?

Financial ratios equity/assets, equity/risk adjusted assets, and total capital / total risk adjusted assets was formed and compared with acceptable levels of 5%, 6%, and 10% respectively or greater.

Evaluator Comments:

One "subtle" but very relevant statement above is that you refer to 5%, 6%, and 10% as "acceptable" levels (of capital) when, in fact, they are technically defined by current regulatory standards as measures of WELL-CAPITALIZED. Acceptable levels or "adequately capitalized" were once 4%, 4%, and 8%, but that now is certainly not the case. In fact, the 5%, 6%, and 10% are, for practical purposes, the new minimum levels of acceptability to banking regulators. Clearly, the view of these capital levels is something that has changed since the global financial/banking crisis.

Also, another important measure of solvency that has changed (become even more important) since the 2008 crisis, but is not specifically mentioned by you, is LIQUIDITY – that is, how much of an institution's balance sheet is in cash or investments that can be readily liquidated to cash to service its depositor's withdrawals and other business cash needs, like payroll and paying vendors. Also, if the bank does not have much relative cash on its balance sheet, how much borrowing capacity does it have available from the FED or other banks? The reason liquidity is important is that some banks that failed had asset value above their liabilities (and, thus, a positive net worth), but such value was tied up in unsalable or slowly repaying real-estate-backed loans . . . like 30 year residential mortgage loans . . . and, thus, the institutions did not have enough cash to service its depositors or vendor relationships or FDIC insurance payments, causing them to fail or to be taken over before they failed.

Research Question Validity? Y N

Yes – valid, considering possible need to expand the content of the information gathered/analyzed based upon comments above.

2. How has Green Bank changed its solvency indicators following the crisis of 2008 as compared to the years 2003-2007?

a) The interest rate spread between market yield on bank debt issues such as CDs and the market yield on government securities of the same maturity were examined.

This data can be collected from the bank website and then the Treasury Department website for the yield on the government issued debt.

b) The ratio of a bank's stock price to its annual earnings per share was examined. These numbers can be obtained from the bank website.

c) The ratio of equity capital (net worth) to total assets held by the bank was examined.

d) The ratio of purchased funds to total liabilities was examined. Purchased funds include short term uninsured deposits from other banks, corporations, and government entities.

e) The ratio of equity capital to total assets was examined.

Evaluator Comments:

Ratio's c) and e) are the same.

I would add, in place of the redundant e), the ratio of "cash-and-cash equivalents" to "total assets" as a very high-level indicator of the bank's ability and/or need to have more cash available for managing possible stress on the bank (posed by increased deposit withdrawals by customers).

Relative to d), short-term borrowings from other banks are referred to as "Federal Funds Purchased." If Green Bank had excess solvency/funds; they would lend them to other banks, and refer to them as "Federal Funds Sold." Short-term borrowings for corporations and government entities are often referred to as "Securities Sold Under Repurchase Agreements" and require collateralization--by some of the bank's investments--and thus do not really improve the overall liquidity of the bank (since the bank could effectively generate the cash borrowed by instead selling investments). The reason "Repurchase Agreement" borrowing is done versus liquidating investments is that the investments yield higher than the

interest cost of the borrowed funds, so the bank can still earn net interest income, just a smaller amount.

Research Question Valid? Y N

Yes. With considerations noted above.

3. How has Green Bank changed its financial slack profile in response to the exogenous shock initiated by the global financial crisis of 2008?

Financial slack is defined as the capital ratio, which is total equity divided by total assets. The capital ratio was collected over the years 2003 through 2007. Then the capital ratio was collected for fiscal year 2009.

Evaluator Comments:

Question and analysis are relevant. The capital measures would indicate how well, from a fundamental safety and soundness standpoint, the institution has survived the shock; however, as important and maybe even a more relevant a measure of FCB's "financial slack" is (1) how much of a liquidity safety net is maintained on the balance sheet (i.e., how much of a deposit runoff could they handle with their cash on hand), and (2) how much off-balance sheet resources do they currently disclose . . . lines of credit that they can draw on from other banks . . . and how has this availability changed since the crisis. Many of the largest banks (PNC, Citi, etc.), and the Federal Home Loan Bank of Pittsburgh (FHLB) have reduced the amount of the interbank credit lines they have provided to regional and smaller banks.

Research Question Validity? Y N

Yes. With considerations noted above.

4. For what reasons will the bank seek a merger or acquisition following the global financial crisis of 2008?

This question was examined by direct questioning of the bank CEO and corresponds to question 1 and 2 of the Appendix C survey.

Evaluator comments:

The nature of the question is fine and relevant . . . you may consider revising it as I think the angle that you are trying to get at is "Has the Bank changed it's strategy related to merger and acquisition transactions following the global financial crisis of 2008?"

Research Question Validity? Y N

Yes.

5. How has the bank's tangible common equity ratio changed the likelihood of a merger or acquisition following the financial crisis of 2008?

The bank's tangible common equity ratio was examined as an indicator for the likelihood of a merger. This ratio was calculated for the years 2003 through 2007. These values were then compared to the values obtained from the 2009 through first quarter 2011 fiscal numbers. The tangible common equity ratio was formed by dividing tangible common equity by assets.

Evaluator Comments:

This is an interesting question, because referencing the TCE ratio also speaks to the balance sheet mix of the Bank, and how much intangible assets and goodwill it may already be carrying. The question implies a need to address one or two issues: (1) has or will the Bank need to write-down and record losses on existing

intangible assets on its books that may recue its interest in doing more acquisitions at this time, or (2) does the Bank feel that other target banks are undervalued in this post-global-financial-crisis environment, making the Bank more active in seeking to expand via merger and acquisition?

Research Question Validity? Y N

Yes.

6. How has the bank changed its technology expenditure portfolio following the financial crisis of 2008?

This variable was measured by comparing the technological expenditures in each of the years 2003 through 2007. These outlays were compared with the expenditures of 2009. Technological capability was measured as the total investments in equipment and systems divided by total assets. Survey question 3 and 4 also address this issue.

Evaluator Comments:

This is not addressing as direct and overt an indicator as the other questions, but this would be an indirect indicator of the Bank's plan to grow (i.e., a bank set on staying out, or even possibly selling, would not invest in a lot of new technology hardware or software upgrades; on the other hand, one looking to expand--either organically or through merger/acquisition--would look to expand its capacity to handle the new growth). I like this question . . . it is looking beneath the obvious to find another relevant indicator. It shows depth to your research and inquiry beyond below the surface.

Research Question Validity? Y N

Yes.

7. How do customers view the reputation of the bank following the financial crisis of 2008?

Reputation was calculated as the total deposits of the organization, Green Bank, to the total deposits of the banks in the region. As before, this value was compared over a number of years; 2003 through 2007, and was compared with fiscal year 2009 through first quarter 2011.

Evaluator Comments:

Not just deposit growth or decline, but deposit MARKET SHARE or decline, would be a reasonable measure of customer interest in (and thus reputation of) the institution. With the "flight to quality" and away from the stock market after 2008, many banks have seen deposit growth. A potential indicator of the perceived reputation would be, was FCB able to maintain or gain deposit market share post-crisis?

Research Question Validity? Y N

Yes.

8. How has the bank changed its board member mix to in order to maintain expected performance following the financial crisis of 2008?

The composition of the board of directors of Green Bank was compared between two time periods. The time periods considered were fiscal year 2007 and fiscal year 2010. These fiscal years were immediately before and one year after the current financial crisis. Survey question 8 also addresses this question.

Evaluators Comments:

Good subject to address; however, I might change the question to eliminate the words “to in order to maintain expected performance” as performance is not alone with the Board, but more with management. Further, I may expand it to address about both Board member mix and key management positions/mix. Many banks found that they had inadequate financial management expertise, or executives that were “book smart” and motivational but who had not personally dealt with a significant banking/financial crisis in their career.

Research Question Validity? Y N

Yes.

9. How will the regulatory changes enacted by the federal government help Green Bank remain solvent going forward?

For this study, the company CEO was asked whether he thinks the new regulation will help his bank and the commercial banking sector in general through this current crisis. This information was gathered in survey questions 5 and 6a-f.

Evaluator Comments:

I might expand the question to state “help or hurt” as many Bankers and bank industry observers/analysts believe recent regulation will both reduce bank income/fees and make banks more costly to operate (to meet all the new regulations); thus, a higher cost and cash out flowing, and lower yielding, business/industry.

Research Question Validity? Y N

Yes.

10. How has the common stock price for the bank changed following the financial crisis of 2008? The stock price was trended from 2003 through the present reporting period. Also, the bank Chief Executive Officer was asked his opinion on the vale of the company stock in the future. This represents survey question 7. The Green Bank stock price was trended with two banks that took TARP and two that did not.

Evaluator Comments:

A good measure to analyze the change in FCB post-crisis. Certainly, along with dividends, stock price would be most important to investors in FCB. I might expand it to address both the change in stock price and dividend payment rate.

Research Question Validity? Y N

Yes

The following comments were provided by Jeffrey Tompkins.

1. How have bank solvency ratios changed following the global financial crisis of 2008?

Financial ratios equity/assets, equity/risk adjusted assets, and total capital / total risk adjusted assets were formed and compared with acceptable levels of 5%, 6%, and 10% respectively or greater.

Evaluator Comments:

The three key capital ratios are Tier 1 Leverage. Tier 1/RWA and Total/RWA. These can be found in the call report. Not sure if FCFC took TARP but if they did their capital ratios will pop in late 2008 or early 2009. Give some thought as to how they will repay this and the impact on their capital when they do.

Research Question Validity? Y N

Yes, this question is valid.

2. How has Green Bank changed its solvency indicators following the crisis of 2008 as compared to the years 2003-2007?

a) The interest rate spread between market yield on bank debt issues such as CDs and the market yield on government securities of the same maturity was examined.

This data can be collected from the bank website and then the Treasury Department website for the yield on the government issued debt.

b) The ratio of a bank's stock price to its annual earnings per share was examined.

c) The ratio of equity capital (net worth) to total assets held by the bank was examined.

d) The ratio of purchased funds to total liabilities was examined. Purchased funds include short term uninsured deposits from other banks, corporations, and government entities.

e) The ratio of equity capital to total assets was examined.

Evaluator Comments:

For a) you may want to focus on the trend in the Net Interest Margin or further break it out and review asset yields and cost of funds. You can then compare this trend line to changes in the yield curve for government securities.

For c) be careful to define or differentiate book equity from tangible equity. This is a big issue for FCFC

c) and e) appear to be the same question

Research Question Valid? Y N

Yes. With corrections noted above.

3. How has Green Bank changed its financial slack profile in response to the exogenous shock initiated by the global financial crisis of 2008?

Financial slack is defined as the capital ratio, which is total equity divided by total assets. The capital ratio was collected over the years 2003 through 2007 and then compared with the capital ratio collected for fiscal year 2009 through first quarter 2011.

Evaluator Comments:

I have never heard the term Financial Slack. This question looks the same as Question #1.

Research Question Validity? Y N

No, same question as #1.

4. For what reasons will the bank seek a merger or acquisition following the global financial crisis of 2008?

This question was examined by direct questioning of the bank CEO and corresponds to question 1 and 2 of the Appendix C survey.

Evaluator comments:

I would consider rephrasing this question to determine what factors the bank considered before the global crisis versus after the global crisis in relation to mergers or acquisitions.

Research Question Validity? Y N

Yes. As suggested for revision.

5. How has the bank's tangible common equity ratio changed the likelihood of a merger or acquisition following the financial crisis of 2008?

The bank's tangible common equity ratio was examined as an indicator for the likelihood of a merger. This ratio was calculated for the years 2003 through 2007 and then compared to the values obtained from the 2009 through first quarter 2011 fiscal numbers. The tangible common equity ratio was formed by dividing tangible common equity by assets.

Evaluator Comments:

Question is valid.

Research Question Validity? Y N

Yes.

6. How has the bank changed its technology expenditure portfolio following the financial crisis of 2008?

This variable was measured by comparing the technological expenditures in each of the years 2003 through 2007. These outlays were compared with the expenditures of 2009. Technological capability was measured as the total investments in equipment and systems divided by total assets. Survey question 3 and 4 also address this issue.

Evaluator Comments:

I do not see the relevance of this question unless you are tying it to cost reductions and an unwillingness of banks to invest for the future to maximize current earnings. Also, I am not sure your defined ratio will provide meaningful comparative data.

Research Question Validity? Y N

No.

7. How do customers view the reputation of the bank following the financial crisis of 2008?

Reputation was calculated as the total deposits of the organization, Green Bank, to the total deposits of the banks in the region. As before this value was compared over a number of years; 2003 through 2007 was compared with fiscal year 2009 through first quarter 2011.

Evaluator Comments:

I do not think this question can be answered by just looking at deposit growth or market share. The flood of deposits to the banking sector from the financial markets in 2009-2010 will skew the results of a deposit only analysis. You may need to get internal marketing results from the bank if available or develop a correlation analysis using market share, stock price and other factors.

Research Question Validity? Y N

No

8. How has the bank changed its board member mix to in order to maintain expected performance following the financial crisis of 2008?

The composition of the board of directors of Green Bank was compared between two time periods. The time periods to be considered were fiscal year 2007 and fiscal year 2010. These fiscal years were immediately before and one year after the current financial crisis. Survey question 8 also addresses this question.

Evaluators Comments:

Good Question!!

Research Question Validity? Y N

Yes.

9. How will the regulatory changes enacted by the federal government help Green Bank remain solvent going forward?

For this study, the bank CEO was asked whether he thinks the new regulation will help his bank and the commercial banking sector in general through this current crisis. This information was gathered in survey questions 5 and 6a-f.

Evaluator Comments:

Good question. You may want to expand the question however to incorporate the big changes enacted by the recent financial reform law to ensure you get the answers you want.

Research Question Validity? Y N

Yes.

10. How has the common stock price for the bank changed following the financial crisis of 2008?

The stock price was trended from 2003 through the present reporting period. Also, the bank Chief Executive Officer was asked his opinion on the vale of the company stock in the future. This represents survey question 7. The stock price was trended with two banks that took TARP and two that did not.

Evaluator Comments:

Good question. May want to also compare FCFC to an index of similar size banks.

Research Question Validity? Y N

Yes.

What follows is a tabulated overview of the results from the pilot study. Opinions of each reviewer were given for each research question. If two or more of the reviewers believed the research question was not valid, it was dropped from the study, as was the case with research question 6. Survey questions that were asked of bank executives were also modified based on reviewer comments.

Table 1

Results of the Pilot Study

Research Question	Reviewer Brooks Valid	Reviewer Peduzzi Valid	Reviewer Tompkins Valid	Question Accepted with Modification Question will Remain In Study
1	Y	Y	Y	Y
2	Y	Y	Y	Y
3	Y	Y	N	Y
4	Y	Y	Y	Y
5	Y	Y	Y	Y
6	N	Y	N	N
7	Y	Y	N	Y
8	Y	Y	Y	Y
9	Y	Y	Y	Y
10	Y	Y	Y	Y

Follow-Up Questions for the Green Bank Chief Executive Officer

After the original data for this study were collected and analyzed, the researcher decided that more follow-up information was needed. As a result, follow up questions were developed and piloted with the intent to have the bank CEO address them during a

second interview. The pilot study was conducted by employing only John Brooks as a reviewer. Original questions with reviewer comments in italics are listed below.

Questions for the Follow-Up Interview with Green Bank Chief Executive Officer

1. Green Bank has capital ratios well above government standards. These are the Tier 1 Leverage Ratio, Tier 1 Risk-Based Capital Ratio, and Total Risk-Based Capital Ratio. Describe what you consider were the major executive decisions that were made over the past five years, which resulted in such healthy ratios for your bank.

   Reviewer Response: Good question.
2. The recent process of raising capital through the sale of common stock seems to have caused your bank's stock price to fall to half its value. What impact has these stock prices had on your bank? Describe how the sharp drop in dividend payout impacted the bank. With the current stock price relatively low and along with your healthy capital ratios, can your bank avoid a hostile takeover from a rival bank?

   Reviewer Response: You've got at least two questions here. Have there been any negative shareholder implication resulting from dilution because of your stock issuance? Do you think there is now a risk of a hostile takeover attempt because of the low price and high capital?
3. Describe how federal funds purchased and tax and loan notes contribute to your bottom line. Are these funds more difficult to obtain following the 2008 financial crisis?

   Reviewer Response: I would scratch this one. Off base.
4. What major strategy did Green Bank uses to maintain healthy capital in excess of that required by regulators. What is your overall guiding principle for such a successful strategy?

   Reviewer Response: You've already covered this one in question 2. You might ask, what other than stock issuance is contributing to capital ratios?
5. Describe three major indicators that your management team considers when contemplating the acquisition of another bank.

Reviewer Response: OK.

6. Previously, you referred to the 3-6-3 rule of banking. With the current banking environment and the prospect of new government regulations forthcoming, how would you describe the current work environment for bank executives and board members?

   Reviewer Response: Scratch the word "work" and just ask about environment.

7. Currently, Green Bank is a Southwestern Pennsylvania bank. Over the next 10 years, describe the footprint for the bank. Will it still be primarily Southwestern Pennsylvania?

   Reviewer Response: Good question.

8. With regards to mergers, how big is too big? Would Green Bank ever become too big?

   Reviewer Response: Change to what do you think the optimal size for Green Bank would be?

9. Describe two regulations that should have been in place in 2008 that might have prevented the crisis that existed then or even today.

   Reviewer Response: Good question.

10. Describe one decision that you have made recently that will have a profound impact on the bank over the next five years.

    Reviewer Response: Good question.

11. With regards to the new managers and board members that joined Green Bank after 2008, what kind of policies did they put in place to help the bank remain successful?

    Reviewer Response: Reword to focus more on "what changes have been initiated by new BOD members and employees that have joined Green Bank since 2008?"

Revised Questions for Follow-Up Interview with Green Bank

Chief Executive Officer

Last February I had the opportunity to interview you and discuss issues relating to Green Bank's solvency following the financial crisis of 2008. After analyzing your

interview data, banking documents, federal reports, etc, I discovered some gaps in my analysis.

I know that your time is valuable, but could I meet with you or a designee for a follow up interview to obtain some vital information for my study.

The following questions will be the focus of the interview. I can be contacted by phone at 724-468-1142 or my e-mail address at djkozyro@yahoo.com.

1. Green Bank has capital ratios well above government standards. These are the Tier 1 Leverage Ratio, Tier 1 Risk-Based Capital Ratio, and Total Risk-Based Capital Ratio. Describe what you consider were the major executive decisions that were made over the past five years, which resulted in such healthy ratios for your bank.
2. The recent process of raising capital through the sale of common stock seems to have caused your bank's stock price to fall to half its value. Have there been any negative shareholder implication resulting from dilution because of your stock issuance? Describe how the drop in dividend payout impacted the bank. Do you think there is now a risk of a hostile takeover attempt because of the low price and high capital?
3. What other than stock issuance is contributing to capital ratios?
4. Describe three major indicators that your management team considers when contemplating the acquisition of another bank.
5. Previously, you referred to the 3-6-3 rule of banking. With the current banking environment and the prospect of new government regulations

forthcoming, how would you describe the current environment for bank executives and board members?

6. Currently, Green Bank is a Southwestern Pennsylvania bank. Over the next 10 years, describe the footprint for the bank. Will it still be primarily Southwestern Pennsylvania?
7. With regards to mergers, what do you think is the optimal size for Green Bank?
8. Describe two regulations that should have been in place in 2008 that might have prevented the crisis?
9. Describe one decision that you have made recently that will have a profound impact on the bank over the next five years.
10. What changes have been initiated by new board of director members and managers that have joined Green Bank since 2008?

CHAPTER 4

RESULTS OF THE STUDY

The purpose of this study was to determine how a rural commercial bank, which is referred to as Green Bank to ensure anonymity, remained solvent during the banking crisis of 2008 and how it has remained solvent during the ensuing years. Solvency is a condition where a bank can conduct its normal operations without any assistance such as government funding in the form of the Troubled Asset Relief Program or (TARP), which was instituted following the banking crisis of 2008. This program allowed the federal government to buy a bank's preferred stock in exchange for money. Money obtained by banks through the TARP program could then be lent out so the bank could resume its normal operations. If a commercial bank is found to be insolvent by government regulators, it is shut down and depositors are compensated in accordance with provisions of the Federal Deposit Insurance Corporation (FDIC). This insurance compensates each depositor of a failed bank by giving them money in the amount of their deposits up to established limits. Currently, bank depositors are guaranteed up to $250,000 per account in the event their bank experiences a financial collapse (Deposit Insurance, 2011).

In order to conduct this study, nine research questions were formulated by the researcher and used to determine current solvency of Green Bank and the likelihood of future solvency. During this study, two types of data were collected: quantitative data from annual reports, Internet databases, and financial websites, as well as qualitative data obtained from interviews with the Chief Executive Officer (CEO) and the Operations Vice President. During the course of this study, Green bank was found to be solvent according to federal regulators and is likely to remain solvent for the foreseeable future.

Determination of Current Solvency

Research question one asked, "How have the solvency ratios for the bank changed following the global financial crisis of 2008?" The value of these ratios determined whether or not Green Bank was currently solvent. If the bank's ratios are higher than established levels, federal regulators will consider that bank solvent. The three capital ratios used in this study to determine the solvency of Green Bank were the Tier 1 Leverage Ratio defined as (equity/assets) which must be at least 5%, the Tier 1 Risk Based Capital Ratio defined as (equity/risk adjusted assets) which must be at least 6%, and the Total Risk Based Capital Ratio defined as (total capital/ total risk adjusted assets) which must be at least 10% for Green Bank to be considered solvent.

To proceed with this analysis, one must understand the Tier 1 Leverage Ratio. This ratio can be thought of as a measure of balance sheet economic leverage (Breuer, 2000). Leverage allows an institution to increase the potential gain or loss on an investment beyond what would be possible through a direct investment of its own funds (D'Hulster, 2009). The leverage ratio percentage is defined as the reciprocal of the leverage multiplier. For example, a leverage ratio of 5% would allow a bank to increase its gain or loss on an investment by 1/0.05 or a factor of 20 with 0.05 representing the decimal value of 5%. In the case of an individual, $100 in assets would require $5 to be held in cash to cover costs if they occur. When regulators set these ratios, they are in a sense setting a limit on the severity of financial losses for a bank in the event these losses occur. Regulators that set values for ratios like the Tier 1 Leverage Ratio are more concerned with limiting losses by banks rather than putting a cap on their profits because heavy downside losses could affect the entire banking industry.

Capital ratios have long been a valuable tool for assessing the safety and soundness of banks. The three capital ratios used in this study are constructed from two components. The numerator in the ratio is a measure of the absolute amount of capital (money) of a bank and is inversely related to the probability of failure. For example, the more money a bank has on hand, the less of a chance the bank will become insolvent. For comparison, in September of 2011, U.S. banks had 100% more capital, approximately $550 million, than pre-crisis levels because of the new capital requirements required by regulators (The Clearing House, 2011). The denominator in the ratio represents the absolute level of risk the bank has assumed. Regulators choose a minimum ratio level called a backstop level, which is the ratio value below which the bank faces a high probability of failure (Estrella, Park, & Peristiani, 2000). For this study, backstop levels were 5% for the Tier 1 Leverage Ratio, 6% for the Tier 1 Risk Based Capital Ratio, and 10% for the Total Risk Based Capital Ratio. When backstop levels are reached, regulators close the institution.

Another way to think about these ratios for banks, especially the leverage ratio, is its cash and equity on hand. If a bank has $1000 in assets, then it must have a minimum of $50 in cash and common stock (equity) on hand and ready for use to pay depositors and satisfy the 5% requirement. Bank assets could include loans and investments from other institutions such as certificates of deposit (CDs). When banks fall below this 5% level, terrible things begin to happen. First, the bank president might try to increase capital (money) by selling preferred stock or common stock depending on which option was more viable. Also, reducing dividend payout to common shareholders could also be used to preserve capital. Lastly, workforce reduction could be used to preserve capital

and maintain capital ratios. This involves employee layoffs, which would allow a bank to save money on payroll.

Capital ratios were established by regulators to allow banks safe operation during non-crisis times. If a crisis occurs and there is a run on a bank, maintaining regulator-established ratios will not help. With capital ratios of 5%, 6%, and 10% as used in this study, only a small percentage of money is held in reserve by each bank. If every depositor or even a large number of them demand their money in a short period of time, a bank cannot cover this demand and must close their doors. This would happen even if the bank had acceptable capital ratios and it happened extensively during the Great Depression.

As will soon be seen, capital ratios for Green Bank are significantly higher than those required by government regulators. There are a number of reasons for this. First, Green Bank raised $186 million in capital through the issuance of two separate common stock sales. This capital was used to fund existing loans already on the books in 2008 and to cover losses from sub-prime mortgages in 2009. Also, Green Bank reduced its dividend payout from 68 cents per share in 2008 to 12 cents per share in 2010, which saved the bank $38 million per year. Lastly, Green Bank removed risky assets from its balance sheet to improve its capital reserves. Risky assets refer to municipal debt such as bonds issued by cities and states. In this case, Green Bank sold its investment in Harrisburg municipal bonds, which resulted in a gain of $160 million in capital (Annual Report, 2010). When asked why these controversial actions were taken, the Green Bank CEO stated “capital ratios were boosted using these methods so the bank could survive in the event a double dip recession hit the United States economy.”

Current Financial Ratios for Green Bank

Green Bank currently has a Tier 1 Leverage Ratio of 11.1% (Supplemental Financial Information, 2010), which is well above the acceptable backstop level of 5%. With an 11.1% leverage ratio, the bank can experience a loss or gain on assets of 1/0.111 or a factor of 9. In other words, the bank has assets valued at nine times the amount of equity (cash and common stock) it holds. This situation can also be thought of as the bank having $111 (equity) for every $1000 (assets), which results in the Tier 1 Leverage Ratio of 11.1%. For a comparison with large, well-known banks, the most recent Tier 1 Leverage Ratio for Bank of America is 7.25% (Bank of America Capital Ratios, 2011) and for J P Morgan is 5.49% (J. P. Morgan Capital Ratios, 2011). As can be seen, Green bank has a Tier 1 Leverage Ratio much higher than the comparison banks J. P. Morgan and Bank of America and much higher than the backstop level of 5%. For historical reference, the Green Bank Tier 1 Leverage Ratio in 2009 was 9.2% (Capital Ratios, 2009). With a current leverage ratio of 11.1% and the fact that it improved over the 2009 level is an indicator of current solvency for Green Bank.

The second capital ratio examined for research question one was the Tier 1 Risk Based Capital Ratio which is defined as the ratio of equity to risk adjusted assets. According to current information from financial reports for Green Bank, this ratio is 12.5% (Supplemental Financial Information, 2010), which is twice as great as the required backstop value 6%. The Risk Based Capital Ratio is similar to the leverage ratio except that the denominator in the equation is risk-adjusted assets. In this case risk adjusted assets refers to credit risk or an unsecured loan. With a Tier 1 Risk Based Capital Ratio of 12.5%, the leverage multiplier is 1/0.125 or a factor of 8. This means the

bank has eight times the assets as it does cash and common stock. Alternatively, the bank has $125 (equity) for every $1000 (risk based assets). This multiplier is lower than the Tier 1 Leverage Ratio because there is risk associated with this asset class. To compare Green Bank with others well known banks, the most recent Bank of America Risk Based Capital Ratio is 11.32% (Bank of America Capital Ratios, 2011) and for J. P. Morgan this ratio is 9.32% (J. P. Morgan Capital Ratios, 2011). Both of the values are less than Green Bank. Simply put, Green Bank has a Risk Based Capital Ratio value that is twice as high as the backstop value of 6% and higher than its 2009 value of 10.5% (Capital Ratios, 2009). The fact that this ratio increased over the 2009 value and is greater than the backstop level required by regulators is an indicator of current solvency.

Finally, the Total Risk Based Capital Ratio which is defined as total capital divided by total risk adjusted assets for Green Bank is 13.7 % (Supplemental Financial Information, 2010), which is 3.7% greater than the required backstop level of 10%. In this ratio, total capital was considered which includes common stock, preferred stock, convertible debt (bonds that can be turned into common stock), and cash on hand. For Green Bank, there were no preferred stock shares outstanding or convertible debt so total capital just consisted of common stock valued at $691 million and $77 million of cash on hand. With a required ratio of 10%, a multiplier of 1/0.1 or a factor of 10 is allowed by regulators. This means a bank holds assets valued at 10 times their total capital holdings. Again, this multiplier is lower than the leverage ratio because risk is factored in. With a total risk based capital ratio of 13.7%, Green Bank holds 1/0.137 or 7.3 times the assets as it does capital. Another way to think of this is the bank has $137 (cash and common stock) for every $1000 (risk adjusted assets). Again for comparison, the Total Risk

Based Capital Ratio for Bank of America and J. P. Morgan are 15.98% (Bank of America Capital Ratios, 2011) and 13.12% (J. P. Morgan Capital Ratios, 2011) respectively. In this case Bank of America has a slightly higher value for total risk based capital ratio but all three banks have values greater that the backstop value of 10%. The Total Risk Based Capital for Green Bank in 2009 was 11.5% (Capital Ratios, 2009). This is the final indicator that demonstrates Green Bank is currently solvent.

In order to put these ratios in terms that a family or individual would encounter, think of $100 in assets. Assets for and individual or family could represent cars or a house. With this value of assets ($100), the family would have to have a minimum amount of cash available to meet backstop values. For the ratios listed above for Green Bank, a family would have $11.10, $12.50, and $13.70 cash on hand for $100 in assets.

Predicting Future Solvency for Green Bank

The condition of continued solvency for a commercial bank going forward is not as easy to determine. While current solvency is determined by examining selected capital ratios, predicting future solvency required the examination of a variety of data including financial ratios, stock price and dividend payout trends, and sentiments of the senior bank executives. There was no instrument to make the determination of future solvency of Green Bank so one was created especially for this study. Once constructed, the survey questions were piloted by three banking experts to establish their validity. Research questions two through nine collected this data and the answers provided a clearer picture of future solvency for Green Bank.

Research question two asked, "How has the bank changed its solvency indicators following the crisis of 2008 as compared to the years 2003-2007?" Question two focused

on the analysis of future solvency by tracking four ratios, which have in the past been indicators of future performance, and therefore solvency for a bank. Data to form these ratios were collected over a period of time from 2003 through the first quarter of 2011. This time frame included normal, non-crisis values of these ratios, to compare with the numbers collected during and just after the financial crisis of 2008. The four ratios examined for this research question were market yield of Green Bank's six-month certificate of deposits (CD) rates vs. six- month government securities, stock price to earnings per share, equity capital (net worth) to total assets, and purchased funds (short term deposits from other organizations) to total liabilities.

A commercial bank's tendency to remain solvent can be understood by analyzing each of the aforementioned financial ratios. The first ratio examined for research question two was bank CD rates vs. government securities of the same duration. Although the term ratio is used, this metric is more of a comparison than a ratio. Data for the six-month CD rates were obtained from the Vice President of Operations during a formal interview. In addition to this, he also provided the six-month treasury yields for comparison during the same time frame. Table 2 shows the comparison of these two values.

Table 2

Six Month Certificate of Deposit Rates for Green Bank Compared with Treasury Yield

Year	Green Bank Rate	Treasury Yield	Percentage Difference
January 2003	1.56	1.22	0.34
July 2003	0.89	0.97	-0.08
January 2004	0.85	0.98	-0.13
July 2004	1.16	1.70	-0.54
January 2005	1.72	2.66	-0.94
July 2005	2.81	3.51	-0.70
January 2006	3.24	4.56	-1.32
July 2006	4.39	5.15	-0.76
January 2007	4.57	5.14	-0.57
July 2007	4.13	4.98	-0.85
January 2008	4.25	2.06	2.19
July 2008	2.28	1.87	0.41
January 2009	1.69	0.35	1.34
July 2009	1.17	0.25	0.92

Traditionally, banks set CD rates by starting with the treasury yield and then adding a risk premium to the treasury rate. This risk premium is an indicator of how stable a bank is. If the risk premium is high, then the issuing bank is seen as risky and must offer a higher interest rate to attract investor. On the other hand, is a bank is strong and nowhere near insolvency, the risk premium will be low which indicates stability. During a formal interview with the Operations Vice President, he stated "Green Bank does not use the treasury yields as a basis for establishing CD rates." By this he means Green Bank CD rates are not determined by adding a certain percentage to the treasury yield but instead Green Bank sets six-month CD rates to acquire the investment money it needs at the time it needs it. In looking at Table 2, there are several time periods in which Green Bank 6-month CD rates are less than Treasury yields of the same maturity.

Between July 2003 July 2007 the rates for Green Bank 6-month CDs are less than the Treasury yield. January 2003 and January 2008 through July 2009 are timeframes where Green Bank CD rates are higher than the Treasury yield.

The significance of setting CD rates in this manner can be understood from the following example. United States Treasury bills are considered essentially risk free. As a result, CD rates above the treasury yield a particular bank charges is based on how much risk is associated with putting money in that bank vs. buying government securities. Higher risk premiums added by banks to their CDs are indicators that the bank is becoming less financially sound. For example, if the treasury yield for a six-month security is 1% and a particular bank sets their CD rate at 5%, there is a significant risk associated with investing in that bank. Alternatively, if the treasury yield for a six-month security is 1% and a bank offers a CD at 0.5%, then that bank is seen to be sound because there is no risk premium, percentage above treasury, associated with the bank.

Green Bank does not use the method of adding a risk premium to the Treasury yield to establish its CD rates and this is an indication of future solvency. The Operations Vice President sets the CD rates to attract the investment money the bank needs, when it needs it. Risk premiums do not come into play. The ability to set low CD rates in this manner is an indicator of low investment risk and therefore a strong, solvent bank.

The second ratio examined for research question two was stock price to earnings per share. Traditionally, this ratio will drop if investors believe that the bank is undercapitalized for the risk it has assumed. Undercapitalized means a bank is involved in various risk ventures and may not have the money on hand to cover those losses if they occur. Risk ventures in this case refer to sub-prime mortgage assets and municipal debt

held by Green Bank. Table 3 shows the stock price/earnings per share for Green Bank between the years 2003 and first quarter 2011.

Table 3

Stock Price to Earnings Per Share for Green Bank

Year	Stock Price (U.S. Dollars)	Earnings Per Share (EPS) (U.S. Dollars Per Share)	Stock Price/EPS
2003	14.32	0.9	15.91
2004	15.4	0.58	26.55
2005	13.03	0.83	15.7
2006	13.5	0.74	18.24
2007	10.8	0.63	17.14
2008	12.39	0.58	21.36
2009	4.74	-0.24	-19.75
2010	7.36	0.25	29.44
2011 Q1	6.58	0.25	26.32

Note. Green Bank stock prices were found on Yahoo! Finance and retrieved September 6, 2011 from http://finance.yahoo.com/q/hp?s=FCF+Historical+Prices. Earnings per share data were retrieved September 6, 2011 from the NASDAQ website http://www.nasdaq.com/aspx/revenueepssumary.aspx?symbol=FCF&selected=FCF.

A precipitous drop in this ratio can be seen following the financial crisis of 2008. In fact, the ratio of stock price to earnings per share reached a negative value because of the losses in the sub-prime real estate markets. Based on this trend of a decreasing stock price to earnings ratio, it can be said that the investors believed the bank was undercapitalized for the risks it had assumed. However, due to the nature of this crisis, other factors affected this ratio. First, Green Bank raised money (capital) through the selling of common stock. This was done because preferred stock could not be used since it was part of the TARP programs of which Green Bank did not participate. With more

common shares available to the public, Green Bank's stock price dropped. Additionally, losses from the sub-prime mortgages, which were originally thought to be sound investments, caused Green Bank's earnings to drop. The combination of these two factors caused earnings per share to drop from 21.36 in 2008 to –19.75 in 2009 thus causing a negative value for the aggregate ratio.

The third ratio trended for research question two was equity capital to total assets. Equity capital is the dollar value of the common stock price multiplied by the number of common shares outstanding. If this ratio drops, a greater risk to the bank's shareholders and debt holders may be present. Table 4 shows the trend for this ratio between the years 2003 and first quarter 2011.

Table 4

Equity Capital to Total Assets for Green Bank

Year	Stock Price (U.S. Dollars)	Shares Outstanding (Non-diluted)	Equity Capital (U.S. Dollars)	Total Assets (U.S. Dollars)	Equity Capital Total Assets
2003	14.32	60,712,020	869,396,126.40	5,189,195,000	0.1675
2004	15.4	69,868,908	1,075,981,183	6,198,478,000	0.1736
2005	13.03	69,276,141	902,668,117.20	6,026,285,000	0.1498
2006	13.5	70,766,348	955,345,698	6,043,916,000	0.1581
2007	10.8	72,816,208	786,415,046.4	5,883,618,000	0.1337
2008	12.39	74,477,795	922,779,880.10	6,425,880,000	0.1436
2009	4.74	84,589,780	400,955,557.20	6,446,293,000	0.0622
2010	7.36	104,846,194	771,667,987.80	5,812,842,000	0.1328
2011 Q1	6.58	104,859,954	689,978,497.30	5,762,366,000	0.1197

Note. Green stock prices were found on Yahoo! Finance and retrieved on September 6, 2011 from http://finance.yahoo.com/q/hp?s=FCF+Historical+Prices. Shares outstanding and the total assets numbers were found in the Green Bank Annual Reports of 2010, 2009, 2007, 2005, and 2003. Shares outstanding and total asset values for first quarter 2011 was retrieved September 6, 2011 from Investor Relations Page http://www2.snl.com/irweblinkx/Fin/aspx?annual=IID=100503.

This ratio went from 0.1436 in 2008 to 0.0622 in 2009 all because of the crisis. The decrease in common stock price was caused in part by the bank raising capital through a public offering of common stock. This sale provided the bank with an additional $100 million in capital. Fiscal year 2010 data show a significant increase in stock price when compared to the previous year but this increase in stock price was then followed by a drop in common stock price in the first quarter of 2011. In the third quarter of 2010, the bank raised an additional $86.2 million in capital through a public offering of 18.5 million shares common stock (Green Bank Annual Report, 2010). Increases in the number of common shares available to the public was certainly part of the reason all measured values based on shares outstanding decreased in value. These values include stock price, equity capital and earnings per share. When the number of common shares increased, financial ratios based on stock price decreased.

To analyze this ratio in more familiar terms, think of a bank with $1,000 in assets. In 2003, Green Bank had an equity capital to total assets ratio of 0.1675, which means the bank would have $167.50 of cash on hand for each $1,000 in assets it held. In 2011, the ratio dropped to 0.1187, which means that for each $1000 in assets, the bank had only $ 118.70 in cash on hand. The example for a family with $100 in assets is similar. Using the 2003 and 2011 values, a family with $100 in assets would require $16.75 in 2003 and $11.87 in 2011 of cash on hand. Cash reserves of this type can be used by a bank or a family to cover expenses without having to sell assets they hold.

The fourth and final ratio collected for research question two was purchased funds to total liabilities for the bank. Purchased funds in this ratio refer to short-term deposits from other institutions such as federal funds purchased and tax and loan notes (Green

Bank Annual Report, 2010). Federal funds purchased are used most often to provide adequate liquidity, or cash on hand, for a bank. Money from these funds could be used to pay off bank debt or fund new loans. Federal funds are monetary exchanges between banks at the federal funds rate and are physically located at Federal Reserve banks.

The other component of purchased funds are tax and loan notes which are tax payments by individuals and businesses that go into depository institutions rather that to the Treasury accounts at the Federal Reserve Bank. Accounts of this type help to stabilize the supply of reserves in the banking system thereby increasing the stability of financial markets (Tax and Loan Notes, 2007). Table 5 shows the values for the ratio purchased funds to liabilities.

Table 5

Purchased Funds to Total Liabilities for Green Bank

Year	Purchased Funds (U.S. Dollars)	Total Liabilities (U.S. Dollars)	Purchased Funds/ Liabilities
2003	554,133,000	3,923,572,000	0.1412
2004	796,591,000	4,858,769,000	0.1639
2005	797,148,000	5,135,736,000	0.1552
2006	500,014,000	5,472,555,000	0.0913
2007	354,201,000	5,314,830,000	0.0660
2008	1,139,737,000	5,773,101,000	0.1974
2009	958,932,000	5,807,482,000	0.1651
2010	187,861,000	5,063,065,000	0.0371
2011 Q1	155,342,000	5,010,234,000	0.0310

Note. Purchased funds and total liabilities data were found in the Green Bank Annual Report of 2010, 2009, 2007, and 2005. Purchased funds and total liability values for first quarter 2011 were retrieved September 6, 2011 from the Investor Relations Page http://www2.snl.com/irweblinkx/Fin/aspx?annual=IID=100503.

To better understand the columns in the table below, consider the following explanation. Column two in the table below represents purchased funds for the bank between fiscal year 2003 and first quarter 2011. As stated previously, the purchased funds bought by Green Bank are comprised of both federal funds purchased and tax and loan notes. Column three in Table 5 represents the total liabilities for the bank, which refers to what the bank owes other institutions or individuals. Purchased funds in this ratio are a small part of total liabilities. Lastly, column four represents purchased funds divided by total liabilities to form the desired ratio.

Trends for this ratio vary widely even though the total liability values in this ratio remained somewhat stable. Purchased funds values were the component that caused the fluctuation in this ratio. Purchased funds are not interest rate sensitive but have availability risk associated with them which means that the ability of a bank to acquire these funds does not depend on established interest rates but instead on the health of the bank. If other banks perceive the requesting bank as unstable, they may be reluctant to provide requested funds. As a result, the inability of a bank to acquire this type of funding could indicate that the bank is drifting into insolvency.

Purchased funds held by Green Bank dropped from $1,139,737,000 in 2008 to $155,342,000 in the first quarter of 2011. Money raised by this sell off purchased funds was used to fund operations of the bank and in part to cover losses from the sub-prime mortgages held by the bank. In 2010, the bank redeemed $562.1 million from the sale of purchased funds in order to pay down borrowings and better manage liquidity (money available for immediate use) (Green Bank Annual Report, 2010).

To put the buying and selling of purchased funds in more common terms, consider the following example. A bank that acquires purchased funds to maintain cash reserves is analogous to an individual borrowing money from a friend. Money obtained in this fashion would be considered a liability along with other structured debt such as a home loan or a car loan and would become part of the total amount owed to all lenders. Individuals may use this informal loan to have cash on hand without having to borrow money at established interest rates. Using the 2011 values, Green Bank had a purchased funds to total liability ratio of 0.0371, which means that if a family has $100 of liabilities (money owed to others), $3.71 of this liability would be the amount borrowed from a friend.

In summary, determining a trend for future solvency of Green Bank using these four ratios was difficult. Odd behavior exhibited by each of these ratios was caused by the uniqueness of the current crisis banks are experiencing. When looking at the ratio trends, there seems to be erratic behavior in the vicinity of fiscal year 2008. For instance, Green Bank stock price dropped significantly following fiscal year 2008, which greatly affected the stock price/earnings per share and the equity capital to total assets ratio. Increases in the number of common shares available to shareholders also contributed to the decrease in stock price, price to earnings ratios, and equity capital measurements. Purchased funds to total liabilities ratios were also affected because the bank sold purchased funds to better manage their liquidity and cover losses from risky sub-prime mortgages. The practice of selling common shares and purchased funds to manage liquidity are not normal practices for banks. They seem to be related to the uniqueness of this financial crisis.

Financial ratios of the type examined in research question two are used in normal, non-crisis situations to predict future bank performance. Current economic conditions caused by this financial crisis were anything but normal. What may have been discovered in research question two is the inability of these ratios to make solid predictions during this type of crisis. Factoring in the changes in these ratios caused exclusively by the increase in common shares further complicates the results. However, the bank obtaining capital by selling common share instead of selling preferred stock was a symptom of this crisis because the sale of preferred stock was used exclusively in the TARP program, which Green Bank did not participate. No predictions of future solvency for Green Bank can be made based on these ratios.

Research question three asked, "How has the bank changed its financial slack profile in response to the exogenous shock initiated by the global financial crisis of 2008?" Slack was used to indicate how much reserve capital was available to Green Bank over and above government guidelines. It is convenient to think of financial slack as disposable income for an individual or family which is money that could be used for vacations, investing, or anything else after all bills are paid. Slack can accrue to a family through cost cutting on frequently purchased items or an increase in family income. Table 6 shows the slack values for Green Bank between fiscal year 2003 and first quarter 2011.

Table 6

Slack Value for Green Bank

Year	Total Equity in U.S. Dollars (in thousands)	Total Assets in U.S. Dollars (in thousands)	Slack Value
2003	430,946	5,189,195	0.08305
2004	531,978	6,198,478	0.08582
2005	521,045	6,026,320	0.08646
2006	571,361	6,043,916	0.09453
2007	568,788	5,883,618	0.09667
2008	652,779	6,425,880	0.10159
2009	638,811	6,446,293	0.09910
2010	749,777	5,812,842	0.12890
2011 Q1	752,132	5,762,366	0.13050

Note. The total equity and total assets data were found in the Green Annual Report of 2010, 2009, 2007, and 2005. Total Assets value and total equity for first quarter 2011 was retrieved September 6, 2011 from Investor Relations Page http://www2.snl.com/irweblinkx/Fin/aspx?annual=IID=100503.

Slack value is defined in the banking sense as the ratio of total equity to total assets of the bank and has been gradually increasing since fiscal year 2003 for Green Bank. Overall, the trend of a higher slack value means the bank can cover bad investments if they occur and may be willing to take reasonable risks with its surplus capital to improve its performance. Being able to cover bad investments was key to a bank's survival in this most recent financial crisis. As discussed previously, the bank CEO took several steps to increase capital reserves such as issuing common stock, reducing dividend payouts, and removing risky investments from the holdings of Green

Bank. These actions were to acquire enough capital (slack) to withstand a double dip recession in the event it occurs in the future.

To better understand the concept of financial slack, consider the following example. In the year 2003, for every $1,000 in assets held by Green Bank, the bank had $83 in financial slack. Likewise, for the first quarter of 2011, slack value increased to $128.90 for that same $1,000 in assets. In the case of a family, $8.30 of disposable income would be available for each $100 in assets in 2003 and $12.89 in disposable income for each $100 in assets in the first quarter of 2011. Slack resources in each case, for the bank or the family, can be used in emergencies without having to sell assets to raise money. Because the slack value for Green Bank has increased since 2003 it has the ability to cover sudden financial losses. This ability is an indication of future solvency.

Research question number four asked, "Has there been any changed in the reason that the bank would seek a merger or acquisition to remain solvent following the global financial crisis of 2008?" No quantitative data were collected for this question. Instead, interview questions were posed to the bank CEO and the Operation's Officer. During a formal interview, the CEO stated, "Mergers and acquisitions are our core competency." Core competencies are those activities that the bank does very well. Green Bank has been growing via mergers and acquisitions for the last 15 years. As a result of this growth, Green Bank ranks among the top 100 of all banks in the country according to total assets, which are valued at $6 billion.

For comparison, current Federal Reserve data shows the top three banks according to asset size are J. P. Morgan at $1.6 trillion, Bank of America at $1.4 trillion, and Citibank at $1.2 trillion in assets (Large Commercial Banks, 2011). Green Bank

appears on this list at position 111 with $5.7 billion in assets (Large Commercial Banks, 2011). Bank asset values were current as of March 2, 2011. Increasing in size is important because the Green Bank CEO believes "In the future, banks valued at less than 1 billion dollars may have trouble acquiring the infrastructure required to satisfy forthcoming government regulations." For this reason, Green Bank plans to stay larger than $1 billion in assets with mergers and acquisition being an ongoing function for the bank.

When asked about the philosophy that would govern future mergers and acquisitions, the CEO stated, "mergers will definitely occur because Green Bank can do things other banks cannot do and because we do what they can do even better." It is for this reason banks that are a merger candidate for Green Bank will want to partner with them. In general, Green Bank looks for several characteristics when considering an acquisition. First, the managers of Green Bank look for "in-market transactions" which means banks that have similar operations as Green Bank. Once the merger is complete, managers of Green Bank look for ways to improve efficiencies of the combined entity. Second, the bank being considered for acquisition may have talent that Green Bank needs. Once the merger is complete, managers from the other bank are now Green Bank employees and contribute accordingly. Lastly, merger candidates must be in a good market for Green Bank, which means good demographics such as a population with disposable income, and a geographic area that is growing economically and has high population density.

As Green Bank grows through mergers and acquisitions; it plans to obtain the capabilities of a large bank while keeping the feel and personal touch of a small bank.

For example, a large bank would have the ability to finance business construction projects and a small bank would be able to provide services to individual customers. All of these customers, both business and individual, would be within the bank's current footprint, or area of operations, which is the Southwestern Pennsylvania region. Although the bank would like to expand into faster growing geographic areas such as Eastern Pennsylvania or Virginia, they do not want to lose their small bank feel. Many banks used mergers and acquisitions to grow in size and now some of those banks are considered too big to fail. When asked about an optimum size for Green Bank, the CEO stated, "it is too early to tell or estimate the optimum size for the bank." He wishes the bank to grow in size but does not want the feel for the individual customer to be lost. When that point is reached, the bank is considered by the CEO to be large enough.

Green Bank's mergers and acquisitions strategy between 2003 and 2007 was used to establish a presence in Western Pennsylvania regions where the bank had little or no presence at that time. A banking presence in Western Pennsylvania allowed Green Bank to offer services to customers previously served by other banks. Green Bank also wanted to establish new branches in new markets where legacy banks, banks that served these regions for many years, were equipped to deal with the old economy such as coal and steel. Some of these legacy institutions were too complacent in their ability to serve the old economy of the region and are not ready for the challenges of new markets such as information technology and Marcellus shale oil. Moving forward, the new economy driven by the information age requires a new mindset that Green Bank can leverage which could help to offset the slow growth dynamic that currently exists in the region.

The Green Bank CEO could not comment as to why legacy banks in the Southwestern region became complacent in their business models. "Complacency" is a problem in all industries not just banking. Business literature sometimes calls this phenomenon "victims of their own success." The automotive industry as well as the computer industry has experienced this phenomenon. In many cases, the managers of the complacent organization think that nothing changes and their business model that worked 30 years ago still works today.

In summary, research question four relating to mergers and acquisitions described the reasons for mergers activity before and after the financial crisis of 2008. Before the crisis, the bank sought to establish a presence in Southwestern Pennsylvania. The Operations Vice President considered these mergers as those banks that had "contiguous operations" or banks with similar business models as Green Bank.

Following the crisis, Green Bank was interested in growth when considering mergers and acquisitions. The bank was looking in particular for other banks they could outperform, which means that the services of Green Bank would be preferred over the bank being acquired. Upon considering the reasons for mergers both before and after the crisis, Green Bank is not just trying to survive; Green Bank seeks to continually grow in the Southwestern Pennsylvania region and beyond which is an indication of continued solvency for the bank.

Research questions five asked, "How has the bank's change in the current tangible common equity ratio increase the likelihood of a merger or acquisition?" Tangible common equity ratios are a calculated value and take into account the ratio of tangible common equity to tangible assets for the bank. A good way to think of this ratio

is the amount of money and individual or family has (tangible equity) when compared with their assets (tangible assets) such as cars and a home. For example, if a family or individual had $100 in tangible assets (home and cars) the family would have $7.72 in tangible equity (cash) based on the percentages listed for Green Bank in 2003. For 2011, every $100 a family or individual had in tangible assets, they would have $10.35 in cash based on the percentage listed for this ratio. Total values in the previous example can be found by multiplying percentages found in Table 7 by the appropriate asset value, in this case $100.

Table 7

Tangible Common Equity Ratio for Green Bank

Year	Tangible Common Equity Ratio (%)
2003	7.72
2004	6.45
2005	6.51
2006	6.72
2007	6.92
2008	7.71
2009	7.51
2010	10.35
2011 Q1	10.49

Note. Total equity and total asset data were found in the Green Bank Annual Report of 2010, 2009, 2007, 2005, and 2004. The 2011 Tangible Common Equity Ratio was retrieved September 6, 2011 from Investor Relations Page http://www2.snl.com/irweblinkx/Fin/aspx?annual=IID=100503.

Tangible common equity ratios for a bank are found by taking the value of equity (money) and subtracting intangible assets such as goodwill and preferred stock. For tangible assets, start with total assets and subtract out the value for intangible assets, which is again the value of goodwill. All the information required to calculate this ratio can be found in the bank's financial statements. Values for this ratio were calculated and are displayed in Table 7.

Tabulates data shows a drop in the tangible common equity ratio between 2004 and 2007, but a return to previous values following the crisis of 2008. Tangible common equity then takes a big jump in up 2010 and the first quarter of 2011. Increases in this ratio were due to the increased bank equity as a result of the common stock sale, dividend reductions, and the retiring of risky bond investments discussed previously. Tangible common equity ratios are a way to indication of how well capitalized a bank is and its strength and ability to withstand severe credit quality problems that could result in huge write-offs. During the latest crisis, being able to withstand situations where large write-offs occurred was necessary for banks to survive. Green Bank had sufficient reserves and increased those reserves through the current quarter. Additionally, a minimum value of 6% is required for the tangible common equity ratio by government regulators before a bank is allowed to merge, something that Green Bank has done successfully over the past 15 year.

Typical values of this ratio for banks fall between 5.16% and 7.07% (Spiegel, Gart, & Gart, 1996). High numbers for this ratio indicate that the bank could grow either internally or through mergers and acquisitions, which is exactly how Green Bank has grown between 2003 and 2011. Tangible common equity ratios above 6% and the fact

that Green Bank has increased this ratio in 2010 and the first quarter of 2011 is a sign of continued solvency for the bank.

To obtain a quantitative feel for tangible common equity ratios, consider a bank with $1,000 in tangible assets. Using the 2003 numbers, Green Bank would have 7.72% x $1,000 = $77.2 in equity or cash on hand. The tangible common equity ratio has been on the rise and in the first quarter of 2011 was 10.49%. For every $1,000 in tangible assets, the bank would have $104.9 in equity ready and available for use.

Research question six asked, "How has the attitude of the banks customer's changed with regards to reputation following the crisis of 2008?" A statement by bank management in the 2010 Annual Report emphasizes the need for a good public perception for the bank. "Reputation risk, or the risk the bank's earnings and capital face from negative public opinion, is always a concern for Green Bank." Negative public opinion could adversely affect Green Bank's ability to attract new customers and expose the bank to legal or regulatory consequences. Negative publicity could be from actual or alleged actions and include lending practices, corporate governance, regulatory compliance, or mergers and acquisitions (Annual Report, 2010). This research question was answered using both qualitative and quantitative data found in bank deposit trends and internal ethics programs. Table 8 shows the deposits of Green Bank between 2003 and first quarter 2011.

Table 8

Deposits for Green Bank

Year	Green Bank Deposits (thousands) U.S. Dollars
2003	3,288,275
2004	3,844,475
2005	3,966,552
2006	4,326,440
2007	4,347,219
2008	4,280,343
2009	4,535,785
2010	4,617,852
2011 Q1	4,629,968

Note. Deposit data were found in the Green Annual Report of 2010, 2009, and 2004. The 2011 first quarter deposits were retrieved September 6, 2011 from Investor Relations Page http://www2.snl.com/irweblinkx/Fin/aspx?annual=IID=100503.

Between fiscal year 2003 and first quarter 2011, Green Bank deposits increased 40%. This trend is a good indicator of a positive reputation for the bank because people will not deposit their money in a bank they do not trust. A comparison will now be made between the bank's competitors as identified by Green Bank. These competitor banks are referred to as Bank A and Bank E. Deposits for the three banks were trended between 2007 and first quarter 2011 to capture the deposit composition before and after the financial crisis of 2008. These two other banks are in the geographic vicinity of the headquarters of Green Bank and depositors could easily pull their money from Green Bank and deposit into one of the other two banks if they wish. Table 9 shows the entire deposit composition between Green Bank, Bank A, and Bank E for all branches.

Table 9

Deposits for Green Bank, Bank A, and Bank E

Year	Green Bank Deposits (thousands)	Bank A Deposits (thousands)	Bank E Deposits (thousands)
2007	$4,347,219	$2,621,825[1]	$82,696,000[3]
2008	$4,280,343	$3,228,416[2]	$192,865,000[4]
2009	$4,535,785	$3,304,541[2]	$186,922,000[4]
2010	$4,617,852	$3,317,524[5]	$183,390,000[6]
2011 Q1	$4,629,968[7]	$3,305,839[8]	$181,990,000[9]

Note. [1]Bank A 2007 Annual Report, [2] Bank A 2009 Annual Report, [3] Bank E 2007 Annual Report, [4] Bank E 2009 Annual Report, [5] Bank A 2010 Annual Report, [6] Bank E 2010 Annual Report, [7] Investor Relations Page, [8] Bank A First Quarter Results 2011, [9]Bank E 2011 First Quarter Results.

Data from Table 9 shows that deposits are flowing into Green Bank from its close competitors. Following the crisis year of 2008, Green Bank deposits increased 6% while Bank A increased deposits only 2.3% and Bank E deposits actually decreased 3%. Results for 2010 show a similar trend. Green Bank posted a 1.8% increase, Bank A increased only 0.4% and Bank E dropped again, this time 1.8%. First quarter 2011 data exhibits this same trend with Green Bank deposits increased 0.26% over fiscal year 2010. Bank A deposits dropped 0.35% and Bank E dropped 0.76% over the same period. Even though Bank E has more total deposits than Green Bank, the deposit trends are important here. Deposit money is flowing from Bank E and Bank A into Green Bank.

In addition to deposit composition trends, ethics programs launched by the Green Bank management team were also examined. Both the Green Bank CEO and the

Operations Vice President have a strong belief in the ethic behavior of the employees at their bank. During new employee orientation, extensive ethics training relating to bank operations is provided. Additionally, an ethics hotline has been established and is managed by a third party that refers all ethics complaints to the board of directors in the event that they occur. Lastly, a consulting firm has been retained to assist in developing a survey that, among other metrics, measures employee perceptions of ethical behavior within the bank. The bank CEO stated, "the scores on the ethics portion of this survey are routinely high," meaning employees believe they are working at an ethical bank. To this point the Vice President stated, "I have worked for Green Bank for 35 years and have not witnessed unethical behavior." Details concerning the validity of this survey were not available for this study.

Data collected for this research question, question six, demonstrates that the reputation of the bank is good. Starting with the deposit increases seen by Green Bank between 2003 and first quarter 2011 and the fact that deposits in Green Bank are growing faster than the bank's competitors: Bank A and Bank E. Movement of deposits into Green Bank signifies trust among depositors. People will not place their money in a bank they do not trust and the fact that deposits are continuing to increase following the crisis of 2008 is a good sign.

Ethical perceptions also played a major role in the reputation of the Green Bank. Continued commitment to ethics put forth by the management team is an intangible asset and contributes to the good reputation of the bank. Intangible assets are ones that cannot be measured on an accounting ledger, but nonetheless contribute to the bottom line profits of the bank. Ethics programs launched by the management are not a one-time deal

based on a particular incident. They are a process of continual effort to maintain ethical standards of the bank and a vehicle to report violations of the ethical code to the appropriate board committee if they occur. The combined results for this research question indicates a strong ethical foundation for Green Bank and the likelihood of future solvency.

Research question seven asked, "How has the bank changed its top management mix and board members in order to maintain expected performance following the financial crisis of 2008?" The importance of this question stems from a review of literature, which shows that board diversity is important to the success, or solvency, of a bank. Existing literature also shows that too much diversity could be responsible for in-fighting and lack of consensus among board members. Currently, the board of directors for Green Bank has nine male members and three female members. Board composition diversity was also measured as members who have expertise other than just banking.

Green Bank board diversity breaks down as follows: One member is a college professor, three have experience in accounting, two experience in law, one in grocery, one in construction, one in insurance, and one member served with the Chamber of Commerce. The most recent addition to the board is someone who has extensive experience in corporate governance, ethics and compliance matters, and the execution of corporate strategy. There are 12 board members in total.

The purpose for collecting this information was to examine the tenure of the board, board composition with respect to diversity, and how well the members worked together. Tenure was measured as a member's time on the board and composition diversity was measured as members who have expertise other than just banking. What

was of great interest in this research question was whether board members were added following the financial crisis of 2008 and how well the board members work together.

Only one board member was added in 2010. All other members have been on the board since 2007 and before. The new board member has experience in law and ethics compliance. Following the financial crisis of 2008, there were a lot of ethics and compliance issues brought to light for some of the banks that had failed. Going forward, having an individual with an ethics compliance background will complement the ethics programs already in place at Green Bank.

Bank boards have overall responsibility for the operation of the organization, which includes ethics and compliance to government regulations. With the new regulations forthcoming from the Dodd-Frank Bill and the importance of resolving all ethics issues that arise, this new board member will be able to provide new insight so the board can make more informed decisions. His presence indicates that Green Bank is proactive in forming the best board to allow the bank to remain successful in the future.

With the exception of the new member added in 2010, all other members have remained the same. The significance of this fact is that there was no motivation to replace any of the current members, for any reason. Green Bank was performing well before the financial crisis and the fact that the bank did not receive TARP funding nor has been declared insolvent indicates that it is doing well now. There have however been changes to the board in fiscal year 2011 but this was because the bank wanted to separate the functions of management and oversight. In other words, board members cannot serve as managers as they did in the past. Also, the chairman and CEO functions were

separated. Both of these moves were to create greater independence and efficiencies in the oversight capabilities of the Green Bank board of directors.

Board changes in 2011 were not made because of negative impacts to the bank in any way. They were done to prevent problems from occurring in the future. For instance, having board members serve as managers represents a conflict of interest. These managers would be responsible for supervising themselves. Also, the function of the board chairman was split from the CEO function. In the past and at many other companies, the chairman and CEO are the same person. In the new model for Green Bank, the chairman will be responsible for forming the board and the CEO focuses on the operation of the company.

Getting back to board diversity (experience other than just banking), it is important to be aware that diversity can be a double-edged sword. Having good diversity on the board allows a lot of alternatives to be considered for each issue during meetings. Basically, a lot of different ideas can be generated. On the other hand, if the board members, in their diverse ideas, are all going in their own direction, then sometimes it is tough for them to agree on issues and get things done. When this issue was discussed with the CEO in a formal interview, he stated, "Our diversity is our strength." During meetings, the members generate a lot of options and contingencies for each issue. Once all ideas have been voiced, the sentiment of the board is to get the job done. There are no problems with reaching consensus.

In addition to adding one board member, some changes in the management ranks occurred as well. Following the crisis of 2008, several managers were added to the Green Bank staff with the following competencies: A Chief Financial Officer (CFO) and

Controller in the financial management department, also a credit officer for risk management as well as small business managers who operate in the field. These new additions represent a proactive approach to acquiring the management talent that will be required for the bank to remain solvent. During this hiring evolution, Green Bank did not change its hiring process, it used the same process it had in place and attracted the people it needed.

By adding the aforementioned personnel to the staff, Green Bank took advantage of the experience of managers who worked outside the bank and who have seen several business cycles. It is important that business managers and bank managers recognize these cycles and take action to minimize the impact on the bank or even exploit their knowledge of a situation to help the bank succeed. New managers who were hired after the crisis of 2008 also represented a renewed commitment to retail growth for the bank and proposed and implemented new administrative policies that will help Green Bank remain solvent in the future. The policies in general represent a paradigm shift in how the bank plans to grow. Prior to 2008, the bank grew by means of acquisitions. Once other banks were acquired, efficiencies in the combined organization were identified and utilized. Following the crisis of 2008, the new managers facilitated organic growth, which is growth within the bank due to improving process efficiencies. Hiring experienced managers and board members like this, as well as separating the functions of board chairman and CEO, represent a trend toward future solvency for Green Bank.

Research question eight asked, "How will the regulatory changes enacted by the federal government help or hinder the bank to remain solvent going forward?" These new regulations were contained in the Dodd-Frank Bill, which was designed to enact new

regulations to prevent a crisis like the current one from happening again. In the near future, regulators will create 243 new rules, conduct 67 studies, and issue 22 periodic reports relating to banking (Change Amidst Uncertainty, 2011). These rules, studies, and reports are a source of frustration for many banking executives including the ones at Green Bank because they are vague and not clearly defined. Many of these new regulations will not be written for several years because they will be based on results of future studies. Dodd-Frank also aimed at preventing the risky behavior and regulatory failures that brought the economy to the brink of collapse in the fall of 2008 and cost millions of Americans their jobs and savings (Financial Regulation Bill, 2010). The Green Bank CEO said, "Dodd-Frank is too large, too vague, and may not achieve its intended purpose."

In addition to possibly being ineffective, new regulations proposed by Dodd-Frank will place new stress on managers and board members who are accustomed to working in a less stringent environment. This less stringent environment refers to the 3-6-3 rule of banking that was used prior to 1978. Prior to that year, the government regulated the interest rates that banks could pay on deposits and the interest rate at which they could lend money. So, bank managers would say pay 3% on bank deposits, charge 6% on loans, and be on the golf course by 3 p.m. With the new banking regulations forthcoming from the Dodd-Frank Bill, the environment has changed somewhat. For example, the Federal Deposit Insurance Corporation (FDIC) has increased is issuances of Memorandum of Understanding (MOU) which require bank boards to exercise greater oversight of their bank, which in turn places more stress on senior managers.

In the final analysis, Dodd-Frank proposes to accomplish five objectives that will limit the impact of a future financial crisis if it occurs. These five objectives are: the creation a new consumer-protection watchdog housed at the Federal Reserve to prevent abusive lending, give the government power to wind down large failing financial firms and set up a council of federal overseers to police the financial landscape for risks to the global economy, establish oversight of the vast market in financial instruments known as derivatives, impose new restrictions on credit rating agencies, and give shareholders a say in corporate affairs (Financial Regulation Bill, 2010).

In September of 2011, the effect on banks relating to these new regulations was still unclear to most bankers. Many of the provisions of the Dodd-Frank Bill have yet to be translated into actual regulations. Bankers still remain uncertain about how to adapt their institution to the new regulations and many say they would like to keep their existing structure where they collect data for regulators internally. A big question concerning bankers going forward is whether to maintain their new data collection activities required by the Dodd-Frank Bill within the organization or outsource them (Change Amidst Uncertainty, 2011). These new data sets banks are required to collect will now be discussed.

Dodd-Frank now requires banks to make available new data that has not been monitored extensively in the past. These new data sets include a foreclosure database, a consumer complaint database, financial databases, and a national appraisal registry. The purpose for forming these databases was to increase oversight of banks and prevent another financial meltdown like the one that began in 2008 (Young, 2011).

The foreclosure database will be established by the Department of Housing and Urban Development and be made available to the public. Information relating to foreclosures and defaults on mortgage loans will be contained in this database (Young, 2011). The consumer complaint database will also be made available to the public and will replace the web source that currently helps consumers find out where to resolve their banking complaints (Young, 2011).

The financial database established in Dodd-Frank will replace the current database maintained by the Security and Exchange Commission (SEC). This SEC database contains information, which includes financial company reference database, a financial instrument reference database, and standards for reporting financial transaction among banks (Young, 2011). Lastly, the National Appraisal Registry gives grants to state appraisers to help ensure that appraisal data is collected. Currently, appraisal data is not universally accessible. Appraisal data includes lender's mortgage offerings to poor and minority borrowers (Young, 2011).

Information for this research question was entirely qualitative and based on formal interviews. In response to the proposed new regulations, the Vice President of Operations stated, "I am not in favor of more regulations, enforcement is the key." By this he means enforcement of current regulations have in the past been more effective than making new regulations. The CEO has a similar sentiment on banking regulations, he stated, "Banking regulations have good intent, but they manage to the last crisis. Improved communications is more proactive." Responses from bank executives show that in general they believe enforcement of current regulations, good communication between banks and regulators, and not managing to the last crisis may be more effective

that going ahead with volumes of new regulations like the ones proposed in the Dodd-Frank Bill.

As far as current regulations already in place, both bank executives believed that TARP, Troubled Asset Relief Program, was a good program. This government program sought to provide liquidity (money to lend) to the banking system to unfreeze the credit markets and allow business in the United States to continue their operations. The CEO stated, "Yes, TARP helped. It was the right thing to do for a system that was ill. It was a good government investment." The Operations Vice President on the same subject stated, "Good program, it was useful under the circumstances" when referring to TARP.

Green Bank did not accept TARP money because that program was designed to provide capital to struggling banks. Under the TARP program, the government bought preferred stock from participating banks and in return, those banks received money they needed to conduct their business. Green Bank did not need this money because it was able to raise $100 million through an offering of common stock in the fourth quarter of 2008 and an additional $86.2 million of capital was raised through a public offering of common stock in the third quarter of 2010. Even though this move caused the common stock price drop, the CEO stated, "I have no regrets about that decision." He considers raising capital in this way was a short-term pain that will produce long-term positive outcomes for the bank.

When it came time to distribute TARP money, some banks that did not need the money were required to accept it. Government officials did this so the public did not know which of these banks were in the greatest distress. If the public used the amount of TARP money distributed to a bank as an indication that it was unhealthy, there may have

been a run on that bank similar to what happened in the Great Depression, which would then cause the bank to fail. Green Bank did not need this money and was not pushed to accept it. Even though some banks saw this money as a win-win situation, the Green Bank CEO suspected there would be additional regulations attached to this TARP money and there was. Banks that participated in the TARP had restrictions placed on how much their executives would get paid (TARP and Executive Pay, 2011). New regulations that intend to prevent a crisis like the current one will now be discussed.

Getting back to the Dodd-Frank Bill, this bill plans to regulate financial derivatives, create a consumer financial protection watchdog agency, prevent abusive lending practices for home owners, shut down large failing institutions, improve overall banking regulations, and have shareholder votes on executive pay. Each of these proposed regulations were discussed with the Green Bank executives and their responses are included in the following paragraphs.

First, financial derivatives, which were a contributor to the current financial crisis, are regulated under the new bill. Financial derivatives are securities, which are financial in nature, and whose payoff is linked to another previously issued security (Saunders & Cornette, 2004). Think of derivatives as an insurance policy. Derivatives are contracts between two parties intended to minimize the impact of a financial transaction in case it produces negative effects for one of the parties.

Green Bank executives believe that transparency in the derivatives markets may be more valuable than additional regulations. The bank CEO stated, "Make derivatives part of an auction market," which means he believes that if financial derivatives in the future were part of an open market and not private contracts like those at Fannie Mae and

Freddie Mac, all parties would see the contract and price distortions based on these contracts would be less prevalent. Furthermore, regulating derivatives may have been the solution to cure the past crisis, the financial crisis of 2008, but may have no value for preventing future crises as the government intends.

Green Bank holds financial derivatives and uses them as a hedging activity. Hedging is a process of minimizing potential losses in financial transactions. All derivatives used by the bank are evaluated as to whether they are hedging or non-hedging and documented as such. Management reviews contracts from various functional areas of the bank to identify potential derivatives embedded within selected contracts. As of December 31, 2010, Green Bank holds interest derivative positions, which are not designated as hedging instruments (Annual Report, 2010).

Second, the creation of a consumer financial protection watchdog agency was also proposed in the Dodd-Frank Bill. When asked, the Green Bank Operations Officer believes more rules in this area may not solve the problems but "better enforcement of current regulations" would be a better solution. The bank CEO said on this subject that, "it wasn't necessarily the financial instruments that were regulated that contributed to the financial crisis but the ones that weren't." By this he meant that commercial banks were already subject to significant regulation from the government but mortgage brokers like Fannie Mae and Freddie Mac were not. Had there been more regulations of these two mortgage brokers, the effects of the crisis may not have been as severe.

Third, preventing abusive lending practices for homeowners was in the Dodd-Frank Bill and the first thought from the Operations Vice President was "to have a better-educated financial consumer." For example, the Dallas Federal Reserve Branch has a

website that provides information on the use of debit cards, savings instruments like stocks and bonds, and the proper use of credit. If financial consumers were better educated, the regulation of preventing abusive lending practices may not be necessary. The bank CEO stated, "this new rule may target the wrong agent." As stated previously, he believes that the current crisis was brought on not so much by the lenders (banks), but by the mortgage brokers and their lack of transparency. Fannie Mae and Freddie Mac were the main brokers for mortgages in this current crisis and if they had shared information more freely with other institutions, the current crisis may have been avoided.

For example, an investigation by the Federal Reserve Bank and the Congressional Budget office revealed that Fannie Mae and Freddie Mac were able to borrow as much money as they wanted from the federal government to buy sub-prime mortgages. This aggressive buying of sub-prime mortgages by Fannie Mae and Freddie Mac represented poor choices by the two government sponsored agencies and their Washington sponsors and is largely to blame for the current financial crisis (Calomiris & Wallison, 2008).

Fourth, regulators also seek to monitor and establish provisions for shutting down large failing institutions as part of the new financial regulation bill. Green Bank's CEO stated, "the government wanting to shut down large failing institutions may have been the cure for the past crisis but may not be a solution for the next crisis" as this proposed regulation seeks to accomplish. We heard the expression "Too Big to Fail" throughout the analysis of the past financial crisis, which means that the government should bail out the institution regardless of the cost to the taxpayer. In the future, these failing institutions would not be bailed out but would be shut down using a pre-established plan to distribute their assets.

Fifth, the Dodd-Frank Bill contained a clause that suggested, "Improved banking regulations." Clauses like that were viewed with suspicion by the Green Bank executives. Both executives believe that the way to improve any regulations is to provide better communications between the banks and government regulators. The bank CEO stated, "Good intent but managing to the last crisis. Improved communications is more proactive." Timely regulations are important too. In many instances, the government enacts laws to prevent the last crisis and many of these new laws will not help prevent future crises. New regulations of this type (improved banking regulations) are thought by regulators to prevent bank failures in the future but both Green Bank executives interviewed believe that may not be the case.

Lastly, the Dodd-Frank Bill proposed shareholders vote on executive pay and to this the Green Bank CEO stated, "there are already non-binding votes of this kind." At Green Bank, the board of directors votes on executive compensation. Allowing shareholders a binding vote on executive pay is akin to circumventing the principles of a representative republic form of government. For example, we as citizens vote for our representatives and once they are in office, vote on legislation as our representatives. Likewise, the shareholders vote the members to the board, and the CEO believes the board members should then determine policy while serving on the board on behalf of the stockholders. Likewise, the Operations Officer stated, "Allowing stockholders to vote on executive pay is against free market principles." However, when banks take bailout money through the exchange of stock with the government such as the TARP program, shareholders or the government in this case, are invited into the boardroom. By this he

means now that the government owns shares in banks, they will want to start determining bank policy.

Overall, the Green Bank executives believed that new regulations would not prevent future crises as intended. "Regulations are well intentioned, but tend to manage to the last crisis," states the Green Bank CEO. Government regulations also tend to become obstacles in the operation of the bank. The CEO also stated, "Improved communications are more proactive" when it comes to better regulations. The Operations Vice President stated, "Consistent, timely communications" are necessary for new regulations, he also believes "don't dwell in the past" which again refers to regulations managing to the last crisis.

All this emphasis on new banking regulations to prevent future crises begs an important question, "What regulations should have been in place to prevent the crisis of 2008?" When this question was posed to the Green Bank CEO, he stated, "better financial literacy, not regulations might have prevented the past crisis." The financial crisis of 2008 was caused largely by the sub-prime mortgage collapse. Digging deeper into this issue revealed that the sup-prime mortgage crisis was caused by people buying houses they could not afford, waiting for the appreciation of the asset, and then selling the house to pay for the original purchase, in this case the house. This is a risky investment and should be avoided. In the future, if the public has better financial education, this type of financial crisis may never occur. In summary, the new proposed regulations from the Dodd-Frank Bill may not prevent a similar crisis in the future because a lot of the details of these regulations have yet to be written. For this reason, their ability to keep banks solvent in the future is inconclusive.

Finally, research question nine asked, "How has the common stock price and the dividend payout for the bank changed following the financial crisis of 2008?" Once collected, these results were then compared against banks of similar asset size; two of the banks took TARP money (Bank A and Bank B) and two did not (Bank C and Bank D). The practice of comparing the performance of one organization to others in the same category is known as benchmarking. Benchmarking has been used for some time in the business world to get a better feel for the results presented for any particular organization. Table 10 lists Green Bank stock prices as well as the comparison bank's stock prices between 2003 and first quarter 2011.

Table 10

Stock Price for Green Bank and Four Comparison Banks

Year	Green Bank	Bank A	Bank B	Bank C	Bank D
2003	$14.32	$29.75	$30.00	$28.13	$8.15
2004	$15.40	$37.55	$36.17	$30.75	$11.05
2005	$13.03	$37.00	$36.17	$26.46	$10.98
2006	$13.50	$34.85	$39.12	$24.85	$10.29
2007	$10.80	$27.52	$18.59	$21.92	$9.41
2008	$12.39	$35.50	$10.06	$25.22	$5.70
2009	$4.74	$17.30	$1.44	$25.05	$8.88
2010	$7.08	$22.59	$1.53	$27.51	$11.63
2011 Q1	$6.85	$21.57	$20.80	$24.74	$11.66

Note. Green bank stock prices were retrieved on September 6, 2011 from http://finance.yahoo.com/q/hp?s=FCF+Historical+Prices. Bank A stock prices were retrieved on September 6, 2011 from http://finance.yahoo.com/q/hp?s=STBA+Historical+Prices. Bank B stock prices were retrieved on September 6, 2011 from http://finance.yahoo.com/q/hp?s=CPF+Historical+Prices. Bank C stock prices were retrieved on September 6, 2011 from http://finance.yahoo.com/q/hp?s=AROW+

Historical+Prices. Bank D stock prices were retrieved September 6, 2011 from http://finance.yahoo.com/q/hp?s=CFNL+Historical+Prices.

Stock price data for Green Bank as well as Bank A and B shows a significant drop in price following the crisis of 2008. Bank C and D on the other hand seemed not to have been affected at all by the crisis. In 2009, Green bank realized a 62% drop in stock price while Bank A and Bank B saw a drop of 51% and 86% respectively. The other two banks actually realized an increase in their stock price. In the first quarter of 2011, Green Bank, Bank A, and Bank B actually increased their stock prices but they have yet to reach their pre-crisis. Remember, Green bank did not receive TARP but Bank A and Bank B did. Common stock price is closely linked with dividend payouts. Dividend distribution for the five banks is listed in Table 11.

Table 11

Dividend Payouts for Green Bank and Comparison Banks

Year	Green Bank	Bank A	Bank B	Bank C	Bank D
2003	0.625	1.02	0.64	0.84	0
2004	0.645	1.07	0.64	0.88	0
2005	0.665	1.13	0.73	0.92	0.01
2006	0.68	1.17	0.88	0.92	0.04
2007	0.68	1.21	0.98	0.92	0.04
2008	0.68	1.24	0.70	0.96	0.04
2009	0.18	0.61	0	0.96	0.05
2010	0.12	0.60	0	1.00	0.08
2011 Q1	0.12	0.60	0	1.00	0.12

Note. Green Bank dividend payouts were retrieved on September 6, 2011 from http://finance.yahoo.com/q/hp?s=FCF+Historical+Prices. Bank A dividend payouts were retrieved on September 6, 2011 from http://finance.yahoo.com/q/hp?s=STBA+Historical +Prices. Bank B dividend payouts were retrieved on September 6, 2011 from http://finance.yahoo.com/q/hp?s=CPF+ Historical+Prices. Bank C dividend payouts were retrieved on September 6, 2011 from http://finance.yahoo.com/q/hp?s=AROW+ Historical+Prices. Bank D dividend payouts were retrieved

September 6, 2011 from http://finance.yahoo.com/q/hp?s=CFNL+Historical+Prices. Bank D declared its first dividend in fiscal year 2005.

Dividend payout for Green Bank dropped 73% in following the crisis of 2008 in conjunction with the drop in stock price that year. Changes in stock price typically show a positive correlation with dividend payout. For example, if the stock price increases, dividend payments usually increase as well. On the other hand, if stock price drops significantly, the board, in order to preserve cash to maintain minimum capital ratios, may decrease dividend payments. In the case of Green Bank, the board of directors did reduce dividends to preserve capital and be prepared for a double dip recession in the event it occurs in the future. Board members for Green Bank chose this action because in the recent past, the bank paid dividends slightly above levels desired levels. The CEO stated, "dividend payout was higher than would generate 8% internal growth," which was his goal.

Bank A and Bank B also reduced their dividends in response to the crisis. Bank A reduced its dividends by 50% and Bank B eliminated its dividend altogether. As with common stock, Bank C and Bank D increased their dividends during and after the crisis of 2008. For the most part these results were predictable, the two banks that took TARP saw stock price and dividends drop, while the two banks that refused TARP saw their stock price and dividends increase. The outlier in this data set is Green Bank. The details of their situation will now be discussed.

Because the stock and dividend data for Green Bank were so counterintuitive, it is important to look deeper into their operation. The fact the bank did not take TARP and the fact their stock price is low and dropping, raises some interesting questions such as

how and why? During a formal interview, the Green Bank CEO was asked what trend he believes the common stock price would follow in the future and he stated unequivocally "up!" The researcher then asked how he planned to do that. Although bank stock prices are subject to many forces, the CEO does have some control over one factor. The Green Bank CEO plans to increase dividend payouts so that investors will buy shares and because of the dividend hold the stock. This is called a buy and hold strategy. When this happens, it will place upward pressure on the stock and the price will likely rise.

As stated previously, there are several factors that affect bank stock prices. Going forward, Green Bank's CEO believes that the stock price for the bank will be determined by at least three factors: the overall market conditions, banking industry trends in general, and the individual performance of Green Bank in particular. To better understand each of these factors, consider the following.

First, overall market conditions refer to the financial markets (stock markets), which are strongly influenced by actions from the Federal Reserve Bank (FED). One of the primary ways the FED influences financial markets is through the setting of prime lending rates. With regards to investments, when prime lending rates are low, corporate bond interest rates increase which causes investors to move money from stock investments and put them into bond investments. This investment strategy has been going on since January 2010 and may be partly responsible for money coming out of the stock of Green Bank and causing the price to drop.

Alternatively, when FED rates are high or are on the rise, the interest rates on corporate bonds decreases. This phenomenon causes investors to move their money from bonds to equities (stocks). When money flows into the stock market, prices start to rise.

Current FED policy is to leave their interest rate unchanged until June of 2013; this will make it difficult for stocks in general to start an upward climb.

Second, when it comes to the banking sector in general, it is not held in high regard right now. Many reports blame the large banks for creating this current crisis with their risky lending practices and unregulated derivative contracts. Smaller commercial banks are having difficulties right now as well which has led to a rash of closures by the Federal Deposit Insurance Corporation (FDIC). For instance, in 2007, the FDIC closed 3 banks and in 2009 closed 140 banks due to insolvency. The tremendous increase of course was due to the financial crisis of 2008. As a result, investors may be avoiding bank stocks right now, which would cause their stock prices to drop.

Lastly, the individual performance of Green Bank was examined. Because a lot of common stock growth is derived from the Return on Equity (ROE) of the institution, banks are at a natural disadvantage. Capital requirement (money that must be kept in reserve) has a negative effect on ROE numbers and as a result, banks' stock price may not track in a similar fashion in comparison to other industries. As the capital reserve requirements increase, there is less leeway for bank executives to use cash on hand to provide returns for investors especially in the form of dividends. With this current crisis, regulators are increasing the capital requirements to strengthen bank's positions or their ability to withstand economic downturns. These capital requirements in turn will cause a decrease in ROE and the investors looking for strong stock price growth may not invest as readily in bank stocks. Green Bank sees its stock as an investment instrument that will pay good dividends in the long term and that will make it attractive to investors who are looking for a source of income. When investors buy the stock and because of the good

dividend payments are reluctant to sell the stock, upward pressure on the stock price is exerted causing the stock price to rise. This is the strategy the Green Bank CEO plans to use to increase the stock price going forward.

With healthy capital ratios and a relatively low common stock price, the question naturally arises, "Are you concerned about a hostile takeover attempt?" When this question was posed to the CEO he stated, "Can't worry about that, it's always a risk." Currently the CEO believes his bank's stock price is undervalued for the capital ratios it holds. His plan as stated previously is to increase dividend payout so investors tend to buy the stock and hold for the long term. This places upward pressure on stock price and the price tends to rise. As the stock price rises, the likelihood of a hostile takeover becomes more remote.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This dissertation investigated how a commercial bank, Green Bank, modified its organizational behavior to remain solvent following the global financial crisis of 2008. At issue during this study were current bank solvency and the likelihood that Green Bank would remain solvent for the foreseeable future. Events that triggered the financial crisis of 2008 were known in this study as the exogenous shock or an external shock event.

Research question one asked, "How have the solvency ratios for the bank changed following the global financial crisis of 2008?" Results from this question indicated that Green Bank is currently solvent based on meeting minimum capital requirements. Additionally, each of the financial ratios increased in 2010 over their 2009 values and as of December 31, 2010, Green Bank was considered "well-capitalized" as defined by the Federal Deposit Insurance Corporation (FDIC) (Annual Report, 2010). The significance of Green Bank being solvent is that there are still a number of commercial bank closures due to insolvency. To benchmark these numbers, a list of bank closings for previous years is listed in Table 12.

Table 12

FDIC Bank Closures Since the Year 2000

Year	FDIC Bank Closings
2000	2
2001	4
2002	11
2003	3
2004	3
2005	0
2006	0
2007	3
2008	25
2009	140
2010	157

Note. Bank closure statistics were found on the FDIC website and retrieved January 18, 2012 from http://www.fdic.gov/bank/individual/failed/banklist.html.

Data from Table 12 shows huge spikes in FDIC bank closures occurred in 2009, the year following the crisis. Another increase in FDIC bank closures occurred in 2002, which represents the year following the events of September 11, 2001. Outside of these time frames, FDIC bank closures are almost non-existent especially between 2003-2007. Bank closures for fiscal year 2010 numbered 157 and those for fiscal year 2011 numbered 96, which is a clear indication that there is still risk in the banking industry.

The remaining research questions two through nine determined the likelihood that Green Bank remains solvent for the foreseeable future. These questions were not so much based on stand-alone metrics like research question one and capital ratios, but

rather tracking and trending a variety of measures. To supplement quantitative data in the remaining research questions, comments from Green Bank executives were obtained.

Research question two asked, "How has the bank changed its solvency indicators following the crisis of 2008 as compared to the years 2003-2007?" This question employed four financial ratios in an effort to determine future solvency for the bank. After examining each ratio, it was evident that the results were almost entirely inconclusive. Ratio one examined the six-month CD yield of the bank compared with the six-month Treasury rate. A review of literature shows that if the bank's CD rate is greater than the Treasury rate, this signifies a risk associated with investing in that bank. For Green Bank, CD rates were set independent of the Treasury yield and by doing this, the bank received the investment money they need when they need it. Determining CD yields in this manner indicates pricing power and the ability to attract needed funds to remain solvent for the foreseeable future.

Two of the remaining three ratios were based on the bank's stock price. These were stock price to earnings per share and equity capital to total assets. Data collected for research question two indicates that the bank stock price did drop following the crisis of 2008 and as a result, these two ratios dropped. It is premature to say that these ratios pose a negative trend because even though the stock price dropped, the underlying business functions of Green Bank are strong. As mentioned previously, the sale of stock, which lowered the price per share was to cover losses from the sub-prime mortgage investments and to finance loans already approved in 2008.

Lastly, the ratio of purchased funds to liabilities dropped following the financial crisis of 2008. This is because Green Bank sold these purchased funds to get cash to

cover losses from the sub-prime mortgage exposure and to strengthen their capital ratios. Purchased funds are short-term investments from other institutions and when the amount held by the bank dropped, it caused the ratio to trend lower. Overall, these ratios, which are used during stable, non-crisis banking operations, seem unable to provide forecasts during this most unusual crisis. What might have been discovered here is the inability of these ratios to make predictions during a financial crisis of this type. Because of this, the results from these ratio trends have been declared inconclusive with regards to forecasting future solvency.

Research question three asked, "How has the bank changed its financial slack profile in response to the exogenous shock initiated by the global financial crisis of 2008?" Green Bank's financial slack has gradually increased between the years 2003 and 2011 with only a slight decrease following the crisis of 2008. A review of literature discussed the concept of financial slack in general terms with no hard and fast rules or values for financial slack values. Traditionally, only trends are measured, not a specific values for financial slack. Literature available on the subject stated that banks that could increase their slack value had a greater chance of surviving external shock. In this study, the external shock was the financial crisis of 2008 so with an increase in financial slack since the crisis, Green Bank had a greater chance of surviving. Based on this trend, the bank will be able to withstand similar crises in the future and likely remain solvent.

Research question four asked, "Has there been any changed in the reason that the bank would seek a merger or acquisition to remain solvent following the global financial crisis of 2008?" This question examined merger and acquisition sentiments of Green Bank executives. A formal interview with two senior bank executives revealed that the

bank regards mergers and acquisitions as a growth evolution and not something used merely for survival. Green Bank is also looking for mergers with banks that have similar capabilities but which Green Bank does better. Bank managers are also aware that they could become too big. The Green Bank CEO believes that if the bank ever loses its ability to provide a personal touch for its customers, then they have gotten too big. A review of literature shows that banks that diversify through mergers and acquisition lower their chances of failure, which was an indication of future solvency.

Research question five asked, "How has the bank's change in the tangible common equity ratio increase the likelihood of a merger or acquisition?" A literature review shows this ratio indicates how well capitalized a bank is and its ability to withstand severe credit quality problems that require large write-offs, which is exactly the situation a lot of commercial banks faced with the sub-prime mortgage crisis. High values of tangible common equity also indicate the ability of a bank to grow internally (organic growth) or externally (mergers and acquisitions). Good values for this ratio historically have been 5.16 to 7.07 (Spiegel, Gart, & Gart, 1996). Green Bank meets or exceeds these values in the years 2003 to 2011, which indicates they would be approved for mergers and acquisitions and shows a tendency for future solvency.

Research question six asked, "How has the attitude of the banks customer's changed with regards to reputation following the crisis of 2008?" Reputation for the bank was evaluated in two ways; ethics policies endorsed by the bank and deposits held by the bank. Deposits of Green Bank have been on the rise since 2003. In addition to this, a comparison between its geographic competitors of Bank A and Bank E show that Green has increased its deposits over its competitors since 2008. Green Bank increased

its deposits by 6% while Bank A increased only 2.3% and Bank E actually decreased by 3%. Given this, it appears that deposits of bank customers are trending toward Green Bank, which is an indicator that trends toward continued solvency.

Additionally, a formal interview with two senior bank executives revealed that ethics is a very important issue for the bank. There are policies in place, an ethics hotline, and regular internal surveys to measure employees' attitudes on bank ethics. Results of the internal surveys indicate the employees believe they are working in an ethical environment. Also, as of March 2012, no ethical violations by Green Bank were recorded. High ethical standards held by bank executives point to future solvency for the bank.

Research question seven asked, "How has the bank changed its top management mix and board members in order to maintain expected performance following the financial crisis of 2008?" This question looked at the board composition and diversity as well as new additions or changes in the management ranks. Green Bank's board changed very little following the financial crisis of 2008. Only one board member was added following the crisis and no board members were replaced. The only exception to this was in 2011 when two board members were replaced so they would not hold a board seat and a management position at the same time. This move was to create greater independence for the Green Bank board of directors.

The new board member has competency with regulatory and compliance issues and this expertise will be a good addition to the board because in the next few years the government plans to enact additional banking regulations in an effort to prevent a crisis like the one of 2008 from happening in the future. Additionally, the CEO indicated that

board diversity was its strength. Diverse backgrounds of the members generate a wide variety of contingencies to be considered for each issue. Once the ideas are proposed in board meetings, the sentiment of the board is to get down to business and resolve the issues.

Additionally, board diversity has been linked to the success of organizations. One method used to measure diversity of governing bodies is the McKinsey diagnostic tool. This tool measures the organizational excellence of a company against nine criteria: leadership; direction; accountability; coordination and control; innovation; external orientation; capability; motivation; work environment; and, values (Women Matter, 2007, p. 12). When this tool was applied to companies in Europe, America, and Asia it was found that companies with three or more women in senior management positions score more highly on average for each organizational criterion than companies with no women at the top. In fact, the results show that when at least 30% of the governing bodies are women, performance increases significantly (Women Matter, 2007). Green Bank has three women out of 12 on the board of directors, which is 25% participation. This number is close to 30% and the McKinsey tool predicts that as this percentage increases, the performance of Green Bank will increase.

Along with a new board member, some new managers have joined the team. Recent openings generated by retirements have been filled and other managers who have experienced several business cycles have been brought on to institute policies to help the bank remain successful in the future. For the most part, new managers will shift the growth mechanism for the bank from one of acquisition to organic growth. New

managers and new board member hired since 2008 with their respective functions are an indicator of future solvency.

Research question eight asked, "How will the regulatory changes enacted by the federal government help or hinder the bank to remain solvent going forward?" Federal regulators plan to conduct studies whose results will enable lawmakers to enact new legislation for the banking industry. As a result, the bank leaders currently do not know what new regulations they will face. Specifically, the senior managers for Green Bank believe that good, timely communication will be essential to the success of all future regulations. Results for this question are inconclusive with regards to future solvency because all regulations based on the Dodd-Frank Bill are not yet known.

Research question nine asked, "How has the common stock price and the dividend payout for the bank changed following the financial crisis of 2008?" Stock price and dividend yield for Green Bank, Bank A, and Bank B dropped following 2008 while stock price and dividends of Bank C and Bank D increased. Bank A and Bank B received TARP funding and Bank C and Bank D did not. The outlier in this data set is Green Bank whose stock and dividends dropped even though they did not accept TARP. Of late, the Green Bank stock price and dividends are on the rise. The CEO of Green Bank is committed to increasing the dividends to a rate that will allow the bank to grow 8% per year and with this growth rate he believes he will attract long-term investors and cause the stock price to rise. This plan for a trend of increasing stock price is an indication of future solvency. Results for each of the nine research questions are tabulated in Table 13.

Table 13

Summary of Results for Research Questions 1 through 10

Research Question	Trend Toward Solvency	Comments
1	Yes	Current values for these ratios are acceptable according to federal standards. Green Bank is solvent.
2	Inconclusive	The ratios vary greatly. They were based on factors that were greatly affected by the crisis and may not have their usual forecasting power.
3	Yes	The slack values have increased and are continuing to increase. Tends toward future solvency.
4	Yes	Green Bank views mergers as a growth opportunity not a survival mechanism.
5	Yes	The bank's current ratios meet or exceed traditional values that indicate good performance.
6	Yes	Deposits increasing and trending toward Green Bank from other competitors. Ethics programs are highly valued and supported by senior management.
7	Yes	The board is diverse and effective. Also new managers have been added to implement policies to keep the bank competitive.
8	Inconclusive	A lot of the new regulations will be based on future studies and may not be effective.
9	Yes	The CEO is committed to increasing stock dividend that will attract long-term investors and in turn cause stock price to increase.

Study Conclusions

The purpose of this study was to determine if Green Bank was currently solvent and will continue to remain solvent for the foreseeable future. Solvency and future solvency was determined from the results of research question 1-10 with the exception of question 6, which was dropped following the pilot study. Capital ratios collected in research question one indicate that Green Bank is currently solvent. As far as future solvency, the indications look good. Research questions two through nine address components of bank behavior that are important for continued solvency. In total, there were eight research questions relating to future solvency for Green Bank and only two of these eight were determined to be inconclusive. Results from the remaining six research questions points toward continued solvency for Green Bank.

Factors examined in these six research questions were, financial slack, merger activity, changes in tangible common equity ratio, reputation, board and management changes, and stock price and dividend changes. For the three quantitative factors, financial slack, tangible common equity ratio, and stock and dividend prices, the trends look positive. Based on the results of this study, it is likely that these two ratios and stock price and dividends will increase. Increase in these factors is an indication of future solvency. The three qualitative factors, merger activity, reputation, and board and management changes are trending to future solvency as well. Policies put in place by bank management have placed each of these factors on solid ground and moving in the direction of future solvency. With all things considered, 75% of the research questions relating to future solvency suggest that Green Bank will remain solvent for the foreseeable future.

Although data collected for this study demonstrates that Green Bank is currently solvent and is likely to remain solvent for the foreseeable future. The question now becomes, How far out is the foreseeable future? In the business world, a common practice is to use forecasts that extend out to five years from the date of publishing. The same practice should be used for the results of this study. One way to extend the results of this study is to conduct the study every year. Once the results are obtained, the results can be considered valid for five additional years.

To supplement the results of this study, analysis from Market Watch is now provided. In March of 2012, eight analysts issued ratings for Green Bank. Of the eight, five were "Buy" and the remaining three were "Hold." This means the analysts believe it would be a good idea to buy Green Bank common stock and hold on to it if an investor already has shares. A recommendation to buy the common stock of a bank is an indication that it will be viable for the foreseeable future (Analysts Estimates, 2012).

To provide a capstone for this study, the researcher asked the bank CEO to describe one decision that he made recently that will have the most profound impact on the bank over the next five years. To this he replied, "Hiring the right talent, place the right talent in the right seats." The act of putting the right people in the right positions throughout the company and the other indications from research questions two through nine, point to a future of solvency for Green Bank.

Now that the results of this study are available, what advice could be given to investors thinking about investing in a bank or even starting one of their own? To start a bank, first and foremost is the ability of the bank to obtain FDIC insurance. Without this, it is not possible to operate a bank as a going concern. In order to obtain FDIC insurance,

capital ratios must be met. These ratios are used to determine if a bank is solvent and able to meet its obligations.

Having sufficient capital ratios is dependent on the ability to raise capital, which is a process that can take several forms. Capital can be raised through an initial public offering of common stock. The initial public offering is a way to raise money initially but this is a one-time deal. Selling common shares after the initial public offering typically drives share price down and as a result should be avoided. Capital can be raised after the initial public offering through the sale of preferred stock. This type of stock allows a bank to raise capital without diluting common shareholder value.

As for continuing operations, the best way for a bank to raise capital is to attract depositors. Banks use the money from deposits and make loans in which they receive interest from borrowers over time. A difference of about 3.8% between the interest charged for loans and the interest paid to depositors will result in maximum profits from this side of the business.

Once the process of raising capital is established a bank should then seek to obtain good financial slack numbers and a tangible common equity ratio above 6%. Both of these measured will allow a bank to cover losses during a time of huge write-offs and a tangible common equity ratio of 6% or greater is required by regulators in order to participate in mergers. Being able to merge is important because in the future size will matter. Smaller banks may have trouble establishing the infrastructure necessary to deal with new regulations. The Dodd-Frank Bill will impose new requirements on banks requiring them to have greater infrastructure to keep up with the new regulations. Some bank executives believe that banks valued at less than $1B may not have the necessary

resources to keep up with the new rules. This in turn could lead to their failure and subsequent closure by the government.

Managing a strong bank is aided by a strong ethical perception. Customers will not place their money in a bank they do not trust nor will investors by the stock of an unethical bank. Make sure strong ethics programs are in place and not just a one-time deal. Provide training to new employees and emphasize how important ethics are to the successful operation of a bank. Ethics hotlines are also valuable tools. These could be handled by a third party, which will report ethics violation to the appropriate board committee. Handling reporting in this way will allow employees to be more comfortable when pointing out an ethics problem. Once these programs are in place a good way to gage the ethics of your bank is deposit trends over time; Are they increasing? Or are they decreasing? Or even are deposits increasing and coming in from the bank's closest competitors? That is the best trend of all.

Lastly, properly maintain common stock price and dividend payouts. Probably one of the first indications an investor looks at in a bank is its common stock price. A healthy stock price will attract investors and provide stability for the bank. A good way to ensure this is to pay good dividends. Make every effort to pay dividends that will yield a return on investment that meets or exceeds similar investments. When investors receive substantial dividends, they have a tendency to buy the stock and hold it for an extended period of time, usually more than a year. Because investors have a reluctance to sell, this places upward pressure on stock price and causes the price to rise. As mentioned previously, a good stock price with the potential to increase is probably the first thing an investor will look at.

For those who are not yet ready to start a bank of their own, results from this study can also be used to select a bank to invest in. First and foremost, check to see that the bank in question is insured by the Federal Deposit Insurance Corporation (FDIC). This will let investors know that a regulatory body believes the bank operates safely and securely. Also, in the case of failure, depositors are insured up to established limits.

Next, examine the tangible common equity ratio for the bank. This takes into account a bank's disposable income in relation to its assets. Values for this ratio should be above 6% in order for the bank to be allowed to participate in mergers and acquisitions which is vital for a bank to grow. Tangible common equity ratios above 6% also mean the bank can cover huge write-offs if they occur. This was important in surviving the financial crisis of 2008 and may be beneficial in the future.

Reputation is also important for the health of a bank. If the population does not trust a particular bank, it will eventually fail. To assess reputation, review any sanctions imposed against the bank or any lawsuits that show unethical behavior. A culture of unethical behavior at a bank as well as any organization will eventually lead to its downfall.

Lastly, look at the stock price and dividend history for the bank. When considering this, remember, there is a bullish investment and a bearish one. The bear, or the conservative investor, may choose the preferred stock of the bank. Preferred stock is a hybrid investment instrument, which acts somewhat like a bond and somewhat like stock. The price for preferred shares changes only slightly but typically pays dividends of about 9%. Also, in the event of bankruptcy, preferred shareholders are paid before

common shareholders. Preferred shares are available for periods usually not exceeding five years. After that time, a new set of preferred shares may be offered.

For the bull, or the aggressive investor, consider common shares. Common shares can increase greatly when compared to the capital returns of preferred stock. Common shares typically pay dividends as well. The dividend yield is less than that of preferred shares and generally falls between 2% and 6%. Common shareholders are also paid after preferred shareholders in a bankruptcy situation. Unlike preferred shareholders, common stock does not have an expiration day and may be held for decades.

Suggestions for Further Study

This study examined the solvency of a rural commercial bank and was based on data such as financial ratios, stock prices, new government regulations, bank interest rate variations and executive sentiments concerning mergers and acquisitions. What this study did not include was perceptions and sentiments of the workforce and the customers of the bank. During the study, employees only at the executive level were interviewed and customers were not canvassed at all. A future researcher may find it interesting to examine how rank and file employees of a bank and even lower level managers contribute to the heath, performance, and ultimately the solvency of a commercial bank. A future researcher may also find it beneficial to also ask customers why they chose to deposit money in a bank and use this information to supplement raw deposit data in evaluating future solvency.

Additionally, the new Dodd-Frank legislation will affect the banking industry going forward. During this study, the Dodd-Frank Bill was determined to be

inconclusive with regards to future solvency for Green Bank. This determination of inconclusive may be an understatement. The exogenous shock event that affected the banking industry was the global financial crisis of 2008. Exogenous shock as it affects banks has been studied previously. In 1982, a wave of new banking regulations were codified by the government and as a result banks had to understand these new regulations and learn to cope with them. These new regulations represented an external shock event.

As learned in this study, under the Dodd-Frank Bill, the government plans to conduct studies and use those results to enact additional banking regulations. A future researcher may find it interesting to examine the effects of Dodd-Frank on the banking industry and compare with the effects of the 1982 regulations or even the effects felt by banks following the crisis of 2008.

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APPENDICES

APPENDIX A

1992-1995 Bank and Thrift Mergers Greater than $500 Million

Year	Seller	Buyer	Aggregate Consideration
1995	First Chicago	NBD Bancorp	$5,390 million
1995	Midlantic	PNC bank	$3,000 million
1995	CSF Holdings Inc.	NationsBank Corp.	$516 million
1995	First Fidelity	First Union Corp.	$5,463 million
1995	First Fed Michigan	Charter One Financial	$556 million
1995	West One Bancorp	U.S. Bancorp	$1,575 million
1995	Shawmut National Corp.	Fleet Financial Group	$3,686 million
1995	Michigan National	National Australia Bank	$1,516 million
1994	Worthen Banking	Boatmen's Bancshares	$608 million
1994	Anchor Bancorp Inc.	Dime Bancorp	$552 million
1994	Metropolitan Financial	First Bank System	$874 million
1994	Citizens First Bancorp	National Westminster	$524 million
1994	Continental Bank	Bank America	$ 2,300 million
1993	Independence Bancorp	CoreStates Financial	$513 million
1993	Liberty National Bancorp	Banc One Corporation	$842 million
1993	Society Corporation	KeyCorp	$4040 million
1993	Valley Bancorp	Marshall & Ilsley	$803 million
1993	Cragin Financial	ANB Amro	$563 million

1993	MNC Financial Inc.	NationsBank Corp.	$1,361 million
1993	National Community Banks	Bank of New York	$ 652 million
1992	Colorado National Bankshares	First Bank System	$528 million
1992	Dominion Bankshares	First Union Corp.	$1,024 million
1992	Key Centurion Bankshares	Banc One Corporation	$546 million
1992	First Florida Banks	Barnett Banks, Inc.	$885 million
1992	Valley National Corp.	Banc One Corporation	$1,248 million
1992	Team Bancshares	Banc One Corporation	$782 million
1992	INB Financial Corp.	NBD Bancorp	$912 million
1992	Puget Sound Bancorp	KeyCorp	$807 million

Note: Information for this table was obtained from (Spiegel, Gart & Gart, 1996, p.68).

APPENDIX B

The Altman Z Test

E.I. Altman developed this test that would be used for determining whether or not a publicly traded manufacturing firm will go into default on its financial obligations. It is a measure of default risk. This formula weighs financial ratios that are obtained from a borrowers balance sheet and then applied discriminant analysis. The formula takes the following form:

$$Z=1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$$

where

X_1= working capital / total asset ratio

X_2 = retained earnings / total asset ratio

X_3 = earnings before interest and taxes / total asset ratio

X_4 = market value of equity / book value of long term debt ratio

X_5 = sales / total asset ratio

Higher values of Z indicate a lower chance of borrowers going into default. Firms with a score < 1.81 are a high default risk. Scores that are between 1.81 and 2.99 are an indeterminate default risk, and scores > 2.99 represent a low default risk (Saunders & Cornett, 2004, p. 562-563).

APPENDIX C

Questionnaire for Green Bank Executives (Revised)

1. Describe the bank's position on future mergers or acquisitions.

1a. What would be the reason for a future merger or acquisition?

2. Describe rationale for mergers or acquisitions between the years 2003 and 2007.

2a. Describe the difference in the rationale for mergers and acquisitions between the years 2003-2007 and 2009 and beyond.

3. Do you believe that the regulatory changes, specifically liquidity programs such as TARP, will help the bank remain solvent going forward? Explain.

4. Do you believe the provisions in the Senate Regulatory Bill will help the bank remain solvent? Specifically…

4a) with regards to the regulation of financial derivatives, in so far as they will be regulated by the SEC?

4b) the creation of a consumer protection watchdog agency located within the Federal Reserve Bank?

4c) preventing abusive lending practices for homeowners?

4d) the ability of the federal government to shut down large failing financial institutions?

4e) improved banking regulations?

4f) having shareholders vote on executive pay?

5. How do you think the bank's five-year stock price will react to the banks financial condition? Explain.

6. Do you find it difficult to reach consensus with the board members when discussing new strategies for managing the bank?

7. What ethics programs are currently in place and how have these programs improved the reputation of the bank?

8. Have there been any changed in the senior management ranks following the crisis of 2008?

9. What trend do you see for the dividend payout in the next five years?

10. What administrative actions enabled your bank to withstand the financial crisis between 2009 and 2011?

APPENDIX D

Revised Research Questions based on Results of the Pilot Study

1. How have the solvency ratios for the bank changed following the global financial crisis of 2008?
2. How has the bank changed its solvency indicators following the crisis of 2008 as compared to the years 2003-2007?
3. How has the bank changed its financial slack profile in response to the exogenous shock initiated by the global financial crisis of 2008?
4. Has there been any changed in the reason that the bank would seek a merger or acquisition to remain solvent following the global financial crisis of 2008?
5. How has the bank's change in the current tangible common equity ratio increase the likelihood of a merger or acquisition?
6. Has the bank changed its technology expenditure portfolio following the financial crisis of 2008? (will not be used in the study due to irrelevance).
7. How has the attitude of the banks customer's changed with regards to reputation following the crisis of 2008?
8. How has the bank changed its top management mix and board members in order to maintain expected performance following the financial crisis of 2008?
9. How will the regulatory changes enacted by the federal government help or hinder the bank to remain solvent going forward?
10. How has the common stock price and the dividend payout for the bank changed following the financial crisis of 2008?

APPENDIX E

Written Consent Form for Bank Executives

Dear, --------

During the past several years, the Green Bank has not accepted any federal funds nor has it suffered from the financial crisis that caused many banks to close. My dissertation will explore what factors were responsible for this operational success. The information gained from this study may help to better understand the effects of financial crises on rural bank solvency. The following information is provided in order to help you to make an informed decision whether or not to participate. If you have any questions please do not hesitate to ask.

The purpose of this study is to determine the current solvency and the likelihood of future solvency for a rural commercial bank. Participation in this study will require one hour of your time for an interview regarding your opinions on issues related to bank performance and solvency. There are no known risks associated with this research.

Your participation in this interview is voluntary. You are free to decide not to participate in this interview or to withdraw at any time without adversely affecting your relationship with IUP. If you choose to participate, all information will be held in strict confidence. The information obtained in the interview may be published in educational journals or presented at meetings but your identity and the identity of your bank will be kept strictly confidential.

However, since there are persons who could identify specific details regarding specific banking institutions please be assured that you will have the opportunity to suggest modifications in the narrative if you feel modifications are necessary.

If you are willing to participate in this study, I can meet with you at your office to conduct my interview at a time convenient to you.

APPENDIX F

Background for Green Bank

The bank which is now known as Green Bank, started as Du Bois Deposit National Bank in 1880 (Bank History, 2010). During the Great Depression, the bank started participating in FDIC deposit insurance programs (Deposit Insurance, 2010). Green Bank became a member on January 1, 1934. Through a series of mergers and acquisitions, Du Bois Deposit National Bank became known as Green Bank in 1995.

Green Bank is owned by the Green Financial Corporation, which serves as a holding company. The stock is traded under the ticker symbol FCF. Green Bank provides commercial banking and consumer services to individuals and small to mid-sized businesses in the Central and Western Pennsylvania area. Some of the services available through Green Bank are personal checking, interest bearing checking accounts, savings accounts, health savings accounts, insured money market accounts, debit cards, investment certificates, fixed and variable rate certificates of deposit, and IRA accounts. This bank also provides a wide range of services to assist small businesses with their financial needs. As of January 28, 2010, the bank operated 115 retail branch offices in 15 counties in the Western and Central Pennsylvania area (Bank History, 2010).

Like other commercial banks, Green Bank has not been immune to the market forces that are affecting the banking sector. However they have grown and have positioned themselves for growth for years to come. Through the implementation of sound and prudent lending decisions, Green Bank was able to take advantage of tremendous opportunity during this economic uncertainty.

By implementing a program of developing new relationships with solid credit-worthy customers the bank was able to increase core net income by 12.9% during the toughest financial times in history (Annual Report, 2008).

During the fourth quarter of fiscal year 2008, Green Bank was able to raise funds by successfully executing a public offering of common stock. The bank's ability to raise $100 million through this public offering demonstrates confidence by investors that Green Bank is positioned for future growth. As a result of this capital raise, the bank did not apply for funds through the Capital Purchase Program, which is part of the federal government's Troubled Asset Relief Program (TARP) (Annual Report, 2008).

APPENDIX G

In-Depth Discussion of Capital Ratios

As discussed in chapter 4, the leverage multiplier for a leverage ratio of 5% is 20. This is found by taking the reciprocal of the decimal value of the percentage. For example, 1/(.05) =20 which is the leverage multiplier discussed above. A 5% leverage ratio leads to the following example: $50 (cash reserves) x 20 (multiplier) = $1000 (assets of the bank). Alternatively, $50 (equity)/ $1000 (assets) = 0.05 or 5% which is the minimum value required for the Tier 1 Leverage Ratio by government regulators. This 5% leverage ratio requirement is the backstop value regulators feel that if a bank drops below, it will fail. The other two ratios, the Tier 1 Risk Based Capital Ratio and the Total Risk Based Capital Ratio, measured for research question one act in a similar way except the difference is that these two ratios consider risk-based assets so their leverage multiplier is not as high. The backstop values for these two ratios are 6% and 10% respectively.

Leverage Multiplier for Tier 1 Risk Based Capital Ratio (6%) = 1/(.06)= 16.67

Leverage Multiplier for Total Risk Based Capital Ratio (10%) = 1/(.1) = 10